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Introduction

Ewen Mackenzie-Bowie

The first research venture of ICL was undertaken in January 2007 when our ECE lecturer Alina Abraham presented a paper on "Why and how to incorporate New Zealand sign language in the New Zealand Early Childhood Curriculum: Te Whariki," at the Australian Research in ECE Conference, at Monash University. Then in June the same year our IELTS specialist Geetha Ramalingam presented a paper on "The Missing Link in English Language Teaching" to the second biennial *International Conference on Teaching and Learning English in Asia*, in Langkawi, Malaysia. Then in 2008 our ECE lecturer Tahera Afrin presented her paper, "A study on triangular perspectives of culturally competent assessment in a multi-cultural environment," to the *Tertiary Assessment Symposium* at the Victoria University of Wellington. In those days we were still called International College of Linguistics and a handful of us pursued our specific research interests within our individual coccoons.

Our research activity picked up significantly with a proposed partnership with a Californian university and the formation of the Research Advisory Board in February 2009, chaired by Dr John Hinchcliff. The Board has met annually since then and we particularly wish to salute the contribution of John and Prof Ron Newman, who have inspired us to a number of achievements, including the production of 15 *Research Outlook* newsletters, 20 journal and book publications, 20 conference presentations, several internal research projects on student achievement and a project undertaken with NZIM into the competencies of New Zealand managers. We have a five-year plan and a healthy and energetic research profile.

Our latest research venture is presented in these pages, with the first of what we trust will become a series of annual publications. John Hinchcliff observes in his foreword that this is a somewhat eclectic volume, and we make no apology for the lack of a central theme. If you do not relate to the thrill of trade liberalisation or the problems of Auckland's public transport system, try projecting yourself into the shoes of a patient ESOL professional grappling with the technical perspectives of Japanese engineers!

Our research interests cover a wide range, but most of the articles focus on our core areas of teaching activity: education, business and ESOL. We commend this cornucopia of research, trusting that it will be both stimulating and enjoyable.

Ewen Mackenzie-Bowie
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Foreword
John Hinchcliff

The title of this book produced by ICL Business School may suggest to some a less than interesting table of contents.

But this *is* an interesting volume.

Also, it satisfies current requirements of the advanced tertiary education sector as dictated by the Education Amendment Act in 1990. This is to nurture research as a key and evident requirement of academic excellence because "research and teaching are closely interdependent".

The in-house contributions offered by this journal reveal a breadth and depth of intellectual curiosity within the faculty of the School. The Principal and his team provide for us a significant and worthwhile volume.

Although educational topics are pre-eminent, there is no required, narrow and over-riding theme limiting the diversity of the pieces. This means we are offered and should welcome an interesting range of ideas in this collection of research-based explorations.

Educational emphases are offered by several contributors:

Alina Abraham explores individualised and personalised learning using pictorial strategies within New Zealand.
Tahera Afrin examines, with tangible suggestions, the challenges of internal and external moderation in early childhood education.
David Mann considers the failure of educators of English for Specific Purposes to connect with students working with specialised technical concepts. He offers both an assessment and a strategy for moving forward.
Desmond Patel and James Fleming scrutinise the correlation between scores determined by proficiency tests of the international IELTS and the School's proficiency test.
Dr Jamali cooperates with Korean Professor Hong in proposing a new curriculum framework for Bangladeshi primary schools, following the government's decision to add three grades to primary education.

Management issues are explored:

Dana Cumin considers the negative and positives of differing models of cooperation involving large and small companies.
Saurav Satyal examines how the Auckland Regional Transport Authority coped with a major sporting event and offers recommendations for the future.
Dr Talukder reviews contrasting theoretical and empirical commentary on the crucial but unresolved issue of trade liberalisation.

Ewen Mackenzie-Bowie's assessment of an ethical journey by Tolkien's hero, Bilbo Baggins, offers a refreshing commentary on an interesting and appealing adventure.

This collection of applied and strategic articles manifests the commitment of Ewen Mackenzie-Bowie and his team at ICL to nurturing educational excellence and useful relevance. These unique efforts are to be enjoyed for their content, respected for their academic merit and valued for their practical value.

John Hinchcliff MA (Hons), PhD, HonD, CNZM

1. Creative, innovative and successful methods of teaching in adult education: pictorial strategies and personalised learning

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Abstract

For any pitched sound in nature, there is an inner structure of that sound displaying a series of harmonics, or partials, that vibrate with different frequencies. Due to the mathematical underpinnings of those frequencies, the pitched sound may be visualized with a Cartesian (logarithmic) spiral design (Novac, Charalambides, 2003). The language of mathematics and music can therefore be pictorial, and so the elements of music – e.g., intervals, rhythmic and harmonic structures – originate in the harmonic series (THS), and can be matched against spiral and circle designs. This paper discusses such visualizations suggesting from preliminary findings that pictorial representations of music are beneficial to: 1. Explain the form in a musical piece; 2. Facilitate students' understanding of compositional processes in music; 3. Enhance memorization in music performance; 4. Develop such visualizations into a method of teaching in music and beyond. Phenomenology and narrative enquiry is the framework for the current practice lead research (Cohen, Manion, Morrison, 2002; Van Manen, 1997) which engages creativity and visualization as a teaching strategy with its techniques, e.g., mind mapping, scrapbooking and poster/creative 2D or 3D designs.

Keywords

Pitched sound; harmonic series; harmonic structures; personalized learning; pictorial representation; Cartesian spiral; music analysis; music composition; music teaching; coaching for music performance; musical creativity.

Alina Abraham is an educator and musician who has worked in the tertiary sector for more than two decades, at ICL Business School, Whitireia International, the University of Otago, and other institutions. Her qualifications include post-graduate studies in education and undergraduate studies in music and early childhood education. Her practice-led research stems from the exploration of the nature of the pitched sound (mathematics/acoustics) and extends to the use of visualisation and pictorial strategies in teaching, for which she has presented papers at national and international conferences in Hawaii, Australia and New Zealand. Alina started to work for ICL in 2006. She is keen to further develop her research on pictorial semiotic aspects with a focus on the cultures and pedagogies of the Pacific region.

INTRODUCTION

Music acoustics shows that an elastic body resonates with different ratios over its length – e.g., in strings or air column musical instruments. Any pitched sound, i.e., 'fundamental', can become the generator of a whole collection of other accompanying sounds called 'partials', 'harmonics', or 'overtones' – oscillators that are integer multiples of the fundamental sound's frequency. Some musical instruments generate 'inharmonics' instead – e.g., bells. Inharmonics are oscillators that are not integer multiples of the fundamental frequency (Backus, 1977). This paper does not discuss the collection of inharmonics; this paper discusses the collection of overtones that are produced by the vibration of an elastic body, collection called 'harmonic series', and its visual representation implications.

The harmonic series (THS) is a mathematical model in which *the strictly increasing series of 'n' oscillators represents multiples e.g., 1f, 2f, 3f of the frequency of a fundamental sound* (ibid.2) (Fig.1).
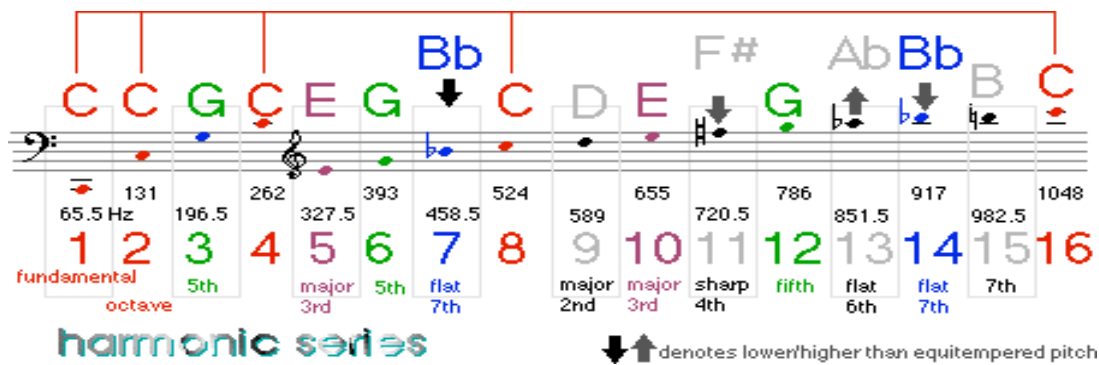
Figure 1. Harmonic Series (HS) on "C" - a linear representation

Based on colour-coding, Fig.1 shows how the odd harmonics generate geometric progressions with the ratio r = 2, i.e.{1, 2, 4, 8, 16…};{3, 6, 12, 24…};{5, 10, 20…}; {7, 14}. Inspired by Descartes' *Equiangular spiral* & *Apollonian packs* theories, and developed from my own work under a different surname, i.e., Novac (Novac, Charalambides, 2003), Fig. 2 shows the same range of harmonics as Fig. 1 - in a 2D and 3D representation, this time, combined.
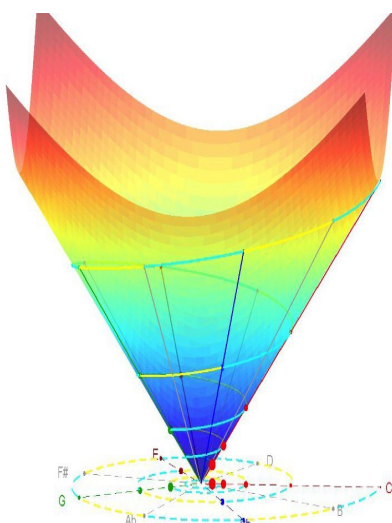
Figure 2. HS on "C" - curvature/geometric representation

In Fig. 2, the geometric progressions with the ratio r=2 represent radii starting from the twelve nodal points of the total chromatic scale of the well temperate system. These 12 nodal points – i.e., pitches of the total chromatic, also represent the division of the circle in 12 areas – as described by Descartes1 is an inherent property of the logarithmic spiral in which the angle between radii is a constant of 2100 (ibid).

As pointed out by Schenker (1935) one harmonic series cannot offer the subdominant note. Extending from Schenker (1935) we show that the whole total of chromatic notes may be obtained from two harmonic series placed one perfect fifth apart (Fig. 3).

Figure 3. Harmonic Series on "C", and on "F"

Between 2002 and 2004, the findings above were presented in various Research Seminars Series and Conferences in Musicology in Dunedin, Wellington (NZ), and Sydney (AU), being contextualized in the inter-disciplines domains like music cognition (Krumhansl, 1979, 1978; Patterson, 1986), and the aesthetics of music (Bekesy, 1960; Ghyka, 1952, 1946).

Extended to the use of pictorial strategies in teaching music [but not limited to], the findings above continued to be presented in national and international conferences between 2012 and 2014 2. With interpretive lenses, the current paper analyses the possibility that visualization coming from of circle and spiral models – pertinent to the harmonic series' of a pitched sound may, or may not, be inherent to musical composition, useful for music analysis, valuable for teaching/coaching music performance practice, and as a support system for better learning.

Pictorial representation responds well to the need of creative methodologies and strategies in today's education systems 3. Creativity and visualization seem to facilitate students' better

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understanding of content and form in music (and not limited to); visualization in general seems to be the support system that permits students the access to the 'zone' of the brain where results come naturally and effortlessly in live / public performances, in music, sports, or other, with the possibility of transfer of skills into other areas, (Coyle, 2009; Lardon, 2008). This is the rationale for the New Zealand school curricula to focus on creativity in terms of learning outcomes, with music, dance, and drama, for example.

A potential *pedagogy of creativity* is envisaged, and expected to be *'life changing'* for the K–12 students[4]. Paradoxically – with the exception of specialized performing arts schools at college level and higher, main stream education K-12 does not yet see *creativity* as a learning attitude, skill, or catalyzer in building knowledge. This leads to concern that in fact schools in general, today, …*kill creativity*, says Sir Ken Robinson[5] and the solution is to educate the heart and mind with *creativity* and being in the *zone*, instead[6] – materials available with the TED series, and www.Youtube.com.

The intellectual exercise of using pictorial representation is to apply nature's own strategies, or 'voice', to mind constructs, due to the structural similarities between the two. A list of natural and human-made products - expressions of the same logarithmic spiral discussed above as a pattern, follows:

Typhoon : http://www.businessinsider.com.au/what-the-super-typhoon-haiyan-would-look-like-on-the-east-coast-2013-11

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[4] A potential *pedagogy of creativity* is envisaged, and expected to be *'life changing'* for the K–12 students [3]. Paradoxically, yet, public schools as of 2012 around the globe, *neither study creativity, nor apply creativity in any curriculum*. With the exception of specialized performing arts schools at college level and higher, main stream education K-12 does not yet see *creativity* as a learning attitude, skill, or catalyzer in building knowledge. The worry builds up in the belief that in fact, schools, in general, today, …*kill creativity*, Sir Ken Robinson says [33] and the solution is to educate the heart and mind with *creativity* and being in the *zone*, instead [34], [35], [36] – materials available with the TED series, and www.Youtube.com.

[5] http://www.ted.com/talks/ken_robinson_says_schools_kill_creativi ty.html?quote=83

[6] http://www.youtu.be/V6SaIg5eNMQ;
http://youtu.be/I1A4OGiVK30;
http://www.youtu.be/xQrPviAAd4c;

Mosque of Samara: http://en.wikipedia.org/wiki/Great_Mosque_of_Samarra

Galaxy V838Monoceratis: http://www.spacetelescope.org/videos/heic0503a/

Hawaiian fern: http://hawaiiw.net/volcanoes-hawaii-fern-national-park/

Galaxy M100: http://commons.wikimedia.org/wiki/File:SN1979C_in_M100.jpg

Nautilus shell - http://en.wikipedia.org/wiki/File:NautilusCutawayLogarithmicSpiral.jpg

1. PICTORIAL VISUALISATION OF MUSICAL STRUCTURES DERIVED FROM THE HARMONIC SERIES (THS) MAY EXPLAIN THE FORM IN A MUSICAL PIECE

Firstly, selecting the harmonics 1, 2, 3, 5, 8 according to Fibonacci series from the harmonic series (THS, Fig. 1), we obtain the 'chord of nature' (Schenker, 1935) : that is the "Major" triad, extensively described by Cooke (1959); the golden ratio Phi – 1.618 holds the key to the mathematical relationships between these harmonics that form this common triad in western music thought. Hence all tonal music harmony derives from here. Even modal music is based on the first ratios (involving octave, fourth and fifth) of this series. It is possible that the differences that outside the Western music other contexts present would be generated by a different perception triggered by harmonics from 20 above in a harmonic series of a pitched sound, or other considerations of sensory perception, or affinity to inharmonic series. Not only harmony but also scales can derive from THS, e.g., the acoustic scale - often used by jazz music and classical music, too.

A visualization of a major triad - using Fig. 2/the bottom spiral, for example, would allow us connect the nodal points / harmonics 2 ("C"), 3 ("G") and 5 ("E"), obtaining a triangle – visual representation of the C-E-G major chord (a 'circle' representation). Not only a major chord can be represented by a triangle: any triad can be represented, as required by the musical examples involved. However, to connect harmonics at their real (register) pitch on a spiral representation, e.g., to connect 1 ("C"), with 3 ("G"), and any multiple of 5 ("E"), would elicit the use of another spiral, e.g., Fig. 2 /the upper spiral that is a 3D one, that would accurately suggest a spatial distribution of harmonics along the registers. In other words, while letters and numbers cannot so much differentiate between a 'C' pitch that sounds different in different octaves, a visual (graphic, pictorial 3D) representation, would. Visualization, therefore, is a bonus.

The same spiral is used by Lendvai (1971) in explaining the significance of the golden mean in Bela Bartok's music. "Spiral", by Stockhausen, composed in 1969[7] is a composition exploiting a similar approach. Inspired by Stockhausen, Jill Purce describes the presence of this pattern in human consciousness, anatomy, and socio-cultural reality (1974).

Visualization can trigger the shape of the circle/spiral, e.g., in improvisation and/or forms like dance/ stanza/ rondeau - evidencing a discourse structure A (A) – B – A– C – A etc. We could, for example, say that the musical discourse comes back again and again in the same point, like a 'lasso'; a learner's mind would retain the image, and in a public performance situation, based on rote learning, or experiential, the student would learn /rely on visual imagery, and succeed.

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[7] http://classical-music-online.net/en/production/9031

2. PICTORIAL VISUALISATION MAY FACILITATE STUDENTS' UNDERSTANDING OF COMPOSITIONAL PROCESSES IN MUSIC

For centuries now, there has been an immense body of literature available in regards to the geometry of circle, spiral designs, and other geometrical shapes, connected to their possible spiritual connotations (Christensen, 2002; Tatarkiewicz, Petsch, Barrett, 1999). The first such model and music was described by Pythagoras, 6BC, according to his disciples (Tatarkiewicz, Petsch, Barrett, 1999), and described in Christensen, (2002). In Pythagoras' Circle of Fifths theory, the 360° of the circle is divided in 12 equal sections – similar to the divisions of time on a clock quadrant, and explained how the key centers of the total chromatic sounds relate to each other (Fig. 4).
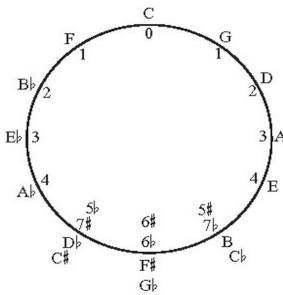
Figure 4. Pythagoras' "Circle of Fifths"

Twenty-three centuries later, with Descartes' Spiral, Pythagoras' philosophical model may now became a mathematical reality and a model too. (Fig.2 – the 2D / horizontal spiral evidences the 12 sections – where each node is placed a perfect fifth apart, by dividing the 360° of the circle to 12, which is a property of the logarithmical spiral).

In New Zealand music theory, a similar pictorial approach was used by Jenny McLeod in her 'Tone Clock Theory' treatise, after Peter Schat's harmonic theory using the twelve possible triads within the twelve note chromatic system – as shown in Appendix 4 of her treatise 8.

This approach may be applied in all music disciplines, e.g., music theory, harmony, analysis class teaching, etc. E.g., to explain a diminished chord (result of harmonics 3, 5, 7 in a HS on 'C') in a musical piece, e.g., Samsom (2012), it can be explained to students that in this piece, in the ostinato of the introduction and section 'A', a certain pattern – that is {1st, 5th, 8th sound ascending} starts from the 12 / 9 / 6 / 3 o'clock pitches – that is "C" / "Eb" / F# / "A" – according to a visualization based on Pythagoras' Circle of Fifths (Fig. 4).

Another example: With a pictorial representation teachers can easily explain, for example, the rhythmic sequence of the 'Rhythm Pyramid' (Fig. 5).
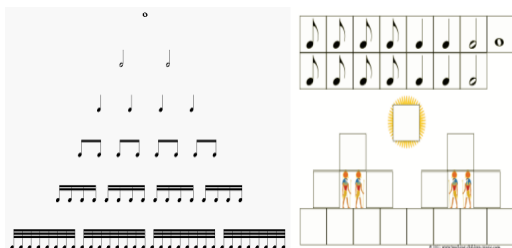
Fig. 5.a – "Rhythm Pyramid", pictorial representations

8 http://sounz.org.nz/resources/show/448

Or, teachers might explain using visualization how broken chords from the first and second degree of "C" Major follow the sequence of a 'Möbius strip' (Fig. 6). The pitches 'C', 'E', 'G', 'B', and 'D', 'F', 'A', 'C' will repeat on each side of the strip ad infinitum.
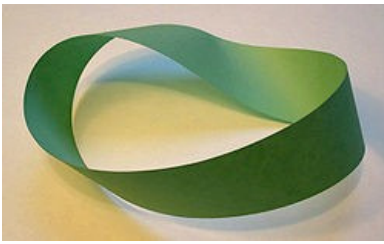
Fig. 6 -– Möbius strip

3. PICTORIAL VISUALISATION MAY ENHANCE MEMORISATION IN MUSIC PERFORMANCE

Coyle (2009) explains that apart from the neuronal synapses that facilitate reasoning and memorization in the brain, another substance that plays an extremely important role in memorization and reasoning in humans, is myelin. Myelin acts like an 'auto-pilot' mechanism in the brain that continues to work for the stabilization of information long after the initial stimulus is gone, that is for days and even weeks later. This is how reasoning and memorization are enhanced.

Reasoning is even more enhanced by iconic connotations. For example, students can associate a new concept to a familiar picture, e.g., a diamond shape diagram, zigzag, any of which is familiar. In this case, the teacher strategies would cater for personalized learning, and come from a competency-based curriculum perspective. Through repeated visualization of the iconic image it is expected that during a public performance the brain would respond from the 'zone' – a place in which performance comes easily, effortlessly – if, and only if, the learning has been consolidated in a manner as individualized and meaningful as possible (Gorrie, 2009).

4. PICTORIAL VISUALISATION MAY OFFER ENOUGH SUBSTANCE TO DEVELOP INTO A METHOD OF TEACHING

In specialized schools of the arts 9, creativity is more and more addressed today in order to 'personalize' student learning and adapt it to their own specific learning styles, understanding, and context of learning. More and more flexibility is required from teachers and from the curriculum to cater for individual learning needs. Increasingly, socio-constructivist theories of learning 10, e.g., Bruner - "discovery learning", "language acquisition support systems", "spiral curriculum", next to ecological models of development and a revival of Carl Jung's theories about the complexity of the mind /collective mind, 'dream' activity, creativity and play inspire new paradigms for a holistic learning in education11. In Aoteroa New Zealand, in the early childhood curriculum the arts curricula are very generous in terms of creative outcomes in student learning and development. Our future work will focus on these curricula, but not be limited to them.

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[9] http://calarts.edu/creativity/focus-areas
[10] http://en.wikipedia.org/wiki/Discovery_learning
[11] http://www.creativityinplay.com;

CONCLUSION

Music stimulates both the left and right hemispheres of the brain, as do pictures (Corballis, 2001). The use of a pictorial representation approach for music analysis, performance, teaching and coaching is hence beneficial to enhance students' individualized learning in music, within music, and beyond. By associating familiar images of objects or clusters of objects to new contexts, students relate in an almost subconscious, relaxed manner, observe structural similarities between old and new situations, and develop new understandings from old knowledge.

Pictorial representation can be incorporated in all disciplines at all levels, and contribute to the development of creative and innovative practices in education. Pictorial representation is supportive of all learning, at all levels – due to the individualized (personalized) facets of 'what' (content), 'why' (motivation), and 'how' (strategies) one may use in teaching and learning. A whole new direction in the theory of mind today explores the various zones of brain wave frequencies and associates those to the development of intuition, creativity, and learning[12]. Education leaders should be aware of current development of theories of mind, a direction that surpasses brain development and the known directions in current pedagogy.

To support the idea that pictorial strategies enhance learning, and also to support the idea that techniques like mind mapping, scrapbooking and poster/creative 2D/3D design and presentation are appropriate and largely utilized, we give two examples. Firstly, Helen May's latest article presented at the 2013 NZARE Conference in Dunedin 13, and secondly, the observation that the majority of conferences all over the world do contain poster sessions, e.g., 2014 HICOED, 2014, HICOAH (mentioned previously), and others. Our future work will elaborate more on these techniques with further conclusions.

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[12] http://www.matrix.s3.amazonaws.com

[13] http://www.nzare.org.nz/conference2013/nzare-programme-2013.pdf

Fig. 6 - Pictorial Representation Is the Musical Creativity of the Universe (Novac, Charalambides, 2003)

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2. External and internal moderation: The other side of the story*

Tahera Afrin

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Abstract

Tertiary Education Organisations (TEOs) that offer programmes including unit standards set by the New Zealand Qualifications Authority (NZQA) are required to participate in the national external moderation system. In spite of conducting regular internal moderation, TEOs often fail when internally moderated unit standard materials are sent for external moderation. This paper shares the experience of a non-university training provider and analyzes it further to identify factors that lead to ineffective moderation. The initial discussion concerns the two types of moderation that TEOs are involved in: internal and external moderation. Later it focuses on the issues and challenges related to these process. The background research covers nine unit standards that count towards the National Certificate in Early Childhood Education and Care (Level 5), taught and moderated by the teaching staff of a Private Training Establishment (PTE) in Auckland. The Content Analysis Method is used to analyze the moderation reports and moderation meeting minutes. The result reveals conceptual, realistic, preparatory, ethical, organizational and structural concerns both at the pre-moderation and post-moderation stages. The paper also includes recommendations for TEOs, lecturers working for TEOs and NZQA to change their approach towards moderation. The findings of this research will assist all relevant stakeholders to implement effective internal and external moderation.

Tahera Afrin is a teacher-educator for early childhood education (ECE). She has been working for ICL Business School since 2008. She completed her B.Ed. Honours and M.Ed. from the Institute of Education and Research at the University of Dhaka, Bangladesh. On completion of her studies, she worked as a teacher at pre-primary and primary levels and continued her career as a teacher trainer. From the beginning of her career, she has been actively engaged in research and the scholarship of teaching. She led several organisational research projects investigating the tension between cultures in the classroom, both for international and also for Maori and Pasifika learners; and exploring supportive cultural trends within the organisation. Her research interests are the impact of culture in the process of *Ako*, adult learners and their diverse needs, and the transition and professional growth of learners as early childhood educators.

*An earlier version of this article was published previously as part of the conference proceedings referenced as the following:

Afrin, T. (2012). External and internal moderation: The other side of the story. In M. Hodis & S. Kaiser (eds.), *Proceedings of the Symposium on Assessment and Learner Outcomes* (pp.2-14). Jessie Hetherington Centre for Educational Research, Victoria University of Wellington: New Zealand.

In relation to the unit-standard based qualifications system, moderation is a broad term that covers activities which help to ensure that there is a uniform interpretation and application of standards (NZQA, 1992).

Within educational institutes, moderation is the process of sharing expectations and understanding of standards to improve consistency in teachers' decisions about students' learning (TKI, 2014). The three purposes of moderation as summarized by *Te Kete Ipurangi* (TKI) are to make reliable, valid, evidence-based decisions, to make consistent decisions over time and to support the assessment of learning. These purposes indicate that moderation is to do with students' learning. Therefore, the moderation process has a fundamental stage that begins with the planning of learning. At the planning stage, certain goals to be achieved by the learners are determined. Teaching-learning practices in the classroom are the overlooked part of moderation that involves educators and learners. The following step is for learners to complete pre-designed assessment tasks. The teachers (markers) mark their efforts and make decisions about the competency of each learner. The noticeable part of moderation starts at this point where samples of marked assessments are gathered and given to another staff member (moderator) to check that the assessment tasks in the completed, marked samples reflect the planning, that the samples are marked completely and uniformly and also that the marker's decisions about the competency of the learners are valid or invalid. The last step of moderation is for the teachers to get feedback from the moderators so that they make changes in the assessment tasks or in their marking practice if required.

Non-university Tertiary Education Organisations (TEOs) participate in these moderation activities in partnership with the New Zealand Qualifications Authority (NZQA) to ensure that valid, fair, accurate and consistent internal assessments are made (NZQA, 2011 b). The moderation activities at the TEOs can be discussed in four different categories: i) pre-moderation, ii) post-moderation, iii) internal moderation and iv) external moderation.

Pre-moderation and post-moderation are directly related to the learners' assessments in terms of the qualification they are studying towards. All qualifications from the New Zealand Qualifications Framework (NZQF) consist of a certain number of credits and are designed with the inclusion of *unit standards* from different *fields, sub-fields and domains* set by the NZQA. For every unit standard that is being taught in class, learners need to be assessed against *prescriptions* supplied by NZQA, which are publicly available from the NZQA website. Pre-moderation is the process of designing, checking, and/or changing assessment tasks against the outcomes stated in the relevant NZQA prescription. This stage is important to ensure that the assessment tasks are aligned with the intended learning outcomes. Research shows that misalignment between assessments and curriculum poses a threat to students' achievement (Boss et al, 2001). At the pre-moderation stage, care is taken to ensure that the assessment tasks, which can be in the form of assessment booklets, assignments, tests or other forms of assessment tools, are aligned with the expected learning outcomes. Once the assessment tasks are finalized, the teaching-learning process takes place in class so that the learners can respond to the scheduled tasks. The learners' responses are usually marked and assessed by the lecturer/teacher/kiako who taught them in class. Other lecturers or teaching staff then check a small sample of these to monitor the consistency of the marking. This process is called post-moderation.

Internal and external moderation are the other two ways of categorizing moderation activities, which take place within the same or different organizations. The above-mentioned processes of pre- and post-moderation when done internally within the organization and involving the staff of the same organization, are termed *internal moderation*. When the process is conducted by personnel from a different organization it is called *external moderation.* In some contexts, it is accepted that the teachers are likely to know more about [their] pupils than an external examiner, and that [they] can provide more information about them than a necessarily short examination can hope to do. However, what [they] cannot do is to be sure that [they are] accurately assessing the standards of [their] own pupils in relation to those of other pupils in other schools; this requires either positive, widely informed and responsible moderation, or an external examination (Schools Council, 1964 in Chamberlain, 1988: i). The rationale behind external moderation is to ensure high quality teaching-

learning is achieved and maintained at the required national level, verified by a third party outside the organization. For some TEOs in New Zealand, for which NZQA is the Standard Setting Body (SSB), this third party is NZQA itself. Once external moderation is completed, NZQA sends moderation reports to the TEOs with feedback. The reports have sections such as 'overview', 'commentary', and 'moderation results', wherein the overall feedback is summarized. If the external moderator is satisfied, the overview section states that the assessment materials meet the national standard and in the commentary it mentions that the assessor judgments about learner performance are met. This type of feedback is commonly known as a 'pass' within the organizations. When the moderation report includes any requirement of change, it is known as a 'fail'.

Although the two processes of internal and external moderation have the same purpose, the different perspectives applied to these processes by TEOs and NZQA often create confusion and lead towards a 'fail' in external moderation. In addition, lecturers at TEOs often disagree with the NZQA moderation decisions (NZQA, 2010:9).

This study was conducted to investigate the processes of internal and external moderation and to understand the reason for these points of disagreement. The aim of the study was to identify the challenges that are faced in internal moderation and develop strategies to enable TEOs to have greater success with external moderation. The research questions involved queries in three major areas: 'What are the usual issues raised by the external moderators?' 'What are the challenges faced in internal pre- and post-moderation?' and 'How can we achieve better and more effective moderation processes?' These queries were addressed by looking at the way moderation takes place within an organisation. The qualitative research paradigm was adopted. The case study was designed by following Robert K. Yin's design (Yin, 1984: 23). The research investigated a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly evident. Multiple sources of evidence were also used in this research.

One Private Training Establishment (PTE) from Auckland was selected for this case study. This PTE has five departments, one of which is Early Childhood Education (ECE). The ECE department administers the National Certificate in ECE (level 5). The background research for this paper analyzed the moderation activities of this department in 2010. The Annual Moderation Plan 2010, which included nine unit standards from the qualification (see table 1), was investigated in detail.

Table 1 *Nine Unit Standards from Annual Moderation Plan 2010 at the Selected PTE*

Field, sub-field and domain	US No	Unit Standard (US) Title	Level	Credit	Status	NZQA presc-ription	Ver-sion
Education > Early Childhood Education and Care > Early Childhood: Professional Practice	9293	Describe and reflect on expectations, and develop own philosophy, of professional practice in an ECE service	6	6	-	Version 2	Version 3
Education > Early Childhood Education and Care > Early Childhood: Educational Theory and Practice	10025	Demonstrate knowledge of protection for young children from abuse	3	2	Expiring 31 Dec 2014	Version 3	Version 3
Sciences> Home and Life Sciences> Food Technology and Nutrition	6632	Apply knowledge of age-related nutrition needs in providing food for a child	2	5	-	Version 3	Version 3
Education > Early Childhood Education and Care > Early Childhood: Educational Theory and Practice	9321	Practise safe supervision of young children in an early childhood setting	5	3	Expiring 31 Dec 2014	Version 2	Version 3
Education > Early Childhood Education and Care > Early Childhood: Educational Theory and Practice	10029	Demonstrate knowledge of theories of human development across the lifespan and their relevance to ECE practice	6	10	-	Version 2	Version 3
Education > Early Childhood Education and Care > Early Childhood: Professional Practice	9297	Discuss and reflect on maintaining own health, wellbeing, cultural safety and professional integrity in an ECE service	6	5	-	Version 2	Version 3
Education > Early Childhood Education and Care > Early Childhood: Educational Theory and Practice	9301	Demonstrate knowledge of DOPs (1-5) for learning and development in a chartered EC service	5	6	Expiring 31 Dec 2014	Version 2	Version 3
Education > Early Childhood Education and Care > Early Childhood: Educational Theory and Practice	9324	Develop emergency plans and procedures for early childhood settings	5	4	Expiring 31 Dec 2014	Version 2	Version 3
Early Childhood Education and Care > Early Childhood: Family,	9332	Facilitate early childhood education and care arrangements with whānau/family	6	5	-	Version 2	Version 3

Note. Table developed by the researcher using NZQA prescriptions

Content analysis and interviews were the two research tools used in this study. For content analysis, the following documents were used relating to the nine unit standards from the Annual Moderation Plan 2010:

9 NZQA Prescriptions
9 assessment booklets (old) – OASB
9 assessment booklets (new) – NASB
9 student information booklets (old) – OSIB
9 student information booklets (new) – NSIB
9 external moderation reports from previous year – EMR
18 moderation meeting reports – MMR

The above documents were the secondary data source for this research whereas the ECE teaching staff was the primary data source. These documents were used as this study looked at the moderation processes that took place in 2010 in the ECE department of the selected PTE.

In the following section the characteristics of the secondary and primary data sources are discussed briefly.

The secondary data sources comprise documents related to nine unit standards from the qualification, the National Certificate in Early Childhood Education and Care (level 5). For a clearer understanding of this study, it is helpful to analyse the locations of the selected unit standards in the New Zealand Qualifications Framework (NZQF). The sample of this research deals with two fields from the 17 identified in the NZQA framework[14], education and sciences. Each field on the framework has sub-fields, for example, the education field has eight sub-fields[15]. The sub-field early childhood education and care is the most significant one in this study. Again, each sub-field has domains where there are a number of unit standards for each domain. For example the sub-field early childhood education and care has four domains[16] from which only two involve the unit standards selected in this research, educational theory and practice and professional practice.

The characteristics of the primary data sources are summarized below (see table 2).

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[14]Agriculture, Forestry and Fisheries; Arts and Crafts; Business; Community and Social Services; Computing and Information Technology, Core Generic; Education; Engineering and Technology; Health; Humanities; Law and Security; Manufacturing; Maori; Planning and Construction, Sciences, Service Sector; Social Sciences (NZQA, 2011 a)

[15] Adult Education and Training; Adult Literacy Education; Early Childhood Education and Care; Educational Administration; Generic Education and Training; Pacific Islands Early Childhood Education; Special Education; Teacher Education (NZQA, 2011 a)

[16] Early Childhood: Educational Theory and Practice; Early Childhood: Family, Whanau, Community and Society; Early Childhood: Home Based Caregiver Management; Early Childhood: Professional Practice (NZQA, 2011 a)

Table 2
Characteristics of Primary Data Source

Participants	Gender	Ethnic group	Experience in NZ TEO	Experience in the selected PTE	Type of contract
P 1	Female	Tongan	1yr. 3mths	3 months	Full-time
P 2	Female	European	10 years	5 years	Part-time
P 3	Female	European	2.5 years	2.5 years	Casual
P 4	Female	European	7 years	1.5 years	Part-time
P 5	Female	European/English	6.5 years	6.5 years	Full-time

Note. P stands for research participants attending interviews

The secondary data was collected at the first stage of data collection. The NZQA prescriptions, old assessment booklets and old student information booklets were collected from the departments' academic folders. For the purpose of internal moderation and bringing changes into the old booklets, two moderation meetings were held to discuss each unit standard in 2010 starting from March and running until September. The minutes of those 18 meetings were collected from the administrative folder of the ECE department. Also the external moderation reports for all those nine unit standards from the year 2009 were collected.

An e-mail invitation was sent to the ECE teaching team asking for their voluntary participation in the study. All five ECE teaching staff participated in the interviews and gave their valuable opinions.

The data collected from both the primary and secondary sources was analysed using the *general inductive approach* (Thomas, 2003; Bryman & Burgess, 1994; Dey, 1993). The documents were read thoroughly. Firstly, the external moderation reports were examined and issues were identified and noted in the first column of the content analysis form. Then the moderation meeting reports, old and new assessment booklets and student information booklets were examined to see how the issues were discussed and resolved and this was recorded in the next two columns. The sources, for example, MMR 9/07/2009, were noted besides each finding.

The trustworthiness of findings was assessed against the feedback from participants in the research. A seminar was arranged to disseminate and discuss the research findings and four out of the five participants attended the seminar, where they analysed and acknowledged the research findings. The research findings were also compared with, and found to be similar to, a survey previously conducted by NZQA (2010).

The case study, which was conducted in its natural setting and reveals information in detail 'recognizing its complexity and context' (Punch, 1998: 150), identified concerns at both the pre-moderation and post-moderation stages which were catagorised as conceptual, ethical, preparatory, realistic, organisational and structural. The table below shows an initial recording of the issues from each category.

Table 3:
Issues identified in content analysis

Concern category	Tally	Frequency
Conceptual	/////	5
Ethical	///	3
Preparatory	//	2
Realistic	///	3
Organisational	//	2
Structural	////	4

Conceptual issues arose from the attempt to reach consensus on interpretation of the wording in the NZQA documents. NZQA prescriptions and level descriptors are the two main documents that are used in the pre-moderation stage. The NZQA prescriptions include information on the version of the prescription, title of the unit standard, level, credit, purpose, pre-requisites/entry information, special notes or explanatory notes, outcomes, performance criteria (PC) / evidence requirement (ER), range and Accreditation and Moderation Action Plan (AMAP). The content analysis of this research shows that at the pre-moderation stage outcomes and PCs/ERs are always looked at (the old assessment booklets), whereas the level, range and/or special notes/explanatory notes are sometimes overlooked or misunderstood, resulting a failure to pass external moderation. Also, sometimes the teaching staff struggled to reach agreement over the meanings of PCs/ ERs. The level descriptors were also found confusing and lacking clear direction. Another conceptual issue arose from the discussion of selecting three students' completed tasks for moderation. Ideally, the lecturers should select learner A, B and C on the basis of high, medium and low performance. It is difficult and is also interpreted in different ways as the unit-standard based certificate programme identifies the learners as 'competent' or 'not competent', rather than judging their level of performance against their achievements.

Special notes or explanatory notes such as the Treaty of Waitangi[17], and the age-related stages of early childhood also raised some issues. Understanding the Treaty of Waitangi in the education context was also an issue. Individuals' own understanding of the Treaty varied and a lack of clear guidance how to incorporate the Treaty in tasks was felt with two of the unit standards, 9293 and 9332. US 9293 is the unit standard related to developing the learner's own teaching philosophy. It was found difficult to incorporate the Treaty in the task asking for the influential factors from the learner's life that contributed to developing her/his own philosophy. Yet the Treaty was added to the task instruction to satisfy the external moderator, not knowing how international students who had been living in New Zealand for only two months could incorporate the Treaty of Waitangi in their answers.

US 9332 relates to care arrangements between the ECE service and the family of the child attending. Again, not knowing clearly how The Treaty of Waitangi can be included in a task, students were nevertheless asked to write a settling-in policy. Similarly, it was thought difficult to include age-related stages for every PC/ER in 10025 (US related to child abuse) as the steps to seek professional help would be the same for the infants, toddlers and young children.

The following points relate to structural issues. Lecturers were recruited as teaching-staff at the TEOs. As tertiary teachers, they certainly have teaching, administration and pastoral care responsibilities. Analysis of moderation meeting minutes (and also interviews) revealed that the participants of this study questioned these responsibilities. They were unsure under which category moderation responsibilities fall. The structural issues can be briefly discussed as follows.

For internal moderation, checking the same booklet every time does not take much time. That is why there is no payment for this. However, should it be part of a lecturer's responsibilities? It is the lecturer's responsibility to photocopy 3 samples. Is it the lecturer's responsibility to moderate other

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[17] A treaty signed in 1840 between the British Crown and the Maori in New Zealand (Orange, 1987).

learners' photocopied work too? Since no payment is involved and also it is not specifically identified as a teaching responsibility, the processing of internal moderation is often irregular.

The authority does provide guidelines. However, these contain few examples.

There are two parts in each external moderation report. One checks the booklet (pre-moderation stage when at the institute). The other checks the photocopied sample of assessed student's work (post-moderation stage at the institute). Would it help to achieve more effective post moderation if these tasks were separated?

Realistic issues:

Having word counts in the Judgement: is it possible for all tasks?
Photocopying and keeping records: sometimes it is difficult and may be unidentified, such as when assessment materials include play resources, presentations and big posters.
Some unit standards have both theory and practical components. Sometimes it is difficult to keep track of and photocopy both theory and practice materials (practicum booklet) of the same student as they do them at different times.

Ethical issues:

Internal moderation: should it be done only when required by NZQA external moderation?
It is easier and more effective if the moderator has had the experience of teaching the same paper. So should the lecturers take turns to teach all papers? Yes, for moderation. No, for wisdom.
The Treaty of Waitangi: Should it be used just for the sake of using it? In some cases, it is more tokenism than real. Is it always relevant or required? As discussed under the conceptual issues, how authentic a response could international students or even many of the domestic students produce including The Treaty of Waitangi as an influential factor on the development of their own philosophy of life?
External moderators' comments and focus often vary. Sometimes it is felt that the TEO teaching staff are at the mercy of the moderator's own particular viewpoint.

Organizational issues:

The checklist for internal moderation is brief and does not align with the external moderation report. Why is it not aligned?
The newly recruited staff do not understand the process well.

Preparatory issues:

Training or workshop to share for internal moderation
To what extent is assistance from NZQA available?

Findings from the interviews:

These issues are explained in more detail in the interviews, parts of which are included here. According to the research participants, the challenges for internal post-moderation included five factors.

Challenges of post-Moderation:

Workload and responsibilities

Sample selection and differences in approach
Combining in-class and practicum components
Late submission of assessments
Newly-appointed lecturers and their understanding.

The first issue arose from the flexibile, consumer-friendly setting of a small-scale PTE. Often the late submission of assessments by learners makes the marking late and thereby delays the process of moderation.

'I do it regularly but I don't regularly complete the process … the input is on time but the output could be delayed.'
Often students get re-submissions from the first marking. This means lecturers need to wait until the second or third submissions to get three completed and credited samples for moderation.

This process gets even more complicated when two lecturers share the teaching and marking of a unit standard.

The second issue is related to the selection of samples. Teachers shared different personal strategies to interpret and select from the categories of high, medium and low performance.

'High is obviously the high achievers and they're generally the people who put in their assignments on time. The low is – they're the obvious – is the people who are struggling, not necessarily with the content of the unit standard, but it's the English. So the medium is just finding someone in between these two.'
'Usually the high and low students are fairly easy because they're very obvious; and medium is usually where most of the students are, so then I just try and vary the students. I am aware of being careful, maybe not to always choose the same high person….try and vary it a little bit'.

'Their answers are put together well, the information is comprehensive and it's just a joy to read; and you just know that these are the kind of students that you want to represent your teaching. The other ones, I get a student that does fairly well. I try and get students who have had no resubmits because by the time you're getting into resubmits its getting messy and they haven't really grasped the point, so I nearly always get ones with no resubmit. Then I select one that….maybe just over the kind of threshold of being acceptable, but perhaps hasn't put a lot of work in or maybe their English.'

They have also mentioned selection by convenience because of a limited choice.

'Because not all the students submit their work on the due date. So then you actually need to select from the bulk that you have.'

'Right now I have only three students (in my class), and I think there is no choice.'

Having unit standards with theoretical and practicum components was another challenge for the National Certificate. As the visiting lecturers may vary and the students do these at a different time, it gets difficult to ensure all practicum tasks are post-moderated alongside the classroom components.

Time spent on moderation was another important challenge mentioned by the interviewees. There are a number of actions for moderation that take the lecturer's time.

'...deciding who you're going to moderate, the photocopying, getting them to the other teacher....so mainly it's time.'

For newly0-recruited lecturers, the content and the marking can also be a challenge in the internal moderation process. The assessment booklets given to them are new to them. The time available for moderation is not enough to research the contents separately.

Lecturers described different ways to overcome the challenges to resolve the problems they face.

Teachers' own strategies to manage late submissions and shared teaching of a unit standard included reminding students of the due dates in class, being patient and remembering to keep copies of moderation after checking, marking at home, liaising with the relevant teachers and keeping a log on the computer.

The challenge of selecting student samples is resolved through personal interpretation as discussed before.

The organization now requires teachers to keep copies of students' practicum booklets regardless of whether his/her theoretical work is selected for moderation or not. This has resolved the difficulty of accessing and combining theory and practicum components.

'I think we have excellent procedures in place.'

However, some suggested that there could be other ways to do it.

'I would suggest that the practical and theory component can be marked together. This is when I like the students to still reflect on theory components, when they have completed the practicum component. That's what I am thinking of. It would be fine to combine the two and then mark together so that the students would reflect well on the same unit standard.'

'I think possibly, exemplars of practicum practice, could be included within the teaching. I think it might make it easier for them to make the transition from the classroom to the centre.'

The implementation of this suggestion would be complicated, as the whole procedure would then be delayed even more. However, the ECE department in the selected PTE is still refining the process to give the best result.

'What we do is; essentially we don't actually internally moderate the practicum task. We probably should. We internally moderate the class taught, part of it. The practicum tasks, the teacher who visits the student and who marks the practicum book, photocopies all the practicum tasks and puts them in a filing cabinet - either in a Prac 1 or a Prac 2 sleeve. When it comes time to get the assessment books ready for external moderation then we chase up the practicum tasks to add to them, otherwise they just stay in that drawer.'

Acceptance of the moderation as it 'needs to be accepted' is the usual answer to describe how the challenges related to time and workload are resolved. Lecturers more or less agreed that they accept this 'extra' work by managing their workload.
'Just have to be prepared to stay longer after classes to get them in.'

'...there is not really much you can do about it. It just has to be done.'

'Well, the extra work - I just make a space and I just do it patiently and just accept it takes a long time.'

A few lecturers mentioned doing the moderation as part of the teaching process, whereas others didn't see the value of moderation. Contradictory responses were received from the lecturers in the same organization:

'You just manage it. You just have to do it. It does add to our workload and nobody enjoys it; and nobody feels good about it because you don't get any extra money for doing it.'
'I'm the teacher - I'm the first one that is interested to see the result of my teaching and marking, so I consider it as part of my teaching.'

Some participants saw the moderation process as part of their job, as they gained experience within the organization.

'I gradually became aware that it's part of my job; I just fit it in really.'
'It always has been part of my responsibility, not after long I started with them'

These newly-recruited teachers, who raised the issue of moderating other lecturers' marking without a thorough comprehension of the process or the content, admitted having comparatively more careful attitudes towards the process of internal moderation.

Challenges in pre-moderation were more with time and experience.

'…more time would be needed; experience would be needed. I think, only teachers who had actually taught many times… and for a while these unit standards and they have done practicum visits as well. So combining the theory and practicum can actually be involved.'

Discussion:
NZQA publishes an upgraded manual every year to assist the TEOs with effective moderation, for example, The National External Moderation Manual for Tertiary Education Organisations, 2011 TEO Manual. It explains the process and requirements for national external moderation of unit and achievement standards managed by the NZQA (NZQA, 2011 c). The study conducted here reiterated those requirements. The researcher suggests a model that would provide guidance for effective moderation, in line with the findings of this research (Fig. 1).

Figure 1:
A model for effective moderation

Who	Lecturers & assessors	TEOs	NZQA
How	Social moderation involving staff meeting	Identifying responsibility at staff orientation stage	Ongoing inter-active process to assist external moderation
	Elements to consider from NZQA Prescription: Version Level Specical note or explanatory note Outcomes Evidence Requirement (ER) and Range	Allocation of time to staff to upgrade to the later versions	Availability of more exemplars
	Individual strategies for regularity	Development of annual internal moderation plan	Glossary of terms
Why	Value of moderation: Quality education and meaningful teaching-learning-assessing		

Note. Model developed by the researcher rationalized from the research findings

The 2011 TEO manual (NZQA, 2011 c) includes a list of people for whom the guide will be useful. This includes chief executive officers, heads of departments, academic or quality managers, internal moderators, moderation liaisons, teachers/tutors and assessors. The model (see figure 1) has identified three stakeholders where lecturers and assesors are the people direcly related to the learners' learning and assessments. They often also work as internal moderators as in the seleceted PTE. The term TEOs may stand for people who are in management positions in the organisation, such as chief executive officers, heads of departments, and academic or quality managers. At the selected PTE, the moderation liason person is the principal and director who also comes under the TEOs. In the model, NZQA stands for the external moderators and the material developers who are staff of NZQA and are involved in developing documents such as the TEO manual for external moderation.

The middle section of the model includes strategies that might be useful for effective moderation. Social moderation or discussing things by arranging moderation meetings with all or a majority of the staff members is a helpful strategy for effective moderation. The respondents in the survey conducted by NZQA (NZQA, 2010: 29-31) also identified 'a collaborative approach' and 'regular *tahi*[18] meetings' as an important factor that positively impacts on the quality of moderation within the organisation. Another important 'how' strategy for lecturers when designing or changing assessment tasks is to consider every part of the NZQA prescriptions, not only the learning outcomes. Furthermore, the staff assigned as moderators need to find individual ways to track the required moderation activities effectively. TEOs need to help staff by providing detailed training and clarification at the orientation stage where they are introduced to the annual internal moderation plan. NZQA can provide a glossary of terms where all words are clearly explained. For example, the level descriptor states that learners at level 6 will apply a range of standard and non-standard processes. These words or phrases 'standard process' and 'non-standard process' can be interpreted in many ways. The glossary could include definitions and examples of the terms used in level descriptors, the TEO manual, the NZQA website or Unit Standard prescriptions. Another useful strategy would be for NZQA to provide more exemplars and for TEO staff to have the opportunity to participate in face-to-face discussions. The empty sub-rows in the middle row of the previous table imply that many other strategies could be included, depending on the context of the moderation.

The more significant insight from this research is given in the bottom row of the model. Often the processes and strategies get a lot of attention and the underlying value is forgotten. Moderation is all about whether the learners are being assessesed correctly and fairly. The whole process runs around another process: 'assessment'. The term 'assessment' comes from the Latin verb 'Assidere' , which means 'to sit aside' (Chapman & King, 2005). This meaning is significant in terms of the purpose of assessment. It emphasizes the situation where the learner takes a solitary position to prove that the teaching-learning activities were effective for him or her to achieve certain competencies. The teachers/lecturers check how successful the learners were in their attempts. If this checking by the teachers is being checked again, which is moderation; it is important to remember that the whole process is designed not only to maintain equality and fairness, but also to improve the quality of teaching-learning. The purpose of moderation should uphold the value of quality education and meaningful learning. It also needs to be shared. However, it is often ignored by all three stakeholders identified in this research: lecturers, TEOs and NZQA.

Lecturers would do better to see the process of moderation as a useful tool that helps to reflect on their own teaching practices. It should not be perceived as a frightening event that identifies their flaws, rather it should be understood as a positive criticism of their teaching practices for future development. This approach to moderation would be useful to maintain regularity in moderation alongside the huge workload of teaching and marking. A study in Australia shows that the teachers' assessment practices, their attitudes and beliefs towards assessment impact on the way they perceive moderation (Connolly, Klenwoski & Wyatt-Smith, 2011). The study also acknowledges the values of

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[18] Working as one, according to Maori custom

moderation, that it supports teacher judgments, achieves fair and dependable judgments and it is responsive to a wide range of evidence types and assessment contexts. The assessment contexts need to be dynamic. The values of quality and improvement, above and beyond compliance, need to be acknowledged by the teachers so that they perceive moderation as a means to develop their teaching and assessment practice.

TEOs need to be more specific in identifying the responsibilities surrounding moderation activities. This research reveals that often the moderation responsibilities are not clearly identified; so it is always put aside 'to do later'. People dealing with moderation need to know whether it is part of their teaching or administration responsibilities or a distinctive category of responsibility added to their workload. The TEOs could identify this in their Quality Management System (QMS). NZQA suggests any moderation system be established as part of the quality managemnt system (NZQA, 1992). Thus moderation responsibilities should be analyzed in detail on the basis of the following questions:

- Who will make the moderation policies?
- How will this be done?
- Who will implement these policies?
- How will this be done?
- Who will evaluate policies and implementation?
- How will this be done?
- What are the likely costs of setting up and operating a moderation system?
- Who will pay for this?
- How will resource effectiveness be achieved? (NZQA. 1992)

As one type of TEO, the same is to be applied to the PTEs. A private training establishment (PTE) is defined in the Education Act 1989 as 'an establishment, other than a public tertiary education institution, that provides post-school education or vocational training' (Statistics New Zealand, 2006). The New Zealand Association of Private Education Providers (NZAPEP) has 360 members (NZAPEP, 2011). It is the researcher's own understanding that these PTEs follow neo-liberal policy that supports the marketization of education. To make the system cost-effective, PTEs may engage newly-recruited staff, who then find that moderation responsibilities have been quietly added to their workload. The study shows that moderation responsibilities, either paid or unpaid, need to be identified clearly and at the beginning of the teacher's employment (except for those institutes who recruit people for moderation only). If moderation is not paid for, TEOs could take the approach that internal moderation is a professional development opportunity.

The New Zealand Qualifications Authority (NZQA) is responsible for the quality assurance of non-university tertiary training providers. NZQA is the body that conducts external moderation for qualifications in New Zealand. All quality assured qualifications are set into the New Zealand Qualifications Framework (NZQF) designed by NZQA. 'Bringing coherence to New Zealand qualifications' and 'introducing a fair system which measures achievement against clearly stated standards' were among the purposes stated prior to the establishmnt of this framework (NZQA, 1993: 2). NZQA should place the value of quality education above compliance issues in their actions, strategies and guidelines concerning moderation. A survey report published in November 2010 (NZQA 2010:27) states that moderation must be seen as a positive learning experience rather than an audit-type process. NZQA needs to work to establish this approach. In one of the papers at the Conference for the 21st century, the credit-based system was explained during a discussion of the APL (Assessment of Prior Learning) (Slowey, 1992). It says, the credit system includes three elements which are independent of each other – a quantitative measure, a qualitative dimension and a performance indicator. The quantitative dimension measures the amount of **credit**. The qualitative one measures the **level** of the learning. The performance indicator defines an individual in this system as 'competent' or 'not competent.' NZQA needs to show a value-laden approach to moderation as part of

the contribution towards the individuals' learning and their achievement of competencies involving both quantity and quality.

To conclude, the ideological and behavioural levels of the process 'moderation' should mutually reinforce each other. If a shared understanding is achieved, it would be clear that although TEOs and NZQA have different functions, both are involved in the moderation process with the same purpose, which is to ensure quality education and meaningful learning for all learners.

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3. How can an SME and a large firm collaborate successfully?

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Abstract

Research has shown that most alliances (60%-70%) are terminated without achieving the desired goal within four years. This paper considers a strategy of 'collaborative innovation' for product development between different sized firms. A case study is presented as an exemplar of successful collaborative innovation between a New Zealand SME and a large multinational. The case study is novel as it considers the perspectives of the executive team of the R&D department in the multinational and the owner-managers of the SME. Five major themes emerged as contributors to the collaborative success: relationship, need & opportunity, fit, champion, and learning. Unlike other studies, geographical distance had a negative effect and shaped the strategic approach of the New Zealand managers. Both firms also had different views of the type and intensity of collaboration and innovation, respectively.

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Current understanding

Collaborative Innovation
"Innovation co-operation involves active participation in joint innovation projects with other organisations… pure contracting out of work, where there is no active collaboration, is not regarded as co-operation." (OECD, 2005, p.79).

Co-operation and collaboration can be used interchangeably and are synonymous with open innovation, as explained in the Oslo Manual (OECD, 2005). Open innovation, though a recent term (Chesbrough, 2003), is an old idea evident from at least the late 1800s, when private consulting firms assisted companies to innovate (Narayanan and O'Connor, 2010). The organisation was also,

> …viewed as an open system characterized by continual interaction with the environment and the necessity of perhaps having to change its structure to adapt to the environment. (Zaltman, Duncan, and Holbek, 1973 p.128).

The importance of understanding external links to innovation was highlighted in recent special journal issues (Colombo, Laursen, Magnusson, and Rossi-Lamastra, 2012; Gassmann, 2006; Mendibil, Bititci, Smith, and Wang, 2013), where pages were devoted to discussion of open innovation, including barriers and SMEs' external links. In the editorial, Gassmann (2006) commented that internal R&D is "out-dated". Open innovation was reported to be positively correlated with organisational innovation as early as the 1960's (Rogers, 1962). Furthermore, Enkel, Gassmann, and Chesbrough (2009) noted that when firms engage in collaborative innovation in a particular industry, those firms that do not employ the same strategy would lose their competitiveness.

The literature suggests different motives for collaboration: tech complexity, high cost, and market uncertainty (Tether, 2002; Paananen and Kleinknecht, 2010). Firms predominantly collaborated with suppliers (41%) and customers (48%) and both had a positive impact on innovation output (Belderbos, Carree, and Lokshin 2004; Paananen and Kleinknecht, 2010). Furthermore, Laursen and Salter (2006) found that collaborative ties were likely to emerge when developing novel innovation.

However, there are also challenges with managing collaborative ties in general and there's a call for further research to be undertaken to fully understand the risks, intricacies, and issues of collaborative innovation (Ahuja, 2000; Colombo et al., 2012; Hillebrand & Biemans, 2004; Faems, Van Looy and Debackere, 2005; Pisano and Verganti, 2008). Research has shown that most alliances (60%-70%) are terminated without achieving the desired goal within four years (Draulans, deMan and Volberda, 2003; Faems et al., 2005). A study into the most common risks when employing an open innovation strategy showed 48% of firms risked loss of knowledge and higher coordination costs and, internally, 43% of firms experienced difficulties finding the right partner (Enkel et al., 2009). Enkel et al. (2009) were careful in advising firms to apply an open innovation strategy as too much openness could lead to "loss of control and core competencies" (p.312). They advised a firm to balance both open and closed innovation strategies. This is because the open innovation process is still unclear,

> Although the era of open innovation has begun for many firms, we still lack a clear understanding of the mechanisms, inside and outside of the organization, when and how to fully profit from the concept (Enkel et al., 2009, p.312).

Mendibili et al. (2013) advised firms to be cautious when entering collaborative relationships, as they can be resource intensive and recommended a systems approach when considering collaborative innovation. Birkinshaw, Bouquet, and Barsoux (2011) suggest that firms not engage blindly in collaborative innovation but select the best approach to the relationship. In their case study, strong IP protection was used to help prevent intellectual property disputes (Birkinshaw, et al., 2011). Also the time and effort involved in creating and maintaining an external network should not be approached lightly (Birkinshaw, et al., 2011).

It is evident that there is a consensus amongst researchers in the innovation field: collaboration is a vital strategy where "the new leaders in innovation will be those who can understand how to design collaboration networks and how to tap their potential" (Pisano and Verganti, 2008, p.85). It is also evident that firms should be implementing this strategy with care as they need to evaluate the advantages and disadvantages, exercise a qualitative approach, and manage ties in an effective manner in order for the benefits to outweigh the losses (Pisano and Verganti, 2008; Enkel et al., 2009; Dahlander and Gann, 2010; Birkinshaw, et al., 2011).

Different sized firm collaboration
Collaboration for innovation purposes between firms has gained interest in the field of innovation research (von Hippel, 1976; Biemans, 1991; Chesbrough, 2003; Fagerberg, 2005; Gassmann, 2006; Laursen and Salter, 2006; Vujovic and Ulhøi, 2008; Gassmann, Enkel, and Chesbrough, 2010; Narayanan and O'Connor, 2010; West and Bogers, 2010). Research has also shown that such paths to innovation are particularly important for firms of different sizes as they can complement each other's capabilities (Rothwell and Dodgson, 1991; Smith, Dickson and Smith, 1991; Storey, 1994; OECD, 2004; Christensen, 2006; Hughes, 2009; Bianchi, Campodall'Orto, Frattini and Vercesi, 2010; Gassmann et al., 2010).

In the 1990s a core competency perspective guided large corporations but this made way to more open innovation in the 2000s, as Christensen (2006) explained,

"This means that small firms often develop new agendas for technology-based business opportunities for large firms, and in order to explore and exploit these opportunities, large innovative firms must put greater emphasis on the dynamic/adaptive, open/extrovert and systems integration sides of their competencies than what is traditionally associated with the core competency perspective." (p.35-36)

Indeed, the strengths of small firms lie in their ability to be flexible and respond quickly to market change; it has been shown that smaller USA firms produce 14 times more patents than their larger counterparts (Wessner, 2005). In turn, large firms are able to access financial resources and skilled manpower. These different capabilities can complement each other and, hence, the literature suggests that small firms and large firms bridge this gap by R&D collaboration (Gassmann et al., 2010). This strategy may be especially important for small firms, as Fagerberg (2005) noted, "This [learning from interacting with external sources] is of particular importance for smaller firms, which have to compensate for small internal resources by being good at interacting with the outside world" (p.11). More recent studies have also shown that SMEs can overcome their lack of resources by opening up their innovation process (Gassmann et al., 2010). Colombo et al. (2012) specifically consider SMEs and the complexity of networked innovation and links to innovation performance. They also acknowledged the different networking patterns SMEs and large firms possess. For instance, SMEs can use their relationships as leverage to grow their ties (Colombo et al., 2012).

Other recent studies on collaboration have been conducted to explain the formation of a collaborative relationship amongst firms with different status (determined by demonstration of quality and market relationships) rather than size (Castellucci and Ertug, 2010). Castellucci and Ertug (2010) found that higher status firms could increase performance by collaborating with lower status firms. The increase in benefits for higher status firms were directly connected to their level of status advantage over lower status firms. The theory underlining this was that lower status firms were willing to work hard in exchange for status. Therefore, the lower the status of a firm in comparison to their collaborative partner, the more they were willing to accommodate and so create value for the higher status firms (Castellucci and Ertug, 2010).

However, the reality is that not many corporations have successfully benefited from open innovation practices, or as Rufat-Latre, Muller, and Jones (2010) explain, there is a gap "between the promise and reality of open innovation in most organisations." (p. 23). However, this gap may exist because there is no real effort to implement an open innovation strategy fully in the organisation as mind-sets change and open innovation is rarely adopted widely and on an on-going basis (Rufat-Latre et al., 2010). However, they call for firms to focus on a competence-based strategy before turning to open innovation to ignite growth. Only through understanding what their companies can offer to the market can managers build on these competencies through open innovation without changing the firm's core strengths. Pisano and Verganti (2008) specifically raised the challenges of open models of collaboration and advised firms not only to weigh the pros and cons but also to consider how they can generate value from a specific collaborative option. Finally, they concluded that before embarking on a collaborative innovation strategy, managers need to fully grasp the firm's strategy and the problems to solve. Furthermore, managers need to evaluate what their firm brings to the collaborative process in order to exploit the rewards (Pisano and Verganti, 2008).

It is also evident that smaller firms do not engage in open innovation as much as larger firms (Gassmann et al., 2010). This may be because SMEs lack the resources to manage this strategy effectively, especially with IP management. While collaborative innovation can help SMEs to compensate for their lack of resources, Gassmann et al. (2010) noted two main reasons that large firms seek international alliances: one was to be closer to their target market and lead users; and the second was to tap into the best talent available worldwide. Furthermore, collaboration is a vital strategy to gain a competitive advantage as,

"The new leaders in innovation will be those who can understand how to design collaboration networks and how to tap their potential" (Pisano and Verganti, 2008, p.85).

Given these factors, this research was undertaken to address the research question: what are the factors that lead to a successful small firm – large firm collaboration for product innovation?

Research Design

Exploratory case study design
The recent innovation literature is rife with appeals for more qualitative research, especially in the field of collaborative innovation as there is a need to have a better understanding of this phenomenon (Enkel et al., 2009; Dahlander and Gann, 2010; West and Bogers, 2010; Bunduchi, 2013). There is also a limited understanding of how this strategy is employed in collaborations between different-sized firms but is essential to meet challenges inherent in these types of relationships (Rothwell and Dodgson, 1991; Christensen, 2006; Bianchi et al., 2010).

An interpretivist paradigm was embraced and an exploratory approach was employed in the form of a case study methodology involving two firms in a collaborative relationship for new product development (NPD). Data was collected using semi-structured, in-depth interviews with managers from both firms. The perspectives of both firms in this collaboration were explored to gain insight into the dynamics of their relationship. These dynamics permit an understanding of how both firms made sense of the collaboration, and how similar or different the perspectives were. The approach to exploratory research is open to various ideas and patterns but exploratory research also attempts to assess which existing concepts can be applied to a problem. Hence, the importance of exploratory research also lies in its assessment of existing models and theories. Therefore, this case employs elements of both inductive and deductive strategies, respectively.

Sample and participants
Two firms in a collaborative relationship since 2007 for product innovation were chosen. The first was a New Zealand SME and the second was a large multinational with a subsidiary in New Zealand. The selection process for this thesis followed the rational of Eisenhardt (1989), who noted that "it makes

sense to choose cases such as extreme situations and polar types in which the process of interest is 'transparently observable'" (p.537). With that in mind there were two main considerations in selecting the companies for this research. First, to chose an exemplar of successful collaboration between firms. The firms had existing successful collaborative ties for product innovation, hence the success process of this collaboration was more likely to be observed. Second, by selecting managers who took an active part in the collaborative partnership a first-hand examination of this relationship was possible. At the SME, the two original owner-managers and a third manager (who joined the firm shortly after founding) were interviewed. While at the multinational, interviews were held with the original manager who established and oversaw the collaboration, and was still part of it at the time of interviews, as well as a second manager who joined the collaborative group 18 months after its inception. In total, five managers were interviewed. At the time of the interviews both companies had been collaborating for four years.

Face-to-face interviews were conducted with the managers from the New Zealand-based firm while phone interviews were conducted with the multinational firm's managers as they were located overseas. Interviews with each manager took place between July 2010 and October 2010 and ranged between 90 and 150 minutes each. All of the interviews had no time limit so when all elements were explored and no new information was emerging the meetings came to an end (Fontana and Frey, 1998; Bryman and Bell, 2007). Also, once all data was collected, all managers involved were given a copy of the findings with the written transcripts chosen for the case to allow for further feedback and clarifications to be made. This feedback loop enhances the validity of the case (Hartley, 2004). In addition, a secondary-data source was used such as companies' websites, annual reports, and other documentations regarding collaboration provided by the firms via e-mail.

Once data was confirmed, themes were identified through the frequent use of words and phrases, or 'thematic analysis' (Bryman and Bell, 2007). These themes were then compared to the existing literature to examine whether the findings were consistent with or different to previous work (Hartley, 2004).

Findings

Results
Five themes emerged: 'relationship', 'need & opportunity', 'fit', 'champion', and 'learning' (see Figure 1). These thematic findings were borne from the main question put forward: what makes collaboration   for   product   innovation   between   small   and   large   firm   successful?
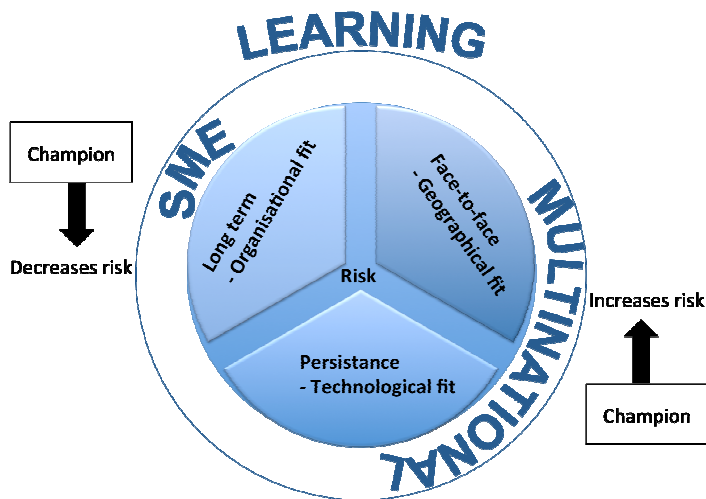
Figure 1 **The five themes and their relationships.**

Relationship

The theme 'relationship' was divided into three distinct elements: the view of a long-term relationship by both, the importance of face-to-face meetings facilitated by the multinational subsidiary in New Zealand, and the persistence the SME exhibited in this relationship helped deepening the relationship. While the multinational and the SME did not achieve commercialisation of their initial product, they strengthened their collaborative ties. This was indicated by managers from both firms expressing their wish to renew their contract, which was up for renewal shortly after the interviews. As of July 2013, both firms were still in collaborative ties. This lends itself to the long-term view of the collaboration.

The fact that the multinational had a subsidiary in New Zealand meant that face-to-face meetings were more easily facilitated. Managers from both firms said that spatial proximity had a positive effect and it was especially important during the initial stages of product development. For the multinational, having a subsidiary in NZ with their own engineers where the SME's novel technology could be tested meant that the multinational could minimise risks.

Managers from both firms addressed the notion of persistence. In this case, both firms acknowledged that the SME accommodated the multinational's requirements, pursued the multinational, and initiated meetings. This clearly showed the power imbalance between the two firms. This imbalance reflects which firm is held in higher status and the efforts of accommodating for the needs and demands of that higher-status firm. Castellucci and Ertug (2010) found that the greater the difference in status between two firms the more effort the lower status firm will put in during collaborative ties.

However, it is important to note the level of involvement in the innovation process as viewed by the participants. While the managers from both firms described each other as a "*partner*" the managers from the SME also viewed this relationship as "*developer – user*" or viewed themselves as the "*supplier*" to the multinational, and one of the managers went further to say that the collaboration was "*not a co-design*" (SME, CTO).

While the managers for the SME viewed this collaboration as more of a supplier-customer relationship, they did acknowledge the importance of market specification the multinational provided. As the Director of Engineering from the multinational firm noted,

"[Our] innovation involvement was not in the technology sense but in the standards and design".

The lack of clarity about the level of innovation each party brought to this collaboration poses an interesting question as to how collaborative innovation is defined in the literature and how a firm views it. The distinction between different types of collaboration (technological / commercial) and level of innovation participation (this was "*not a co-design*") indicates that perhaps 'collaborative innovation' should not be coupled to allow for more flexibility in the type and intensity of both collaboration and innovation respectively.

Need and Opportunity

In this case, both firms agreed that the SME had the unique technological know-how and so the multinational could not have developed this on their own. The SME provided the multinational with a technology-based opportunity otherwise not realised. This is reflected in the literature, which indicates that small firms develop new agendas for larger firms (Christensen, 2006).

Both firms were customer focused and were ready to explore market opportunities. This similarity also contributed to the notion of cultural fit discussed above and to the overall factors that sustained this collaboration. This view of the importance of the customer is a focal point for both companies, both firms wanted to explore the opportunities to exploit their capabilities,

"So it was just a process of working out 'these are the opportunities', connecting with them and working out which one was the best one to pursue" (SME, CEO).

One of the reasons the SME pursued collaboration with the multinational was that, "*they [the multinational] have existing customer relationships*" (SME, Chairperson). This helped the SME reduce time-to-market,

"So that's the reason for the collaborative relationship. So we're looking for ways to speed up the rate at which we can sell our stuff, sell our products".

However, this technology did not have immediate revenue benefits for the multinational firm but it was rather a "*future opportunity*" (Multinational, Director of Engineering). It was viable enough to discuss a further contract, as the existing contract was due to expire in 2011.

Fit

The notion of fitting with the multinational in terms of three areas – technological fit, cultural fit, and geographical fit – was conveyed in the interviews. This theme extends our understanding of the different views of collaboration and allows us to explore how the notion of fit affected product innovation.

Technological fit, or 'technological proximity' (Knoben and Oerlemans, 2006), was important to both firms. Technological proximity refers to "similarities in technological knowledge" (Knoben and Oerlemans, 2006, p.77). For the SME, technological proximity meant that they could save on resources by ensuring their collaborative partner was on the same technological path and so the SME would not need to technologically educate their partner. However, this was not the case. The SME's managers did need to demonstrate their technological know-how to members within the multinational in a way that "*made sense*" according to the Director of Engineering in the multinational. It was obvious though that the onus was on the SME to fit their technology to the multinational's processes, as the CEO of the SME described this,

 "Having big companies on board is kind of a baptism by fire."

And the Advanced R&D manager at the multinational confirms,

"We're not easy to deal with. We hear that a lot from some small companies…because we're big, old and successful, we have processes for everything… if things really don't fit in a process, it's a little harder to get things done."

Another aspect of 'fit' was expressed by the SME's CEO, as the fit at a cultural level. The SME's Chairperson, Paul, also discussed the need to find the right firm and the right people within that firm. This is synonymous with 'organisational proximity' (Knoben and Oerlemans, 2006). Organisational proximity refers to firms sharing the same worldview and values. In this case, the SME was looking for firms and managers who were risk-takers. The SME's managers noted that the risk-taker within the multinational was the Director of Engineering, and that other managers within the same organisation were risk-averse. Identifying the Director of Engineering as a risk-taker also reflected on his role as a champion for the SME (discussed below).

The last element of the theme 'fit' which was discussed by managers from both firms was the importance of locality. Though spatial proximity facilitated face-to-face meetings (Bundachi, 2013; Weterings and Boschma, 2009), spatial proximity has been found not to affect innovation and even to impede innovation (Ben Letaifa and Rabeau, 2013; Weterings and Boschma, 2009). This does not seem to be the case for the SME and the multinational as managers from both firms acknowledged the importance of face-to-face meetings, especially during the initial stages of product development. Furthermore, the SME's managers specifically targeted local partners due to lack of funds to build relationships offshore. On the other hand, the multinational had a local subsidiary in New Zealand, which meant they could test the new technology without incurring high risks.

While the notion of fit minimised risks for both firms, it was more of the SME responsibility to fit in with the multinational's complex environment, this also was a moderating factor for the risk the champion within the multinational took with the untested technology of the SME.

Champion

All managers from both firms mentioned the theme of 'champion'. The SME identified the multinational's Director of Engineering, as their champion. The Director of Engineering also referred to himself as the SME's champion. This theme was key to our understanding as to how this collaboration developed and strengthened. As the SME's Chairperson further explained the importance of a 'champion',

"It's not just about identifying companies that have a track record of being early adopters, it's about identifying champions within companies who have a track record of taking brave decisions and [being] early adopters".

The Director of Engineering from the multinational was also described by the NZ SME as a risk taker, as the SME's Chairperson explained,

"Without [the Director of Engineering] being [there], seeing the potential, being prepared to [take] the risk, being prepared to effectively place a bet on us, we wouldn't exist today".

The literature refers to champions as early adopters (Howell and Higgins, 1990; Sisaye and Birnberg, 2010). The 'innovation champion' (Sisaye and Birnberg, 2010, p.121) plays the role of the advocator in persuading others in the organization to adopt a certain innovation. The Director of Engineering from the multinational firm was that innovative champion for the SME and there was no doubt he was instrumental in this collaboration, as he explained,

"If I had to sort of frame it up, I'd say that was [being the SME's champion] probably 50% to 60% [of the SME's success]."

Learning
'Learning' was another theme that featured in the interviews. Both the multinational's managers specifically used this term. The multinational's Advanced R&D Manager, explained that,

"It's a true partnership where we have as much to learn from that partner as they have to learn from us".

The SME's managers acknowledged that the process they had to go through with the multinational to produce a product was a stepping-stone for them to establish a company. In this respect, they 'learnt' how to commercialize their technological know-how. Though the SME's managers did not explicitly use the term 'learning' to describe their product development process, the SME's CTO explained that,

"Their [the multinational] input is to let us know the exact requirements. As an engineer, that's the most important thing".

This resulted in both firms learning from one another, which resulted in the SME gaining intellectual property.

One way to facilitate learning is by users-producers interaction (Fagerberg, 2005; Weterings and Boschma, 2009; Lundvall, 2010). In this case, the multinational and the SME contributed market and design specifications and technological know-how, respectively.

Subsequently, external linkages to gain access to external knowledge were marked by focusing on learning from one another (Grabher, 2009). Lundvall (2010) noted that innovation is a process that requires two fundamental prerequisites: interactive learning and collective entrepreneurship. Lundvall (2010) made a distinction between three modes of learning: learning by doing (production), learning by using (the use of complex systems), and learning by interacting (users and producers interaction) and he noted that R&D is not always the driving force of innovation, but rather the learning by doing or using. The literature also suggests that SMEs can learn market requirements and product necessities from clients and suppliers (Nieto and Santamaría, 2010).

In this case learning enhanced innovation output and helped both firms develop technological know-how and design specifications to result in a new product development that afforded intellectual property to the SME and a unique solution to the multinational.

Contribution
This research is novel as it examines both sides of a collaborative relationship for innovation between a small and a large firm. The results highlight findings and issues raised in existing literature on collaborative innovation, such as geographical fit and complementary resources (Knoben and Oerlemans, 2006). Though the literature suggests that geographical proximity is not necessary across the whole process and that it does not affect innovation output, for the SME and the multinational in this study this prerequisite was considered essential.

The importance of close relations echoes findings in the literature (Tether, 2002). The motivation for this collaboration in the form of need and opportunity was another theme that highlighted its importance in forming such ties, as suggested in previous literature (Sisaye and Birnberg, 2010). The literature refers to the importance of champions as early adopters (Sisaye and Birnberg, 2010). This was evident and contributory in this case.

Another implication is around the notion of 'fit': for the SME geographical proximity was essential, unlike findings in the literature (Ben Letaifa and Rabeau, 2013; Weterings and Boschma, 2009). For the multinational, having a subsidiary in New Zealand with their own engineers where the SME's technology could be tested meant that the multinational could minimise risks, but whether or not this meant that they would not otherwise have collaborated with the SME was not clear. Perhaps a consideration of firm size needs to be taken into account when evaluating this element in collaborative ties

'Fit' was also organizational, though the multinational's managers did not discuss this. Perhaps there was no need to explicitly discuss this, as it was intuitive that relationships would work better if cognitive proximity existed. Or perhaps, since the multinational has resources to protect itself from opportunistic behaviour, the SME did not require the sharing of a similar worldview. The aspect of this fit perhaps needs to be examined on the basis of firm's size.

Mutual learning was another theme that has been proven to contribute to the success of this collaboration where the SME had access to market requirements and the multinational was able to use and implement the technology (Lundvall, 2010; Nieto and Santamaría, 2010).

Another issue highlighted was the different view of the level of innovation each firm brought to this collaboration; and the other was around the framing of the term collaboration. This suggests that 'collaborative innovation' might need to be examined separately as the participants in this case had distinguished between different types of collaboration and level of innovation intensity.

Practical Implications
By understanding these issues, insight may be gained into the management process and issues of collaborative innovation for product development so that future innovation managers may enjoy greater success. In particular, managers need to understand that delays are inevitable. Also, managers need to ensure they both learn from each other and that there is a need for the product. For SMEs, having a champion within the large firm management is key. On the other hand, managers from multinational firms should ensure they minimise risks before embarking on such ties and keep collaboration local, until proven. Lastly, collaboration can be transferred to other projects and divisions within the large firm to maximise profits and the SME can explore other opportunities and customers by using the credibility of their existing relationship.

Finally, this collaborative relationship shows a longer survival rate than the four-year mark indicated in the literature (Draulans, et al., 2003; Faems et al., 2005). If this is the measure of success, then this collaboration is viewed as successful. If we are to reflect on the participants' impressions and interpretation of this partnership, then this collaboration has already proved to be successful for both as the SME gained intellectual property and the multinational was able to find a solution to their existing problem. A longitudinal study into such collaboration will assist with further evaluation of the issues in the collaboration process throughout the different stages over time.

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4.   Bilbo Baggins – a very private hero

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Abstract

In Bilbo Baggins and several of his other characters, JRR Tolkien creates a particular kind of reluctant hero. This hero is modest and unassuming; not cast in the classic warrior-hero mould. His early heroic acts are unlooked for, and he undergoes change during the story, acquiring self-confidence and courage, to the point where later acts may be consciously heroic. Bilbo Baggins develops from a very reluctant adventurer into an accomplished pragmatist of considerable courage. The keystone heroic event of *The Hobbit* is neither the dragon slaying nor the triumph in battle; it is Bilbo's handing the Arkenstone to Bard. This moment of apparent treachery is in fact a genuine, selflessly heroic act.

Keywords

Hobbit, Baggins, Tolkien, hero, children's literature, fairy tale

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In his epilogue to *Secret Gardens: a Study of the Golden Age of Children's Literature*, Carpenter (1985) paints a rather bleak picture of "arguably the next outstanding children's book to appear after *The House at Pooh Corner*". He observes a "constant threat of physical violence", that the companions are "continuously in fear of their lives", and that the climax is not the much-anticipated dragon slaying, but a contest for the treasure between those who ought to have been allies. Most tellingly, he goes on to say, "the supposed hero of the book is engaged by the dwarves as a burglar rather than a hero" (p. 211). Carpenter (1985) views JRR Tolkien's first published work, *The Hobbit,* as presenting a very different kind of hero from those found hitherto in children's books.

Farmer Giles of Ham, while one of the slightest of Tolkien's stories, can be regarded as a pivotal work in terms of the chronology of his writing. Although it wasn't published until 1949, according to Shippey (2001) it was "read to an Oxford college literary society in January 1938, a month after Tolkien began *The Lord of the Rings*" (p.58). This was less than a year after the publication of *The Hobbit*. *Farmer Giles* has many typical Tolkien attributes – a giant, a dragon, love of the countryside, comfortable middle-class values, affectionate observations on the strengths and weaknesses of rural society – but most significantly, Giles typifies a particular kind of Tolkienian character; the unlikely and reluctant hero. Giles is a home-loving, hard-working farmer, and chasing away the giant is primarily an act of defence against a threat to property: "He did not feel either bold or quick … but was more anxious about his property than his skin" (Tolkien, 1990, p. 9). The news of his success spreads quickly and "by the middle of the next week … he had become the Hero of the Countryside" (p. 13). While the conflict with the giant is spontaneous, the encounters with the dragon are planned, and, no matter how reluctant he may be, Giles sets out on what can be recognised as quests of an heroic nature. With each encounter there is a progressive strengthening of his resolve and confidence, until he is actually prepared to enter the dragon's cave if need be. "Farmer Giles was backing his luck, and after two encounters was beginning to fancy that no dragon could stand up to him" (p. 62). After bringing back Chrysophylax with the treasure Giles becomes "more than the Hero of the Countryside: he was the Darling of the Land" (p. 70). Finally it is important that "Giles owed his rise in a large measure to luck, though he showed some wits in the use of it" (p. 75). Using Farmer Giles as a model, I would like to propose these qualities of Tolkien's "unlikely and reluctant heroism":

I.   the hero is modest and unassuming; not cast in the classic warrior-hero mould;
II. early heroic acts are unlooked for;
III. the hero undergoes change during the story, acquiring self-confidence and courage;
IV. later acts may be consciously heroic; and
V.   there is a significant element of luck.

There is a similar vein of heroism in Bilbo and the four principal hobbits of *The Lord of the Rings*. Bilbo by no means looks for heroic opportunity, he has one of the great moments of literary luck when he finds the ring, and he acquires self-confidence and courage through his successive challenges, with Gandalf observing at the end of the book: "My dear Bilbo! … Something is the matter with you! You are not the hobbit that you were" (Tolkien, 2002, p. 360). According to Kocher (1973), Bilbo "acquires constancy, courage, and above all a sense of moral responsibility" (p. 116). Frodo is most reluctant in his quest and Sam, Merry and Pippin are initially driven only out of loyalty and friendship, but subsequently all four jointly and severally acquire more classic, and perhaps less reluctant, heroic qualities.

This "hobbit heroism" does not appear to sit comfortably with Jung's hero myth, whose six-stage cycle is summarised by Wilmer (1987) as:

I.   miraculous humble birth
II. early superhuman power and strength
III. rapid rise to prominence
IV. triumphant struggle with the forces of evil

V. fallibility to sin, pride, and hubris
VI. fall through betrayal, heroic sacrifice and death.

There is barely a whisper of Bilbo in such a cycle. But Storr (1988) reminds us that the hero may take on varying cultural characteristics, witness his contrast between the English (Chaucerian) version, a "parfit gentil knyght", and the Greek (Homeric) version of "the man of many wiles", Odysseus. So I have room to argue that the panoply of archetypal heroes can conceivably accommodate one with a long, red beard, ruddy complexion and a jerkin with old bits of metal sewn on, or one who is short and stout with furry feet and a deep fruity laugh. Indeed I suggest that the Grimms' ubiquitous Simpleton, The Brave Little Tailor and the Two Brothers are closer to the Tolkienian hobbit hero than a Beowulf, Gawain, Siegfried or Achilles: fairy-tale heroes rather than mythic heroes.

The kind of hero I should expect to find in *The Hobbit* is a fairy-tale hero, because I submit that *The Hobbit* is a fairy tale. As I show in Appendix 1, there are many hallmarks of a fairy tale in it. In *Tree and Leaf* Tolkien (2001) himself defines a fairy-story as "a story about Fairy, that is Fäerie, the realm or state in which fairies have their being". Fairy-stories include not only dwarfs, trolls, giants, dragons but also the sun, moon, sky, birds and trees; "the definition depends on the Perilous Realm itself" (p.10). Perhaps a touch cynically, Townsend (1976) suggests that Tolkien defines a fairy-story so as to include his own tale in the definition, but when I search for Propp's 31 functions in *The Morphology of the Folktale*, as summarised by Barry (2002), I find *The Hobbit* has substantially more than most fairy tales have. In fact 19 out of 31 functions, detailed in Appendix 1, are arguably present in *The Hobbit,* with Barry (2002) citing an example of only six functions as typical, in support of his argument. This suggests that *The Hobbit* is very much a fairy tale, in the Proppian sense at least. Of course, as it is so much longer than probably any other fairy tale, Tolkien has the luxury of room to construct nuances of characterisation, including different types of heroism, which the traditional fairy tale teller may not have.

If then, according to both Propp (2002) and Tolkien (2001), *The Hobbit* is a fairy tale, it ought to have a hero. Tolkien's education and immersion in *Beowulf*, *Kalevala* and other Norse mythology informs his comfort with the warrior-hero, of Arthurian or Wagnerian scale, and much of his major work including *The Lord of the Rings* and *The Silmarillion* is absolutely heaving with such heroes: Fingolfin, Finrod, Beren, Gil-galad, Elrond, Elendil, Aragorn, Eomer, Theoden, Boromir et al. Attebery (1992) even observes of *The Lord of the Rings* that "Tolkien's heroic figures are invariably tall and bright" (p.72). These are heroes in the mythic mould. But *The Hobbit* is almost devoid of such heroism. Indeed it can be seen as largely anti-heroic. In Appendix 2 I list the principal characters, and attempt to define their heroism: Bilbo, Thorin and the dwarves, Gandalf, Elrond, the eagles, Beorn, the elves, the lake men and Bard. All these characters are on the side of good in the book's contest between good and evil, while the goblins and wolves clearly represent the evil in the story. Yet hardly any on the side of good jointly or severally perform any act that could remotely be described as heroism of the mythic type. Bilbo is the central character and it is in him that I should most expect to find heroic traits, but as Shippey (2001) says, "No one in any mediaeval epic or Norse saga could possibly behave like Bilbo" (p. 22). Ultimately it is Gandalf who defines the problem, when Thorin suggests they might enter the front gate of The Lonely Mountain: "That would be no good ... not without a mighty Warrior, even a Hero. I tried to find one; but warriors are busy ... and ... heroes are scarce ... . That is why I settled on *burglary*" (Tolkien, 2002, p. 53-54).

If I return to the five qualities of Tolkienian hobbit hero observed at the start of this essay, I find that Farmer Giles, Bilbo, Frodo, Sam, Merry and Pippin all share qualities I, II, III and V, but it is the lack of the fourth quality that sets Bilbo apart from Tolkien's subsequent heroes – his later acts are for the most part not at all "consciously heroic", except finally, as I shall argue, in the matter of the Arkenstone. Giles quite relishes the summons to deal with Chrysophylax, certainly the second time, and Frodo and his three colleagues develop into very conscious heroes – with their first overt acts of

heroism being their volunteering to join the Fellowship of the Ring at Rivendell. In contrast, Bilbo's heroism is much more private and self conscious. His prompt to adventure is more romantic than heroic: "Then something Tookish woke up inside him, and he wished to go and see the great mountains ... and wear a sword instead of a walking-stick" (Tolkien, 2002, p.45). And a few minutes later, what is effectively his first heroic act is very modest indeed: turning the door handle: "Then Mr. Baggins turned the handle and went in. The Took side had won. He suddenly felt he would go without bed and breakfast to be thought fierce" (p. 48). I suggest that with heroic achievements it is often not so much the grand moment, such as the slaying of the dragon, that needs the heroic prompt, but rather the chain of events that bring the hero to the dragon in the first place[19].

By the time Bilbo has further heroic opportunities he has already found the ring, and subsequently, in his encounters with the spiders and elves, the use of the ring rather precludes the need for heroism or bravery. Shippey (1992) suggests the ring is an equaliser, lifting Bilbo's status to that of the dwarves, but if anything it serves to diminish the "quality" of his actions, reducing them almost to conjuring tricks. Pre-ring he is barely competent: witness his ineptitude with the trolls and his clumsiness with the goblins. Post-ring he kills the spider as a means of self defence, and it's an important moment: "Somehow the killing of the giant spider, all alone by himself … made a great difference to Mr. Baggins. He felt a different person, and much fiercer and bolder" (Tolkien, 2002, p. 208). But this enhanced status is a result of the act rather than the cause of it. Subsequently, releasing the dwarves both from spiders and elves holds little risk as long as he has the ring, and even his visits to the dragon are made to some extent safe by virtue of it.

Having said that, there is no doubting Bilbo's nascent courage, and he does perform a genuinely heroic act on his way to see Smaug for the first time: "Going on from there was the bravest thing he ever did. … He fought the real battle in the tunnel alone, before he ever saw the vast danger that lay in wait" (Tolkien, 2002, p. 270). This is one of high points of dramatic tension in the book, as one might expect from a first encounter with a dragon. But Tolkien takes much of the glory away by making it a completely private moment. If Bilbo reaches an heroic level here, almost of the mythic variety, there is no one to witness it. It is a terribly British, brief and modest kind of heroism.

The Hobbit stands up well to psychological analysis. According to Storr (1988), Jung's interpretation of the slaying of the dragon by the fairy-tale hero is an expression of the emotional experience of emancipation from one's parents, especially one's mother; slaying the dragon is a rite of passage or cutting the apron strings. In Bilbo's case his mother is the formidable Belladonna Took, long dead, but as Hancock (2005) observes, still important in Bilbo's genes. The significance of this is borne out when Gandalf tells the remaining members of the Fellowship of the Ring in "The Quest of Erebor"[20] how he selected Bilbo as the 14th member: "I want a dash of the Took … I want a good foundation of the stolider sort, a Baggins perhaps". Gandalf then discovers that Bilbo has never married and surmises that deep down Bilbo wants to be free "to go when the chance came, or he had made up his courage" (Tolkien, 2002, p. 371). It is as if Bilbo has spent an extended childhood in the womb-like Bag End, surrounded by all the feminine and maternal Shire imagery Hancock (2005) cites, and it is only when Gandalf shakes him out of his bourgeois, settled existence that he finally undergoes a belated rite of passage. Jung's goal of life, according to Storr (1988), is to reach harmony and serenity within oneself, a "wholeness", and in order to achieve this, a man must "rediscover those aspects of himself which have been neglected," which requires the sacrifice of "the very function or attitude which served him well … in the early years". Bilbo's life has hitherto been just as one-sided as Jung's power-seeker or "busy, successful man of affairs" (p. 85-6), no matter how much more relaxed,

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[19] Possibly my own most heroic achievement to date is jumping out of an aeroplane at 12,000 feet some 15 years ago. There were two defining moments: obviously one was as I left the plane, but equally memorable was the moment a couple of days earlier, during a breakfast of scrambled eggs with smoked salmon, when I agreed with my peers that I would also make the jump. I was braver over breakfast than in the plane. By the time I had entered the plane, never mind jumped out, a chain of events was in force over which I had little control.
[20] Appendix A of *The Annotated Hobbit*. Of course this was written long after *The Hobbit*, according to Anderson probably in 1954 or 1955 (368), and is therefore open to the charge of being imbued with the wisdom of hindsight.

because his rite of passage was missed out and he has made a career of well-to-do hobbit respectability. Thus, aged 50, Bilbo finally finds himself suddenly expelled from the womb, "without a hat, a walking-stick or any money, … running as fast as his furry feet could carry him" (Tolkien, 2002, p. 64) on his journey to The Lonely Mountain.

Attebery (1992) also suggests that it is to Jung we should look for the kind of psychology that best reflects fantasy. Although he doesn't discuss *The Hobbit* in any depth, he certainly identifies Jungian archetypes in Gandalf (the Wise Old Man) and Frodo and his companions on "the road to selfhood" (p. 30).

Why then, when Tolkien shows himself so comfortable with the concept and tradition of the Norse warrior-hero, was he disinclined to include such a hero in *The Hobbit*, written as it was for his children? This can be largely explained by his experience of the First World War, which to a great extent knocked the stuffing out of his entire generation, and is described by Carpenter (1985) as the "fruitlessness of conventional heroism in the trenches of a real war" (p. 211). Garth (2003) quotes the critic Samuel Hynes' assessment that literature hit a crisis point in 1916: "a 'dead spot' at the centre of the war when creative energies seemed to sink to a low point among British writers" (p. 287). But to understand the specific effect of the War on Tolkien one needs to look at the background of the friends he lost during it.

King Edward's School, founded in 1552, bred the Tea Club and Barrovian Society (TCBS) which provided the nursery ground for the English mythology Tolkien was to create. At the time Tolkien was at King Edward's it was dominated by Robert Cary Gilson, the Chief Master from 1900 to 1929, charismatic and almost demagogic in proportion, prompting many accolades, recorded by Trott (1992). Cary Gilson's and the school's values and promise of high achievement and heroism were modelled, figuratively at least, within the warrior-hero tradition, and it was these hopes which were dashed to pieces in Picardy.

Garth (2003) informs that the four core members of the TCBS, Gilson, Smith, Tolkien and Wiseman, were posted on active service within a period of seven months. Of the TCBS, core and occasional, Gilson died on 1st July on the first day of the Battle of the Somme, Ralph Payton on 22nd July, Smith on 3rd December and 'Tea-Cake' Barnsley in 1917. Trott (1992) recounts that of the 1412 Old Edwardians who served in the War, 254 died, from a school that would have numbered around 500, with perhaps 70 graduating each year. Tolkien (1994) says in the foreword to *The Lord of the Rings*, "By 1918 all but one of my close friends were dead" (p. xvii).

Certainly Tolkien had experienced enough loss of friends in the War to affect him deeply, but Garth (2003) goes on to say that "The essence of TCBSianism was more than friendship … it had been granted some spark of fire … that was destined to kindle a new light, or, … rekindle an old light in the world" (p. 180). It is now clear that as a firelighter Tolkien was very successful indeed, and *The Lord of the Rings* and *The Silmarillion* are testament to his "invention" of the English mythology Carpenter (1978) refers to in his biography, with Tolkien writing of the Finnish *Kalevala*: "I would that we had more of it left – something of the same sort that belonged to the English" (p. 97); but the War had initially taken the vitality out of that spark of fire.

Kennedy (1988) describes the outbreak of the First World War as a succession of operational plans which were put into effect more or less regardless of the cause; a line of dominoes tipped over by the single, relatively small event of the assassination of Archduke Ferdinand. This was not an heroic conflict driven by a belief in good against evil, and the Christmas truces and football matches in no-man's-land testify to the lack of inherent animosity between the opposing armies. Not so with the Second World War, which one can suggest is a more heroic conflict than the First with, at least on the British fronts, a far lower dependency on soldiers as cannon fodder, and aims and objectives which are

much more transparently defensible. Indeed Churchill (1940) spells out the difference between the two wars in a speech to the House of Commons in which above all he contrasts slaughter with strategy.[21] While the enemy in 1914 simply represented differing political ambitions, in 1939 and increasingly as the Second War progressed, Hitler and all that he represented was perceived clearly as evil; not just politically distinct. The struggle against him was consequently a suitable feeding ground for heroism. It was easy to believe Churchill (1941) when he said to a joint meeting of Congress on 26th December, "The forces ranged against us are enormous. They are bitter, they are ruthless. … they will stop at nothing that violence or treachery can suggest."

Perhaps then, Tolkien has restored his faith in classic heroic values by the end of the Second World War, and there is time for *The Lord of the Rings*, in the mid-fifties, to reflect this. Certainly, it has fine warrior-heroes in the form of Aragorn, Eomer, Theoden, Boromir and Faramir; never mind the four principal hobbits who acquire pretty classic heroic characteristics by Books Three and Four. Mortimer (2005) quotes Tolkien:

"The Lord of the Rings was actually begun, as a separate thing, about 1937, and had reached the inn at Bree, before the shadow of the second war. Personally I do not think that either war … had any influence upon either the plot or the manner of its unfolding." (*Letters* 303)

Mortimer (2005) goes on to say:

> Yet he is belied by textual evidence. Even the most cursory reading reveals that the opening Book of *The Lord of the Rings* is vastly more like *The Hobbit* in language and tone than the following five Books.

Indeed, one can suggest that in Book One there is a dearth of heroism, as with *The Hobbit*, exemplified by the respective characterisations of Strider as a dark and mysterious stranger and the later Aragorn, the king in waiting, every inch a mythic-hero. Not far into Book Two other heroes start to emerge, most significantly with Gandalf's heroic self sacrifice (albeit temporary) and above all in Boromir, a perfect Jungian hero, deeply touched by hubris and hamartia.

Although the First World War was probably much the greatest influence on Tolkien's disillusionment at the time, it was not the only one. While *The Hobbit* was not published until 1937, according to White (2002) it was more or less finished in 1931, and the next major event of the period to shake the world, after the War, was the Wall Street Crash and Depression. Kennedy (1988) reports world trade had shrunk by one-third between 1928 and 1932, and Gilbert (1997) observes eight million unemployed in the US within three months of the Crash. Tolkien would have felt comfortable with capitalist values; after all his father had been a banker. But to many, the events of October 1929 and after indicated an element of divine retribution against the excesses of the twenties. It is easy to see the greed and materialism of the dwarves in this context, neatly presented in Thorin's letter under the clock: "Terms: cash on delivery, up to and not exceeding one fourteenth of total profits …" (Tolkien, 2002, p. 61) and while most of the party do in fact survive and get rich, the capitalist leader Thorin and two of his family, Fili and Kili, receive what might be interpreted as their come-uppance. Two elements of the Jungian warrior-hero myth are represented here with respect to Thorin: "fallibility to

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[21] Churchill's speech began, comparing "the first year of this second war against German aggression with its forerunner a quarter of a century ago. Although this war is in fact only a continuation of the last, very great differences in its character are apparent. In the last war millions of men fought by hurling enormous masses of steel at one another. "Men and shells" was the cry, and prodigious slaughter was the consequence. In this war nothing of this kind has yet appeared. It is a conflict of strategy, of organization, of technical apparatus, of science, mechanics and morale. The British casualties in the first 12 months of the Great War amounted to 365,000. In this war, I am thankful to say, British killed, wounded, prisoners and missing, including civilians, do not exceed 92,000, and of these a large proportion are alive as prisoners of war. Looking more widely around, one may say that throughout all Europe, for one man killed or wounded in the first year perhaps five were killed or wounded in 1914-15."

sin, pride, and hubris," and "fall through betrayal, heroic sacrifice and death." The irony is that the element of betrayal is perpetrated by the principal hero himself!

In summary therefore, *The Hobbit*, while displaying many fairy-tale qualities, is an unsatisfactory one in respect of the conventional expectations of the role of the hero. Garth (2003) comes close to synthesising the reasons in his postscript, quoting Purkiss: "The Western Front made the fairy aesthetic seem both desperately necessary and hopelessly anachronistic" (p. 292). Tolkien's assertion that "in real life escape is 'very practical, and may even be heroic'" is arguably just a rationalisation of the guilt that so many veterans of war experience; that they survived where their friends did not. Bilbo is, if nothing else, practical, and his story, his "escape", is no more or less heroic than Tolkien's.

In the matter of the Arkenstone however, there is a genuine heroic climax, although, as I should expect by now, an unconventional one. Carpenter (1985) suggests that "old-style heroism has been rejected in favour of backstairs espionage and 'diplomatic' treachery" (p. 211). But this is an over simplification. Bilbo's acquisition and disposal of the Arkenstone is not simple theft, nor indeed simple betrayal. It is considerably cluttered with the concepts of value, trade, negotiation, nostalgia, pragmatism, utilitarianism, compensation, fairness and contract. Although Bilbo himself has earlier summed it up: "I was not engaged to kill dragons, that is warrior's work, but to steal treasure" (p. 276), this is largely disingenuous. And while his acquisition of the Arkenstone is purely accidental; he almost literally stumbles on it (Tolkienian heroic characteristic V); he shows a considerable element of courage by pocketing it, in the full expectation that "trouble would yet come of it" (p. 293). It's another private and modest moment, when Bilbo is doing something that he almost instinctively feels is right, although he is keenly aware that the reactions from his peers would not bear this out.

The dwarves under the Mountain lie under siege for many days, during which time Thorin waxes lyrically on the value and importance of the Arkenstone. Bilbo has plenty of time to gather his thoughts and make a plan, all in the context of Thorin's well-documented characteristics of temper, impatience, stubbornness and greed. Therefore Bilbo's final and calculated presentation of the Arkenstone to Bard in order to broker peace, fully anticipating Thorin's awful wrath, must be seen as an extraordinarily selfless and brave act; in many ways the pivotal event of courage in the story. Here, Bilbo is consciously heroic.

The moment passes. While he exits the stage, Bilbo is congratulated by Gandalf, the Wise Old Man, who has returned to the plot apparently just in time to reassert his Jungian archetype and arguably pay respect to Bilbo's own; the hero at last. The rest of the story is largely a rapid succession of actions. Thorin's dismissal of the burglar, disavowal of Gandalf, rejection of Bard's terms and the incipient conflict between the good parties, are suddenly overtaken by the storm breaking and the Battle of the Five Armies. Thorin's passing is very much within the mythic-hero mould, but it is arguably too little and too late to be a significant heroic moment; perhaps a last hurrah of *dulce et decorum est pro patria mori*

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Appendix 1

Propp's Functions as applied to *The Hobbit*

(1) One of the members of a family absents himself from home – this refers to Thror, Thrain and Thorin when they leave the Lonely Mountain; a substantial exile. The family is Durin's line of dwarves. By virtue of the very scale of the story we might view the "hero" as composite and apply the first few functions to the "prehistory" of the story, to the dwarves' exile from the Mountain, and the later functions to the story from Bilbo's introduction. After all, the "plot" is essentially the dwarves' story, into which Bilbo is subsequently introduced.

(2) An interdiction is addressed to the hero – the death of Thror in Moria.

(3) The interdiction is violated – the war of the dwarves and goblins.

(8) The villain causes harm or injury to a member of the family / or (8a) one member of a family either lacks something or desires to have something – Smaug's taking over of the Mountain or the dwarves' loss of their treasure.

(9) Misfortune or lack is made known; the hero is approached with a request or command – Gandalf and the thirteen dwarves approach Bilbo at the unexpected party.

(10) The seeker agrees to counteraction – Bilbo accedes to their request.

(11) The hero leaves home – Bilbo et al set off.

(12) The hero is tested, interrogated, attacked etc, which prepares the way for his receiving a magical agent – the fight with the goblins, escape and Bilbo's crawling about in the dark.

(13) The hero reacts to the actions of the future donor – "Riddles in the Dark".

(14) The hero acquires the use of a magical agent – the stage when Bilbo realises that the ring has magical powers, although technically he has acquired it a few minutes earlier, before his reaction to Gollum, the unwitting donor, during Function 13.

(15) The hero is transferred, delivered, or led to the whereabouts of an object of search – the substantial train of events from Bilbo's exit from the Misty Mountains to his arrival at The Lonely Mountain.

(16) The hero and the villain join in direct combat – Bilbo engages Smaug in verbal combat.

(17) The hero is branded – Bilbo's theft of the cup and the attendant wrath of Smaug.

(18) The villain is defeated – Smaug is slain.

(19) The initial misfortune or lack is liquidated – the dwarves recover their treasure.

(20) The hero returns – Bilbo sets out again for Hobbiton.

(24) A false hero presents unfounded claims – the Sackville-Bagginses and others attend the auction at Bag End and take away many items.

(27) The hero is recognised – Bilbo returns although "it was quite a long time before Mr. Baggins was in fact admitted to be alive again" (Tolkien, 2002, p. 360).

(31) The hero is married and ascends the throne – or a bachelor version: "he remained very happy to the end of his days, and those were extraordinarily long" (p. 361).

Heroism in the characters of *The Hobbit*

- Bilbo, while of course the central character and therefore by definition a hero of sorts, for much of the story is pretty unheroic – burglary not being an heroic profession. According to Carpenter (1985) he is "no warrior of mediaeval romance, facing his foe with drawn sword. Indeed he even performs an act of treachery against his own comrades" (p. 211).
- Thorin and the dwarves, for all their graces and "at your services" are selfish and stubborn. A single-minded, focused drive for a large hoard of treasure does not lend itself to traditional heroic values, although of course there is admittedly a brief heroic snapshot when Thorin and company exit the Mountain to join the final battle. Even this is hampered when Bilbo is hit on the head and we only learn of Thorin's heroic end second hand. The authorial voice puts it clearly: "There it is: dwarves are not heroes, but calculating folk with a great idea of the value of money (Tolkien, 2002, p.268).
- I suggest the heroic qualities of Gandalf displayed in *The Lord of the Rings* cannot be projected in reverse into *The Hobbit*. O'Neill (1980) suggests the Istari combine three Jungian archetypes; Hero, Self and Wise Old Man (p. 92). But in *The Hobbit* Gandalf is more confined; at first a recruiting officer, then a ventriloquist, then only briefly a warrior (who it must be said uses a magic spell to assist his effort), and finally a diplomat, before he disappears on a political errand, to return at the end much as he began, as an agent; not a hero.
- Elrond is in *The Hobbit* little more than a cameo, and Tolkien sees no need to refer to his past heroics (whether or not they have by this time been conceived in his mythology). Elrond's prime function is as the agent who discloses the moon letters on Thror's map.
- Although the eagles are "the greatest of all birds, they were proud and strong and noble" (Tolkien, 2002, p.150), their two appearances are cast more in the mould of magical agent than hero. Brisbois (2005) says of their roles in both *The Hobbit* and *The Lord of the Rings*, "They fight in the war, and act as messengers, but are so rarely used that they seem more of a minor point or a *deus ex machina*."
- Beorn is arguably the most heroic character in the book. O'Neill (1980) suggests that he is a symbol of the Self, being a union of opposites and a developed form of the Trickster archetype (p. 114-120), and Hancock (2005) reminds us that when even the eagles have failed to turn the battle, it is Beorn who kills Bolg of the North and scatters the enemy host. She goes on to suggest that he represents a godlike self, which unites the masculinity of great violence and aggression with the femininity of loving, caring and nurturing (p. 53-54). But he is confined to one episode, apart from the reportage of the final stages of the Battle, and therefore cannot really qualify as a central hero.
- The elves, especially the king, are egotistical and portrayed as slightly silly. Tolkien writes them off almost as soon as he has introduced them; "They differed from the High Elves of the West, and were more dangerous and less wise" (Tolkien, 2002, p. 219). While one can sympathise with their self defence in Mirkwood against apparent dwarvish assault, when there is time to reflect before action, the king's motive is greed, "for he too had not forgotten the legend of the wealth of Thror" (p. 312).
- The lake men are mean-spirited and suspicious; the Master being a particularly unheroic character.
- Bard, with the supreme role of dragon slayer, is hampered as a hero by the sidelining of the dragon slaying. Like the eagles, Bard becomes a facilitator, a catalyst to the plot, and even his dragon slaying is only enabled by a thrush. But Shippey (2001) observes that he organises a collective defence of Laketown, much in the role of a twentieth century infantry officer, and that the death of Smaug is above all a crowd scene (p. 40). Tolkien is of course a modernist.

5. Bridging the gap through exploration - An innovative approach to teaching English to Japanese students from highly specialised fields at the cutting edge of technical innovation

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Abstract

15 years' experience teaching English for Specific Purposes (ESP) to Japanese engineers, researchers and scientists has taken me into some fairly obscure specialist areas at the cutting edge of Japanese technical innovation. I currently teach engineers from the second largest steel company in the world and have taught technical specialists from large, well-known companies, many of which are household names. It did not take me long to discover a serious disconnect between the extraordinarily complex ideas which my students work with on a daily basis and the world of Teaching English as a Foreign Language (TEFL), especially the classic PPP (presentation, practice, production) approach. Even the disciplines I have learnt from ESP somehow did not go deep enough. The language patterns I thought might be of value to my students often turned out to be too superficial to address their needs. The transfer stage in the lesson very often revealed that what they were trying to explain could not be neatly shoehorned into the templates I was offering. This article makes suggestions on how to explore this gap and ultimately embrace it as part of an overall strategy to ESP that involves relinquishing control, taking risks and collaborating with students involved in highly specialised technical fields.

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I've been involved in English for Specific Purposes (ESP), particularly with technically-minded students, for the last 15 years in Japan and fairly early on I began to notice a gap, or rather a yawning chasm between the English teacher's world and the world of the engineer, scientist or technical specialist. This article is an attempt to explain this gap and how I have tried to bridge it over the years.

This gap is hilariously captured in Terry Pratchett's Discworld in this exchange between Ponder Stibbons, one of the few really intelligent wizards on the Discworld and Rincewind, a wizard who seems to have absolutely no magical talent at all. In the Last Hero, Pratchett satirises Apollo moon missions. Ponder, in the Mission Control role, is trying to explain gravity to Rincewind, who has reluctantly been forced into the astronaut role:

'Strictly speaking, there won't be any down. As such. Er…you could say that you will be travelling so fast that you won't be in any one place long enough to fall down.' Ponder sought a glimmer of understanding in Rincewind's face. 'or, to put in another way, you'll be falling permanently without ever hitting the ground.'…
'Oh,' said Rincewind.
'You understand?' said Ponder.
'No. I was just hoping that if I didn't say anything, you'd stop trying to explain things to me.'
Pratchett (2001)

I don't know it you sometimes feel like Rincewind when one of your students tries to explain something very scientific or technical. If so, I might be able to help.

Dogme ELT or Teaching Unplugged
I wonder if you've been following the Dogme ELT (English Language Teaching) debate over the last decade or so. Scott Thornbury's original article *A Dogma for EFL* (Thornbury, 2000) practically throws a gauntlet down at the feet of the English as a Foreign Language (EFL) profession and asks us if we will take a Vow of EFL Chastity with a vision of a classroom where

"Teaching should be done using only the resources that teachers and students bring to the classroom - i.e. themselves - and whatever happens to be in the classroom."

He expands this in an article called *Teaching Unplugged* (Thornbury, 2001) the following year, setting out a set of rules. Rule 7,

"Topics that are generated by the students themselves must be given priority over any other input."

is probably one of the ones I follow most closely. Some of the others I frankly disagree with or would not be able to implement in practice. For instance, rule 8 "*Grading of students into different levels is disallowed…*" seems seriously misguided to me. In this article I am not advocating or defending Thornbury's approach; I just find it a very appropriate starting point for the ideas I want to present.

When I first came across Dogme ELT, it certainly resonated with some of the ideas I had stumbled across by myself, but closer reading makes me realise it's a bit radical for my tastes.

I will probably be accused by Dogme enthusiasts of reacting in one of the standard ways which have been nicely satirised by Dave Dodgson in his blog (Dodgson, 2011). He would probably identify me as being at Stage 2: Anger/Confusion, sometimes characterised by the reaction

"that's what I've been doing all along!" even when [I] clearly haven't.

But honest Dave, I have been doing this for years, though I admit with reservations if I read Thornbury's full list of rules as set out in *Teaching Unplugged* (Thornbury, 2001). I've always jokingly called what I do "post-lesson planning" in the staff room and my colleagues manage a wry chuckle. The Dogme ELT at least gives me a little more confidence in what I'm proposing here. More of that later. First, I was alerted to the possibility that what I'm suggesting here might be controversial by recent accounts of an IATEFL conference in Glasgow, Scotland, my home town. We Scots are generally a friendly people, but Stevenson's *Dr Jekyll and Mr Hyde* should give you a hint of what might lie lurking underneath the friendly and partly toothless smile (we have a sweet tooth). A blog

called *Dogme (or Wandering Naked Through the Dogme Forest...)* by James Taylor (Taylor, 2012) gives a vivid picture of a fairly heated discussion arising from a talk given by Martin Sketchley about his Master's thesis on Dogme ELT. He reports "*I felt his talk was somewhat hijacked by [the] audience*". In describing one teacher's response to the talk he says "*What could have been an opportunity for her to learn was instead a chance for her to feel that she had become confused by a heated argument.*" I can just imagine some of my countrymen lapsing back into rather broader Scots accents and allowing their inner Mr Hyde to come to the surface!

So, I will try to be diplomatic and do a bit of hedging, but it's likely that what I'm suggesting may make some people uncomfortable.

Earlier Antecedents – Peter Wilberg
What I'd like to describe here may seem reminiscent of Dogme ELT, but I would claim that my influences go back further to Peter Wilberg's excellent book One to One. I have long felt that many of his ideas are not limited to one-to-one situations, but also completely relevant to small (< 8) classes with some kind of specialised focus. Over the last 15 years I have tended to follow his core principles fairly regularly. To paraphrase Wilberg:
Formatting
I create space for the student to input the content of communication
I often allow the student to dictate content according to the things he or she needs to say
I aim to create space for authentic student input rather than mere 'language practice'
Auditing
I encourage students to listen for form, and read for form, rather than content
I train the students to develop auditing skills like: recognising, recalling and reproducing various language skills
Reformulating
I provide language that students lack and constructive feedback to help students improve the unsuccessful forms they used.

Wide Range of Subjects
I have spent countless hours listening to students and trying to decipher the difficult technical ideas they are struggling with on a daily basis. This was often done unconsciously following the minimalist approach suggested by Dogme ELT with just the whiteboard and the students' own input. In this way, I came to understand (albeit superficially) a wide range of technical problems that I never really wanted to know about! Here's a sample:
Ensuring that a detergent forms copious quantities of suds in a timely manner after being introduced into the wash
Maintaining tension without breaking long rolls of fragile paper in the manufacture of such paper products as toilet paper or nappies
Adjusting the lubricant of a gearbox to ensure smooth running at temperatures under -40°C
Reducing the volume of the characteristic squeal of brakes on trains
Predicting and controlling the exact changes in shape and volume caused by sintering a complex engine component
Using heat treatment on a complex steel product to reduce internal strain caused by the forging process
Programming a production schedule to reduce costs
Finding the exact mechanism involved in reducing corrosion in a wide range of similar alloys.
Determining the exact cause of lubricant leak from an aircraft's undercarriage and the precise contribution of the relevant O-ring.

I could go on… and on, because nearly all of the hundreds of students I've dealt with were assigned to their own unique part of the overall picture so there was precious little repetition and I generally

relished this glimpse into highly specialised technical fields. I'd like to explain how a non-specialist like myself coped with this mind-boggling range (and believe me I have gone cross-eyed on more than one occasion), and why I think this is the right approach.

Dogme-like Features
First, the Dogme-like features. I almost exclusively teach on-site at my students' place of work or at least a training area that is attached to their company. My students very rarely come into my territory. Partly because of this, they very often arrive with their minds full of their current problem, be it an upstream research puzzle or a very urgent production issue. I have found that I can help students bring their minds round to the problems of the English language best if I simply take a serious interest in their work. Their minds are full of it anyway and all I'm doing is asking them to talk about it in English. They are all aware that at some time in the future this is exactly what they may be called on to do with some foreign customer or supplier, so it's not an unrealistic task. They are also aware that you can't really talk about the importance of grain size in the crystalline microstructure of an alloy at the pub – not if you want to keep your friends – so it can be quite pleasant for them to have a captive audience, even though it's not in their own language. So, I am simply taking whatever content the students happen to bring and going with that. You can think of this as following the Dogme principle of

"*using only the resources that teachers and students bring to the classroom*",

though equally, using Wilberg's terminology, I'm formatting to create space for authentic student input.

So, far so good. The students are labouring away talking about what's on their mind anyway, and I'm giving it my best shot, scribbling notes furiously as we go and firing off questions to get clarification on the fiddly bits that I don't get the first time round.

Exploration
Secondly, the exploration. Over the years, I kept feeling the pull of the text book and the pull of the "syllabus" in the sense of a systematic set of language and communication skill areas that I ought to be teaching in some kind of ordered way. Almost every time I brought what I thought of as a "standard" lesson or course book unit, there was always an uncomfortable gap between what the lesson covered and what the students had demonstrated they needed in our long exploratory talks.

Then, after scouring through my scribbled notes trying to systematise the language points that were coming up, it gradually became clearer that there was a huge gap in terms of complexity between what they needed to say and what standard materials addressed. We all love spouting the KISS (Keep it Simple, Stupid) dogma, but I increasingly found that what was needed was Better Control of Complex Forms to handle the complex ideas they were trying to express. BCCF just doesn't have the same ring, does it?

Bridging the Gap
I realised after a few years that it really was crucial to bridge this gap between the worlds of the English teacher and the engineer/technical specialist. Imposing a rigid syllabus of key language points that seemed important from my point of view led to a rather deadened atmosphere and also meant I wasn't learning about their jobs and situations. Exploring their research and technical issues led to a somewhat chaotic and directionless course, but the students were often very deeply absorbed in the class and the atmosphere was much livelier and occasionally even electric when we all, as a team, managed to help a student to get his or her complex ideas across in a way that even the English teacher could grasp. "Post-lesson planning" started as an in-joke with my colleagues, but I generally found at the end of the course that when I pieced together the topic areas, language points and communication skills that we'd touched on, it turned out that the students had actually covered a lot of

ground and all of it was very closely relevant to them because it was so often taken from matters arising from their own input.

Ways of Exploring – Attitude
My students and I have spent many satisfying hours poring over some detailed area of their work and finding ways of clarifying technical ideas in English. A lot of what I do is pretty ad hoc and hard to pin down in a coherent fashion. I think a certain mental attitude is necessary and relevant: I am stubborn, tenacious and keen to get my hands dirty with the detail. I have a fondness for DIY and have managed some quite difficult repairs on my car and some quite complex programming and database design. So, I do have a rather technical turn of mind. However, for English teachers who may find this all a bit daunting and are rather intimidated by technical matters, I would like to try to set out some useful guidelines that might be of help.

Generating Questions
When your student starts going into the minutiae of generating enough latch torque on a voice coil motor, you may find your eyes crossing and your mind going blank, like Rincewind listening to Ponder Stibbons. This is where you have to repeat the simple mantra "confusion is my friend". This is hard for a teacher used to maintaining control of a class. This examination of the power structure operating in a class and the need to relinquish control sometimes is covered thoroughly by Peter Wilberg (Wilberg, 1987) and I encourage you to read his classic book on the one-to-one situation.

You are stepping into unknown territory and you never know if you're going to have the resources to cope. If you are one of those teachers (most of us) who feel a bit naked if you don't have plenty of material to fall back on, this will be a scary leap into what looks like a bottomless pit. Take a chance. It never gets any clearer because even if you do begin to understand latch torque, there will be another complex technical point along any minute which will confuse you yet again, so you might as well get used to it. How do we deal with the situation if (unlike me – I've come to relish the feeling of risk) you really like to have things well structured and, in particular, you like to be at least one step ahead of the students?

Vivid pictures
In *Technical Writing and Professional Communication* (Huckin and Nelson, 1991), the authors explain that good technical writing involves the creation of vivid pictures in the mind of the reader. This is a useful starting point when listening to a technical description from your student. Take notes, but while doing so, attempt to paint a picture in your mind of what the speaker is trying to say.

Ponder Stibbons in the Discworld finds to his cost that he is actually a little too good at this visualisation technique. In this scene from *The Last Hero* Leonard of Quirm, the Discworld version of Leonardo da Vinci is explaining his plans for a zero-gravity toilet:

"'I was rather thinking of problems associated with the thin air and low gravity,' said Leonard. 'That's what the survivor of the *Maria Pesto* reported. But this afternoon I feel I can come up with a privy that, happily, utilises the thinner air of altitude to achieve the effect normally associated with gravity. Gentle suction is involved.'
Ponder nodded. He had a quick mind when it came to mechanical detail, and he'd already formed a mental picture. Now a mental eraser would be useful."
Pratchett (2001)

Nevertheless, back on Roundworld, this technique can be very helpful. Unlike Ponder perhaps, you will, of course, fail miserably sometimes, but pay attention to the gaps in your picture. They are fruitful places where you can generate a question to help fill the gap. There are times when a technical explanation is so complex that you can't even begin to generate a question (biochemistry comes to mind here in my case), but if you can get any handle at all on the subject matter, this will help.

Here's an example: My research student was trying to explain his research into tool scoring. As I listened to his confusing and difficult explanation I built up a picture of scoring occurring on the product (the wrong picture). At some point he said something that didn't fit with my picture. I asked a question like "Where does the scoring occur?" and when I got the answer "on the tool", I revised my mental picture and finally started to understand what he was talking about. His research involves improving a tool used in the machining of some important component. A big issue for him is the fact that the tool quickly becomes covered in score marks which eventually make it useless and the tool finally has to be replaced at considerable cost. His job was to find a way of reducing this scoring, thus making the tool last longer.

Confusion is your friend
Here let me expand on the idea of living with confusion. Instead of feeling embarrassed or feeling you're a bit of an idiot, embrace your ignorance and confusion. Really useful questions can come from your own honest confusion. Practise becoming more aware of exactly what confused you or exactly what you don't know after listening to your student. You are not the expert here – the speaker is. A bit of healthy humility really does help.

Mind the Gap
Listen really hard and try to catch the ideas surrounding a gap in your understanding. You can then try to fill in that gap with a question or prompt.
Here are a couple of examples:

[*garbled*] liquids are a new type of solvent. Your question could be "What kinds of liquids are a new type of solvent?"
"If this alloy is [*garbled*] by in-line QT, the capacity of off-line heat-treatment would increase." Your question could be "You talked about what happens to this alloy with in-line QT. Could you explain that again? I couldn't understand what happened."

Draw a tree
A good presentation should have a key message supported by several key points which in turn are supported by a bunch of details. Obviously, if your student has just arrived in class and you're quizzing them on the latest issue they're having to deal with, they are unlikely to produce a coherent, polished presentation. However, you should be gradually helping them to reach the point where their explanations have some structure involving a key point with supporting details. That's a hierarchy and can be represented by an upside down tree with the root at the top. Draw a tree as the explanation progresses and generate a question from the parts of the tree that you couldn't fill in or understand clearly. Or generate questions to clarify the connections between the key message and the supporting details.

Scanner
Encourage your students to get up and use the whiteboard to draw diagrams, charts and plans. During a lull in the proceedings, scan a graph, say, from left to right, top to bottom, or whatever, and ask yourself if you honestly understand:

- the meaning of the legend (crosses, circles, dashed lines, dotted lines etc)
- the labels on the axes (temperature, pressure, moles, magnetic flux, heaven knows what)

- the units. e.g. a hysteresis curve showing the performance of a magnet is basically incomprehensible for a non-specialist like me, but you can at least ask "On the x-axis, what's the unit?" and the student can answer something like "Henry" or "Tesla" and you can nod your head and *pretend* that you understood, like the Wizards on Discworld listening to Ponder using fancy modern jargon:
"'It is now,' said Ponder Stibbons, 'T minus twelve hours.' *His audience [of older Wizards], sitting on the deck, watched him with alert and polite incomprehension.* Pratchett, T (2001)
- the region that is most significant in the graph. e.g. there may be a linear relationship between x and y but only within certain limits – and that might be the most significant region.
- the relationship, if any, between the variable on the x-axis and the variable on the y-axis.

In the case of a diagram of part of a machine, say, ask yourself if you fully grasp:

- what each part is called and what it does
- how the parts are connected together
- exactly where your student's difficulties lie, what causes them and what effects they have
- how this diagram fits into the overall machine, process, experiment, test procedure etc

Use the gaps in your knowledge to ask searching questions. I have found that my students appreciate the interest and if you do it carefully enough you genuinely do start to understand their work to some extent. Some years after starting this approach, I finally started noticing connections, so now when I am teaching a class of technical salesmen responsible for selling the products that my other students design, I can refer to some of the technical detail behind the products. It makes it easier for the technical salesmen to explain the kinds of complaints and problems they might encounter with their customers and it makes it easier to turn these insights into little case studies or roleplays for more realistic practice.

Further ways of generating questions and exploring your students' work

Language-based ideas
"Could you repeat that please". It is perfectly legitimate to notice that the graph your student has just drawn on the whiteboard is incomprehensible. All you need to do is say "Could you please explain the graph again. I couldn't understand it." Then ask a question like "What does the x-axis show?" etc. (cf Scanner) or "I couldn't follow what you said about stage 2 of the process. Could you explain that again?

"Could you clarify this please". You can simply ask questions like "What does X mean?" "Can you define Y more clearly?" "What exactly do you mean by Z?" or questions about the meaning of abbreviations. "What does XYZ stand for?"
Information questions: *How big…? How many…? How fast…?* etc. Sometimes you can think of an information question starting with "How". You might not really know what you're talking about, but you can sometimes ask a sufficiently intelligent question to give your student some practice. e.g. "How many times did you do this test?" "How difficult is it to measure this phenomenon?"

Why questions: Remember these are often the hardest questions of all, but sometimes in a technical context they give students good practice, especially in explaining cause and effect.

e.g. In a graph that shows a sudden clear jump or drop (e.g. a titration curve) you can ask "Why does the pH suddenly drop there?" Again, don't feel duty-bound to actually understand the answer! My students definitely appreciate my efforts but are quite sympathetic when I finally have to throw in the towel because the subject has really gone over my head. This works perhaps because they know I don't give up easily.

Hard-headed Questions – Practical Application

Application. "Where can we use this new device?" "How can we apply this research?" "What is the potential application of this research? "Could this research help to save lives in the medical field?" "Could this research really help to reduce global warming/ decrease pollution/ clean up the rivers etc?"

Comparison: "What are the advantages of using X over other alternatives?" (e.g. research involving catalysts sometimes centres on finding a more cost-effective alternative to an existing expensive catalyst.)

Cost. "Will this new process help us to reduce costs?" "How much more will this new component cost?"

Provocative, Challenging Questions

(Not really recommended, but this might spark off your own ideas – you might need to have at least half an idea of what you're talking about here and perhaps a rather good rapport with your class)

Wouldn't it have been better to use silver? It provides better conductivity than copper.

What would you do differently if you got the chance to do this research again?

Why did you choose to work with rabbits? Why not monkeys? Surely they're closer to humans.

Surely it would have been better to just use Excel for the data analysis. I've heard that Statistics software can't be trusted.

Speculative Questions

(helps to challenge a more advanced student)

Thinking in terms of "What if…?" scenarios and practising conditional sentences and modal auxiliary verbs etc:

What would have happened if you had chosen a different catalyst/ lower pH/ higher temperature etc?

What do you think might have caused the deformation of the bubble in these conditions?

Analogies – Getting the Right Balance

Finally, what happens with the textbook, pre-set syllabus or other materials that you feel duty-bound to cover? Martin Sketchley's conclusion seems to have been that the most effective way to teach is:

"a balanced approach between teaching unplugged and more traditional, possibly course book based activities" *(reported in Taylor, J 2012).*

I'd like to try an analogy on you that I feel captures the balance I'm looking for. I'm sure you're tired of hearing analogies for teaching or learning English. You know the kind of thing: learning English is like learning a musical instrument, or teaching English is like building a house. Nevertheless, bear with me. You may not have heard the Osteopath analogy. I have a bit of a bad back so I often have occasion to visit my local Judo Therapist (a traditional form of therapy strikingly similar to Osteopathy but originating in the Judo world). He softens me up with massage and some kind of electrical heat treatment, then when the time is ripe he uses manipulation to get those wonderful clicks from the various joints and vertebrae that are causing the trouble. This exploratory approach that I'm recommending feels very much like that softening up process. When the students and I are good and ready I find it much easier to attempt some input of detailed language points or perhaps practice with a difficult pattern drill. The exploratory phase seems to be a very effective way of getting students ready for a challenge. In one class recently I actually noticed them adjusting their posture as if bracing themselves for the next tough exercise in the course book. So, in my experience this exploratory approach and this conscious effort to bridge the gap have a very marked effect on student motivation to tackle the more formal parts of the course.

So this is the other side of the gap. The long exploration helps to bring the students at least halfway across the bridge to the English teacher's world of vocabulary, grammar etc.

Final Word

I suppose I'm talking about getting comfortable with risk. It is a risky business going into a class and depending on your students to provide the content, but I subscribe to Judi Dench's approach to performance, as she explained during an interview with Michael Parkinson:

"I read recently that Richard Eyre said it's to do with free-falling and that's exactly what it is. I didn't realise - it's real fright. It's being pushed out of the plane… I like to feel real fear. The more you [prepare for a script/role], the more is expected of you and the more frightened you get. And the fear, like any emotion you feel, is what generates you." Dench, J. 2002

[This interview is still available on YouTube at http://www.youtube.com/watch?v=MSqxNS3HRBw].

This seems to be one of the factors that brings that special magic to her performance. So, I do take a bit of a risk, but I've become so used to it and, to be honest, my students always have so much on their minds which they're willing to talk about, that it no longer seems like chaos. It just seems like the normal routine. I do, as I mentioned, take copious notes, so there is plenty to fall back on if the student dries up. And, yes, I always have a textbook or spare material to fall back on so I'm not really remaining chaste in Thornbury's terms.

Why not give it a try?

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6. Correlation between IELTS and the ICL Proficiency Test

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Abstract
To find the relationship between IELTS bands and ICL Proficiency Test scores, two tests and seven IELTS mock tests were designed and developed by experienced teachers at ICL Business School. Data from these were collected over two years and analyzed for correlation between IELTS and the Proficiency Test (PT). IELTS band scores and PT scores were found to be moderately to strongly correlated with a positive and linear relationship (p-value less than 1%). It was found that IELTS band 5.5 is equivalent to a PT score of 70% and IELTS band 6.0 is equivalent to a PT score of 80%.

Keywords
Correlation, IELTS, Proficiency Test

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James Fleming is an IELTS and ESL teacher with an Honours Degree in Russian (minor in Linguistics) and a Masters in Professional Studies in Language Teaching (1st class honours) from The University of Auckland, where one of the core papers was testing and test validation. He has been involved in test construction at ICL since 2009, compiling, validating and analysing internal placement tests. His research interests include, test validation and reliability, statistical analyses of working tests, and also the selection and presentation of collocations in EAP classrooms.

Introduction

In the past some students used to take the ICL Business School English language proficiency test to meet the entry criteria for academic courses. Data collected and analyzed over five years showed a moderate to strong, positive and linear relationship between IELTS bands and ICL Proficiency Test scores. But, with IELTS 6 becoming the principal entry criteria for academic courses, following the December 2012 rule changes to NZDipBus, ICL Business School felt the need to continue with its own placement test as it has been developed over many years of experience and academic excellence.

ICL Education Group consists of ICL Business School (formerly ACG Business School), Auckland English Academy and New Horizon College, Napier. ICL was incorporated in 2002 and offers a range of tertiary business, computing, TESOL and early childhood education programmes. The diplomas and certificates range from level 4 to 7 on the NZ Qualifications Framework. ICL Business School incorporates International College of Linguistics. The School has mostly international students, from around 20 different countries, with SAC (government) funding for domestic ECE students. In 2010 ICL acquired Auckland English Academy, established in 1988 and one of the leading English language schools in New Zealand. In December 2012 ICL acquired New Horizon College, also established in 1988. In 2012 the group aggregated over 700 EFTS (equivalent full-time students).

Methodology

Proficiency test scores and IELTS mock test scores were collected for many students over the past two years. A scatter diagram was drawn and the correlation coefficient was calculated for various combinations of tests and also for overall data. One sided t-tests (for H_0: $\rho = 0$ & H_A: $\rho > 0$) were conducted on correlation coefficients and p-values were calculated.

Formulae used:
Correlation coefficient,

$$r = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2} \sqrt{\sum (y - \bar{y})^2}}$$, where x = Proficiency test score and y = IELTS band.

Test statistic,

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$, where n is the sample size.

p = lowest α for which $t > t_{n-2}$, where α is level of significance.

Findings

The following are the findings of the analysis of the data collected in the years 2012 & 2013. Please check the appendix for some statistical calculations.

Overall data
Below is a scatter diagram for all of the data. It shows that the correlation coefficient (r) for IELTS vs Proficiency test scores is 0.68 and the p-value is nearly zero. This shows that there is a moderate positive linear relationship between the two scores.

IELTS vs Placement Test

y = 0.050x + 2.133
R^2 = 0.459
R = 0.6775
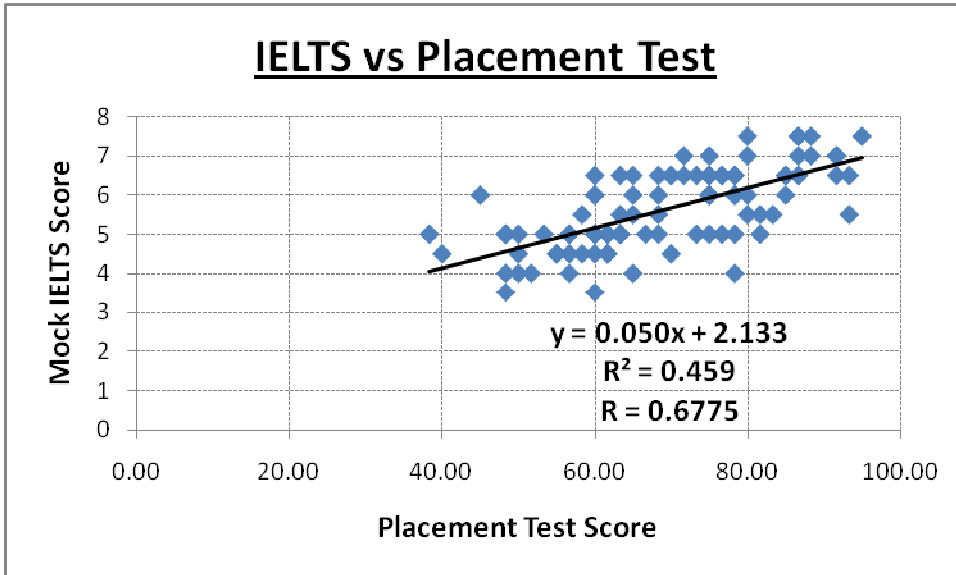
Stratified data

Proficiency Tests
Scatter diagrams below show the relationship between IELTS and two proficiency tests, A and B. For Proficiency Test A, the correlation coefficient (r) for IELTS vs proficiency test scores is 0.73 whereas for Proficiency Test B, r = 0.65 and the p-value is nearly zero in both cases. This shows that there is a moderate positive linear relationship between the two scores.

IELTS vs Placement Test A

y = 0.046x + 2.555
R^2 = 0.536
R = 0.7321
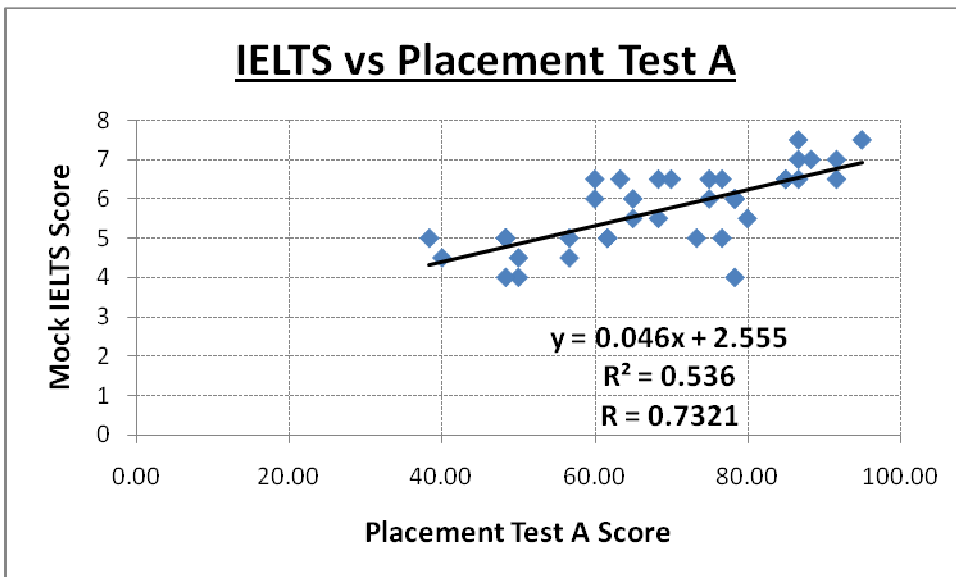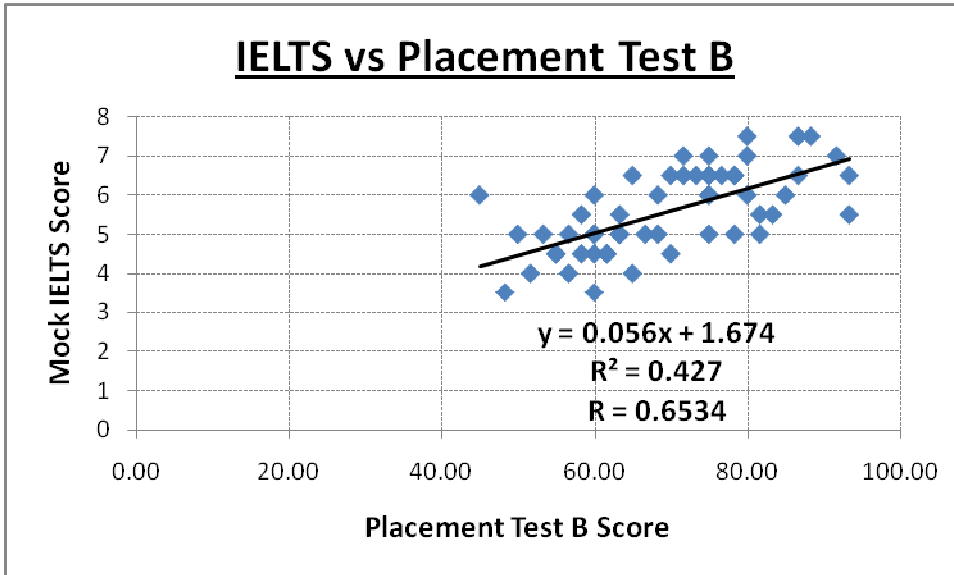
IELTS Tests
Scatter diagrams below show the relationship between seven types of IELTS tests and the Proficiency Test.

Correlation coefficients (r) for seven types of IELTS vs Proficiency Test scores are:

IELTS No.	1	2	3	4	5	6
r	0.62	0.79	0.65	0.74	0.81	0.81

Note: Only two students took IELTS-7 test. So the data were insufficient for this IELTS test.

In all cases, p-values are very low (below 0.3%). This shows that there is a moderate to strong positive linear relationship between the two scores.
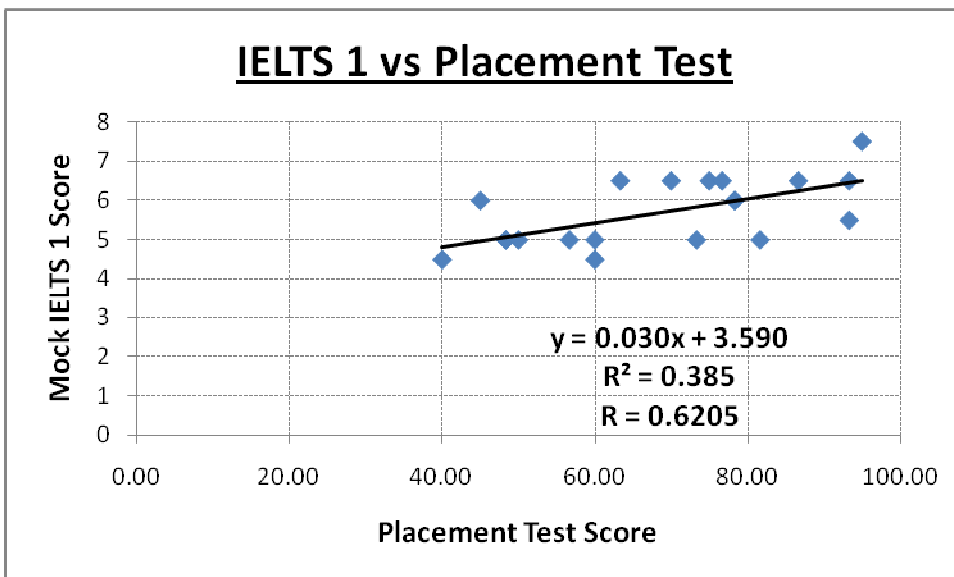
IELTS 2 vs Placement Test

y = 0.075x + 0.339
$R^2 = 0.628$
R = 0.7925
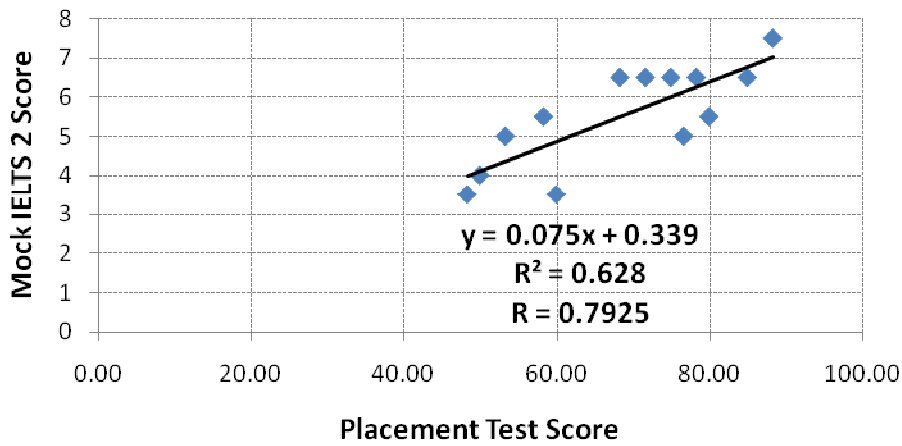
IELTS 3 vs Placement Test

y = 0.05x + 2.336
$R^2 = 0.426$
R = 0.6527
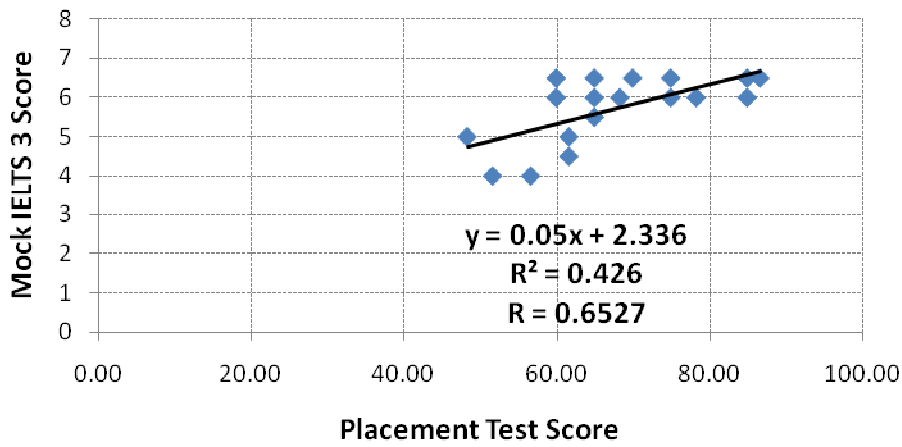
IELTS 4 vs Placement Test

y = 0.082x - 0.382
$R^2 = 0.542$
R = 0.7362

IELTS 5 vs Placement Test

y = 0.058x + 1.601
R² = 0.662
R = 0.8136

IELTS 6 vs Placement Test

y = 0.055x + 1.821
R² = 0.660
R = 0.8124
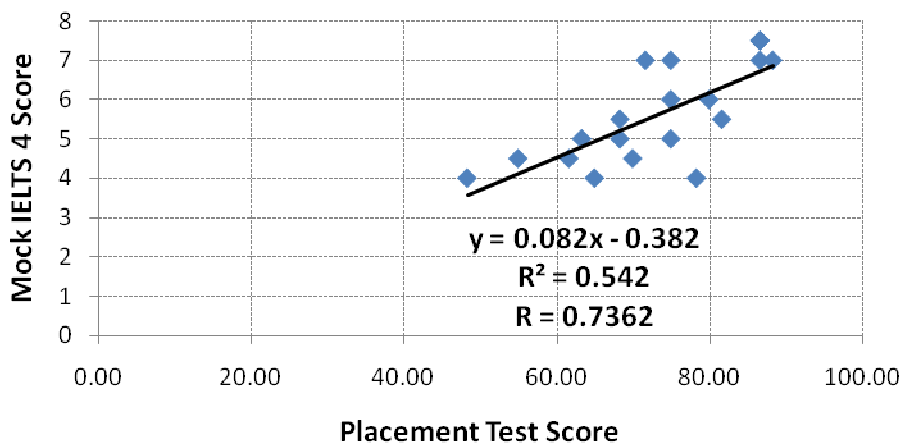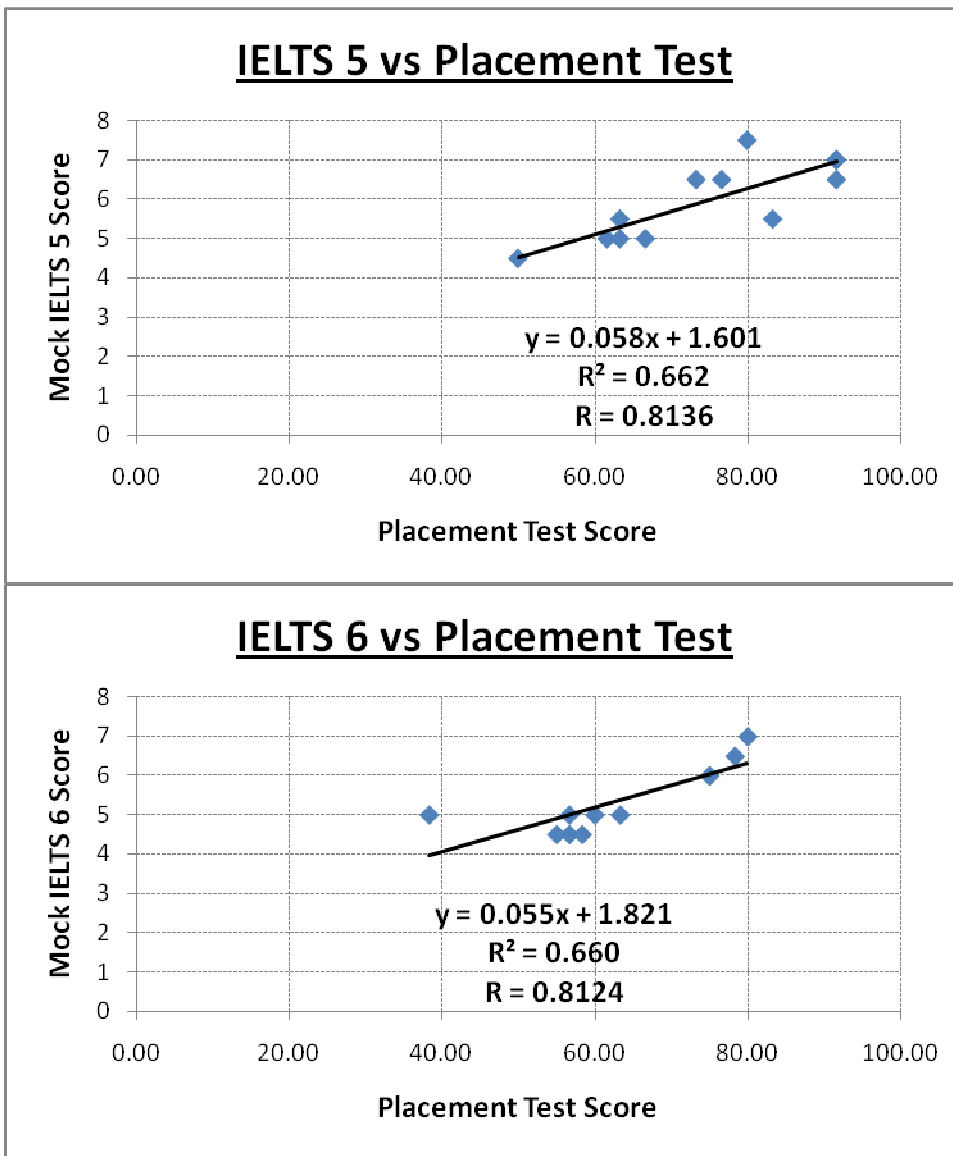
Combinations of IELTS & PT

For 10 combinations (out of 14 in total) of IELTS and proficiency tests, the correlation coefficient (r) for IELTS vs Proficiency Test scores varied between 0.65 and 0.93 (with p-values from nearly zero to below 5%). Only IELTS test 1 vs Proficiency Test B showed weak correlation (r = 0.40). This again shows that there is a moderate positive linear relationship between the two scores.

There were insufficient data for the following combinations of IELTS & PTs:

IELTS No.	6	7	7
Proficiency Test	A	B	B

IELTS test within two weeks of PT

When IELTS was conducted within two weeks of the Proficiency Test, the correlation coefficient (r) for IELTS vs Proficiency Test scores is 0.72 and the p-value is below 0.2%. This again shows that there is a moderate positive linear relationship between the two scores.

Scatter diagram given below shows this relationship between IELTS and Proficiency Test:

IELTS vs Placement Test

$y = 0.057x + 1.419$
$R^2 = 0.520$
$R = 0.7211$
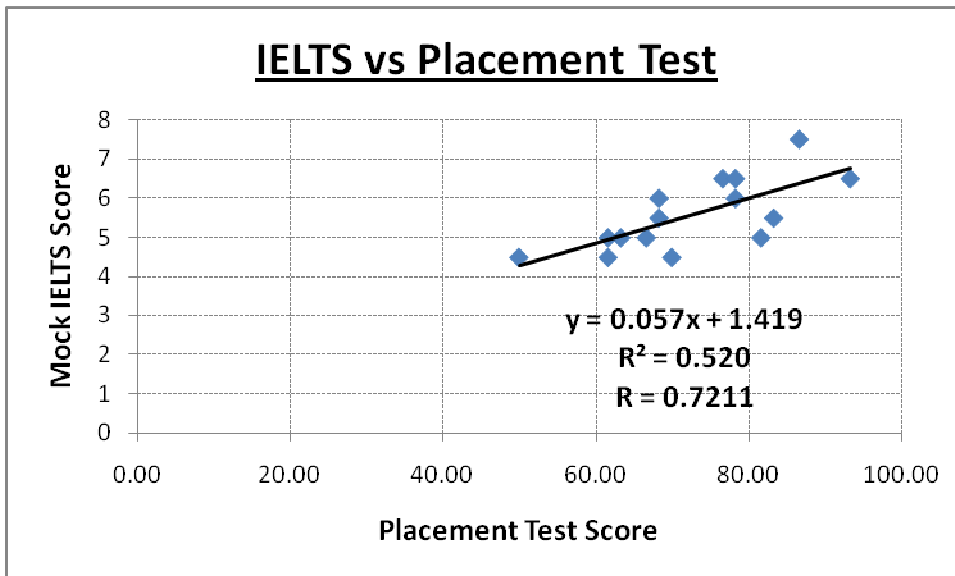
Recommendations

It is recommended that the Proficiency Test be used instead of IELTS wherever applicable, because the relation between the two is moderately strong, positive and linear with a very high level of confidence (more than 99%).

Make use of one of the following linear models to estimate equivalent IELTS band when the PT score is known:

IELTS = 0.05 * PT + 2.133 (Overall data)

or

IELTS = 0.05 * PT + 2 (Overall data – approximate model)

or

IELTS = 0.057 * PT + 1.419 (IELTS conducted within two weeks of a PT – more reliable)

IELTS band 5.5 is equivalent to PT score of 70%.
IELTS band 6.0 is equivalent to PT score of 80%.

Collect data and find the relationship between IELTS & PT scores to check the effectiveness of the model and also whenever tests are required to be changed.

Change the model to reflect the change in relationship.

Recalculate equivalent scores as the model evolves.

Conclusion

Proficiency tests, if properly designed and developed by experienced teachers (with the use of effective quality assurance systems/processes), can be used in the absence of IELTS tests.

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Appendix - Statistical calculations
Overall data
The regression line which fits the data is
IELTS = 0.05 * PT + 2.133

If we put IELTS = 5.5 in the above equation, we get
5.5 = 0.05 * PT + 2.133,
or PT = 67.34

If we put IELTS = 6 in the above equation, we get
6 = 0.05 * PT + 2.133,
or PT = 77.34

Now, if we consider the approximate model,
IELTS = 0.05 * PT + 2,
we get PT = 70 if IELTS = 5.5 and PT = 80 if IELTS = 6

For the above regression line, r = 0.6775 and n = 95.

Test statistic, $t = \dfrac{r\sqrt{n-2}}{\sqrt{1-r^2}} = 0.6775 \times \sqrt{\dfrac{95-2}{1-(0.6775)^2}} = 8.8829.$

p = lowest α for which t > $t_{n-2} \approx 2.36 \times 10^{-14}$. Hence we accept H_A: $\rho > 0$.
This shows that there is enough evidence that there is a positive linear relationship in the population between IELTS band and Proficiency Test score.

Stratified data - IELTS test within two weeks of PT

The regression line which fits the data is
IELTS = 0.057 * PT + 1.419

If we put IELTS = 5.5 in the above equation, we get
5.5 = 0.057 * PT + 1.419,
or PT = 71.60

If we put IELTS = 6 in the above equation, we get
6 = 0.057 * PT + 1.419,
or PT = 80.37

For the above regression line, r = 0.7211 and n = 15.

Test statistic, $t = \dfrac{r\sqrt{n-2}}{\sqrt{1-r^2}} = 0.7211 \times \sqrt{\dfrac{15-2}{1-(0.7211)^2}} = 3.7528.$

p = lowest α for which t > $t_{n-2} \approx 0.0012$. Hence we accept H_A: $\rho > 0$.

This shows that there is enough evidence that there is a positive linear relationship in the population between the IELTS band and Proficiency Test score.

7. Public transport in Auckland: examining the initiatives taken by Auckland Regional Transport Authority during the Rugby World Cup 2011 and future

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Abstract

This research examines the initiatives taken by the Auckland Regional Transport Authority (ARTA) in delivering sustainable modes of transportation during the Rugby World Cup 2011. To understand the initiatives and the motives of ARTA in the Auckland games and events for the Rugby World Cup 2011, Auckland Regional Transport Director Bruce Barnard was interviewed. Secondary data was collected through ARTA's website and publications. Initially the research was designed to focus only on the Rugby World Cup 2011, but in the interview process it was found that the initiatives taken by ARTA are not just targeted for the Rugby World Cup 2011 but also had future implications. Thus, the discussions and the recommendations in this study are not restricted only to the Rugby World Cup 2011.

This paper will start by providing background information on ARTA, followed by the theoretical framework that is used in the study. The study will then provide the findings. The findings are analysed in relation to the theoretical framework in the discussion section followed by recommendations. The research then provides conclusions with its research limitations.

This research was completed before the Rugby World Cup.

Saurav Satyal (PgDipMgmt, BBus) is a lecturer in Business and IT at ICL Business School. He completed his academic degrees at Auckland University of Technology, where he was also awarded a research scholarship. His research interest lies in the area of sustainability and environmental management. His past published conference papers investigated ways to create sustainable cities and how tri-sector partnerships can be created and managed towards effective stakeholder management. He is currently working towards being MCSE certified from Microsoft in business intelligence.

Introduction

This research examines the initiatives taken by the Auckland Regional Transport Authority (ARTA) in delivering sustainable modes of transportation. Most of the initiatives discussed in the research were implemented during the Rugby World Cup 2011. To understand the initiatives and the motives, Auckland Transport Director Bruce Barnard was interviewed. Secondary data was collected through ARTA's website and publications. Initially the case study was designed to focus only on the Rugby World Cup 2011, but in the interview process it was found that the initiatives taken by ARTA are not just targeted for the Rugby World Cup 2011 but it also had future implications. Thus, the discussions and the recommendations in the case study are not restricted only to the Rugby World Cup 2011.

This case study will start by providing background information on ARTA, followed by the theoretical framework that is used in the case study. The theoretical framework was used to direct the interview process. After the theoretical framework, the case study will provide the findings. The findings are analysed in relation to the theoretical framework in the discussion section followed by recommendations. The case study then concludes with the summary of the case study and its limitations.

About ARTA

ARTA was established by the government in 2004 (Auckland Regional Transport Authority, 2005). The key role of ARTA is to plan land transport throughout Auckland region within ARTA and other transport agencies. ARTA is a council controlled organisation where the board of directors are appointed by the Auckland Regional Council (Auckland Regional Transport Authority, 2005), now Auckland Council. Under ARTA's land transport strategy sustainability, safety and affordability are top priority (Auckland Regional Transport Authority, 2006).

Theoretical Framework

In transport literature, to assess the quality of transport the concept of amenity and severance is used (Handy, 2003). Amenity refers to how a place is perceived and experienced by people. Factors like the quality of the place, its smell and its appearance affect amenity. To increase amenity the design of the place as well as convenient and comfort factors should be well thought-out. Amenity of a transport system also increases when the vehicle as well as road design provides a good experience for its users. Severance occurs when a transport system separates people or places rather than connecting them. It occurs when the old facilities are removed for a new transport project. Severance also occurs when trying to create a direct transport system regions become isolated. It occurs when the transportation system affects people and communities by creating borders to define the community, creating barriers that divide the community and by creating an environment that hinders community interaction (Handy, 2003). Amenity and severance both affect the travel experience and thus the choices that people make.

Policies also have a direct effect on amenity and severance. The role of policies is also very important in delivering sustainable transportation (Hayashi and Morisugi, 2000). Transportation system policies with a focus on sustainability should assess the cost to the environment, social cost, amenity and severance in their cost benefit analysis.

To understand the choices that people make and how policies are shaped, the concept "path dependence" is important. Path dependence is concerned with the allocation problem where a small chain of events determine the selection of one alternative over others (Mahoney, 2000). In terms of transportation projects – the choice of projects and its attractiveness are determined by the anticipated frequency of use. But, due to the historical choices of one form of technology it often sets the future

direction. Examining path dependence further, there are three categories of path dependencies; technological path dependence, institutional path dependence and discursive path dependence. Technology path dependence occurs when the policies are locked in one dominant technology. Institutional path dependence occurs when the structure and institutions determine the direction of policies and discursive path dependence concerns network of ideas and people who hold and shape the policies.

If we analyse the use of roads and private vehicles from the behavioural perspective, the reasons broadly fall under comfort, flexibility and emotions (Steg and Tertoolen, 1999). In the process of deciding the choice of vehicles or the route, individuals do not account for environmental consequences of their choice. The decisions are purely based on economics, comfort, flexibility and emotions. Also, people doubt that their contribution makes a difference. People have also created their lives around private vehicles and policies are also locked in this technology. When societies are dependent so much on one form of technology only a drastic change will influence people's behaviours. Private vehicles also have intrinsic values attached to them. Private vehicles are often seen as status symbols, have potential to impress, catering to the feelings of self-worth and enjoyment from driving (Steg and Vlek, 1996). Marketing is a very powerful force that reinforces the use of private vehicles by taking advantages of these intrinsic values. The choice of private vehicles over public transport also shows the "triad of very western values: speed, individualism and privatisation" (Kaufmann, 2000). But, the use of both public transport and cars does cause stress and boredom (Gatersleben and Uzell, 2007). Car users are stressed because of the traffic jams which lead to the feeling of losing control over the situation and users of public transport get stressed because of boredom.

Findings

The aim of ARTA in this Rugby World Cup 2011 is to provide a positive experience for the visitors. People often perceive New Zealand as 100% pure and green and this has set some high expectations. Bruce Barnard (personal communication, 28th May, 2010) acknowledges that ARTA has high expectation to fulfil. Bruce Barnard (personal communication, 28th May, 2010) also says, this is the right time to promote public transport to local people. Through this Rugby World Cup; ARTA wants to show Auckland's transport system is not as bad as often perceived (Bruce Barnard, personal communication, 28th May, 2010). ARTA says there is been a lack of visualisation of the initiatives taken by New Zealand and it often seems minimal (Bruce Barnard, personal communication, 28th May, 2010).

The ARTA aim in the Rugby World Cup 2011 is not only to provide good sustainable transportation system but to also push local people towards public transport (Bruce Barnard, personal communication, 28th May, 2010). The dominant form of public transport that is being used is the bus. ARTA intends to provide a good transportation system for visitors and encourage local people to use public transport during and after the Rugby World Cup. Bruce Barnard (personal communication, 28th May, 2010) says ARTA also considered using bio fuels for buses but they encountered various problems. The major problem was the existing contracts with the fuel suppliers and also there were some unsuccessful trials of bio fuels. But, there are polices in place to ensure that the new fleet operated in Auckland meets the minimum environmental standards (Bruce Barnard, personal communication, 28th May, 2010).

ARTA is also pushing the use of cycles in the Rugby World Cup 2011 and there are places in Eden Park to park cycles which will remain after the Rugby World Cup. But, research has shown that people do not like to cycle late at night (Bruce Barnard, personal communication, 28th May, 2010) and the unpredictable weather of Auckland is another concern. Also, another issue is that the roads in Auckland are not cycle friendly. But there are various information groups that help to recommend the best routes to cycle.

ARTA also asserts the importance of culture change in regards to public transport among local people. Auckland does not have the culture of using public transport (Bruce Barnard, personal communication, 28th May, 2010).

> If we go to Britomart and watch the people coming out of the train, most of them are blue collar workers. CEOs and General Managers do not come out of the trains. (Bruce Barnard, personal communication, 28th May, 2010).

Thus, ARTA is trying to create a culture where public transport use is not just limited to certain socio-economic groups. In the Rugby World Cup 2011 various initiatives have been taken to encourage local people of different backgrounds to use public transport. To achieve this ARTA is marketing the culture of support and friendliness; however current marketing campaigns are not enough due to the lack of funds (Bruce Barnard, personal communication, 28th May, 2010). To target people who are not using public transport ARTA is encouraging them through drive-time radio. Other forms of advertising are done on newspapers and the internet. Also, for the purpose of encouraging the use of public transport several trains and stations have been upgraded.

The aim of the marketing campaigns is not just to market the culture of using public transport but also to convey the message that public transport is more efficient. Buses have priority bus lanes so travel is much faster. Trains will start at Britomart and only stop at Grafton before reaching Kingsland. These initiatives will encourage local people to use the public transport and experience how efficient the transport is and it is not as bad as often perceived (Bruce Barnard, personal communication, 28th May, 2010).

ARTA claims there are some topographical reasons that compromise the quality of public transport in Auckland (Bruce Barnard, personal communication, 28th May, 2010). Auckland city has a lot of bays so having transport lines directly connecting the city is difficult. Often the transport lines have to go round the bays, which increases the commuting time and costs.

To measure the effectiveness of the initiatives, ARTA will monitor visuals captured on street cameras and has employed observers in various place who will report back on the observations (Bruce Barnard, personal communication, 28th May, 2010).

Discussion
ARTA has taken initiatives to push as many visitors and local people towards public transport. To increase amenity, the vehicles, bus stops and train stations have been upgraded. These upgrades will make the experience more enjoyable. Also, communicating the fact that the buses will use priority lanes and minimum train stops will certainly decrease the commuting time and stress on public transport users. As ARTA is also marketing the culture of support and friendliness, this will help to increase amenity even more. The initiatives taken by ARTA are not only targeted towards providing good connectivity but also human activity. Such initiatives will foster human interaction which makes the journey enjoyable. The increase in value of connectivity and minimum stops will also reduce severance.

However, an artificial environment does less to increase amenity than the natural environment. Posters, traffic lights, railway lines, tunnels, graffiti, signboards do very little to make a journey enjoyable compared to the natural environment (Ulrich, Simons, Losito, Fiorito, Miles and Zelson, 1991). Thus, ARTA should try to incorporate natural environment at the bus stops, train stations and the journey route. Planting more trees around bus stops and train stations, and having native plants on the vehicles will help to increase amenity. Amenity will also increase if the vehicles reflect the local

culture. ARTA should also plant slow-growing trees at the track after carefully analysing the railroad landscape. If all the upgrades have a common theme (natural environment and local culture) it will increase amenity. If soothing music is played on the vehicles, it will help the passengers to relax. All the aesthetic factors in the journey should reflect local culture which will make the journey interesting and informative for the visitors.

All these initiatives in regards to increasing amenity will have less effect if the passengers have to wait. "Transit patrons hate to wait and dislike transferring more", (Iseki and Taylor, 2009). Iseki and Taylor's (2009) framework of transport penalties which incorporates the users value of time in evaluating transport is beneficial to increase amenity. ARTA should not only focus on upgrading the physical infrastructure but also the quality of service. The major factors that influence transfer penalties are delays and unreliability of services, safety and security issues, user friendliness and familiarity of transport systems and availability of doing productive activities while waiting. Thus, to encourage people to use public transport ARTA should have frequent, reliable services. Besides the amenity factors described above also safety and security should be present. Graffiti, low quality of lighting, dark spaces, rubbish all help generate negative perceptions and should be avoided. Also if the waiting time is long, some form of entertainment should be presented for people to enjoy.

The aim of ARTA in the Rugby World Cup 2011 was also to encourage local people to use public transport. So, in the long term ARTA should increase amenity by making the journey more scenic. Also when embarking on a new project the concept of "context sensitive design" developed by the US Department of Transport is useful. Context sensitive design advocates that projects should be collaborative in nature and should involve all the stakeholders to develop a transport facility which is safe while protecting the environment, history and blending with the aesthetics of that particular place (US Department of Transportation, 2006).

Policies also play a big role in changing people's behaviour. Policies that set minimum environmental standards for vehicles will drive change. ARTA has taken such initiatives but its policies are locked in one dominant technology. Only a rapid development in technology will make ARTA more flexible. However, waiting for technological advances and focusing strategies around technology is not the best option. Technology innovation has led to an adverse increase in volume of use (Steg and Tertoolen, 1999). Also, historical choices have impacted ARTA adversely especially in terms of how the city and roads were planned. ARTA is doing its best and the people who hold and shape ideas are genuinely concerned about the environment. ARTA believes only a drastic change in the mind-set of people will make Auckland greener. However, despite knowing there is a big need for culture shift, there are no initiatives taken by ARTA that directly targets people's behaviour. Informing people about the advantages through drive-time radio, internet and posters is not very effective to change old habits.

The use of cars can be made less attractive by either pull measures or push measures (Steg and Tertoolen, 1999). Push measures tend to make the car use less attractive while the pull measures seek voluntary participation. Normally push strategies stimulated by pull measures is more effective. ARTA should take on additional strategies to make cars less attractive in the Rugby World Cup 2011 and after. Pull strategies involving special benefits to users of public transport will motivate people. Further additional discounts for using public transport will make cars less attractive.

Also, ARTA should exploit the concept of cognitive dissonance to encourage people to use public transport. Cognitive dissonance is an unpleasant situation where attitudes and behaviours are inconsistent (Steg and Tertoolen, 1999). People are generally concerned about the environment and know the adverse effect of car use but factors like comfort, flexibility and status symbols overshadows their attitude towards the environment. Giving special treatment to users of public transport and by creating a buzz about sustainability will make the commuters of private vehicles feel guilty. The idea here is not to reward people who use private vehicles. Isolating the users of private vehicles, setting them apart from the group, will make them feel they are going against the norm. This will help to

change their commuting habits rather than their attitudes towards the environment when faced with a similar situation in the future.

Another strategy recommended by the behaviour scientists to restrict car use is to individualise social dilemmas (Steg and Tertoolen, 1999). Marketing campaigns that are aimed to raise awareness are not very effective because an individual's sense of responsibility towards them is not strong. "[A] plea for commitment can be successful only if there are strong personal norms in favour of target behaviour" (Matthies, Klockner and Preibner, 2006). If we target social dilemmas to a more personal level it will be more effective because people will see a cause and effect relationship that poses them threats. Thus, the marketing initiatives taken by ARTA should communicate the advantages of taking public transport over cars at a personal level. Also, as mentioned above, some form of incentive for using public transport should be made clear. Target marketing is also more effective than having a generic marketing strategy.

The assumption that past behaviour or a direct habit influences future travel choices is also not valid. An experiment has proven that the choices people make in choosing the mode of transport is rational and it can be modified (Bamberg, Rolle and Weber, 2003). A routine behaviour when exposed to new information by a new decision context and an intervention can change the cognitive foundation of the intention which changes the behaviour (Bamberg, Rolle and Weber, 2003). The thought in this approach is when individuals are facing a changing decision context they are more attentive and motivated to process new information. If convincing actions are taken in this stage the behaviour has high probability of changing. Thus, to increase the number of public transport users ARTA should target those individuals who are dealing with changing decision contexts. Communicating with high school students in their last year who are entering into work or universities is a good segment. Another segment that can be targeted is individuals who are entering retirement.

ARTA should also focus more on campaigns designed to engage people rather than just relying on advertisements. Personalised journey planning techniques enable individuals to be more aware of their travel options and reduce the use of cars where possible (UK Department of Transport, 2002). The concept here is to have a bottom-up behaviour change rather than a regulatory top-down approach (Rose and Ampt, 2001). In New Zealand the Maxx website has a personal journey planner tool in it, but the users of the tool are people who already have an intention to use public transport. Making tools and calculators available on the internet does not help is changing habitual behaviours. The best known travel behaviour change programs are Indimark and Travel Blending (Rose and Ampt, 2001).

Indimark is a direct engagement with people to influence them to change their behaviour. In the Indimark approach, first people are surveyed in the target area and grouped in categories of not interested in changing, interested in changing and already using environmentally friendly transport systems. People who are not interested in changing are generally not pursued further. The consultants then visit those interested in changing group and give advice to them. This includes in giving information, a personalised travel journey planner and sometimes even free tickets to motivate them. People who are already using environmentally-friendly modes of transport are also rewarded for their current behaviour. The main aim of Indimark is to close the gap between public perception of public transport and the reality (Brog and Schadler, 1998). This method helps in knowing the problems that people deal with everyday life in terms of public transport and facilitates them by providing information on how to use public transport in a smart manner. This method is not targeted to inform people about climate change and the impact of emissions but to give practical cost-effective solutions to everyday transportation problem.

Travel blending is a method which involves in-depth analysis of people's travel behaviours followed by detailed suggestions, follow up and monitoring (Rose and Ampt, 2001). The idea here is not to completely restrict people from using cars but to encourage them to mix different forms of

transportation than relying only on private vehicles. The methods used in travel blending are thinking about activities in advance, blending different modes, blending activities and finally blending over time (Rose and Ampt, 2001). People are encouraged to plan so that sustainable choices can be made about who should do the activity and where. People are encouraged to blend different transport modes in their lives which also involve walking and cycling. Blending activities involves doing as many activities as possible in a single journey and blending over time involves making regular small sustainable choices in their daily lives.

In the travel blending method people complete a seven day travel diary. This allows thorough understanding of the travel habit of a particular individual. Once the travel diary has been studied, detailed suggestions on how the individual can reduce the use of their private vehicles are given. This commonly includes a personalised journey planner. After a month individuals are again presented with another seven day diary to fill. This is done to measure the progress and to give more constructive feedback. Also a numerical data comparison of the individual's old habits and the new choices is provided. This is done to motivate people by showing them the difference they are making through small changes in their lives. At the last stage individuals are provided with a log book so they can monitor their own travel patterns and make smarter transport choices. Thus, this strategy educates people and also empowers them.

Recommendation
To encourage visitors to use public transport, ARTA needs to add more natural environment in the upgrades. Dark spaces, graffiti and garbage gives a negative feel to the place and should be removed. The upgrades should not only cater for the increased amount of commuters but they should also have a theme that reflects local culture. This will make the experience more enjoyable. The service quality should also be of high standard. Transport has to be reliable, safe and user friendly. If the waiting time is long, some form of entertainment should be provided. Providing incentives like discounted prices on the buses, trains, transport stations will increase the number of users.

To encourage local people, ARTA should implement both pull and push measures to reduce the use of private vehicles. Exploiting cognitive dissonance and making the users of private vehicles feel isolated and guilty in people's going against the "green" theme will help to change behaviours. Marketing campaigns targeted to local people should not be generic but the advantages and disadvantages should be targeted at a personal level. Also, the travel behaviour change programme, Indimark, can be used once the target population is selected. By implementing this tool ARTA can give practical solutions to local people about using public transport.

To change the current commuting culture and the mind-set of people, ARTA should implement bottom-up behaviour change strategies. To engage people and give them practical solutions Indimark and travel blending tools should be implemented extensively. The main idea of these tools is to empower people, provide practical solutions and provide incentives to change behaviours. ARTA should try to convince high school leavers and individuals experiencing work transitions as they have a high probability of changing. Marketing and awareness campaigns should again not be focused at a societal level but at a personal level so people see a causal link between their choices and adverse effects. Standards should be maintained on the overall look and feel of transport. Journeys should be made as scenic and enjoyable as possible. The main issue in public transport is that people feel they are wasting their time. Thus, availability of wireless internet on public transport, waiting rooms and television screens streaming news channels will engage people. This will make commuters feel productive in the journey. Safety and security should also be of high standard. Car parks at the train stations should be made secure so that people who do not have direct access can drive to the train stations and then catch public transport.

Policies also have a huge role in influencing behaviours. Technological solutions are not always beneficial for the environment. For example, environmentally friendly cars will reduce the impact on the environment on a per-unit basis but the overall volume of use of cars increases which causes more negative externalities like traffic congestion and noise pollution. Thus, environmental regulations should always be in place. While embarking on a project, ARTA should also encourage stakeholder engagement. The context sensitive design framework developed by the American Association of State and Highway Transport Officials is a useful start to foster stakeholder engagement.

Conclusion
ARTA has taken effective initiatives to push public transport in the Rugby World Cup 2011 whilst thinking about future implications. The main issue for ARTA is that Auckland still lacks the culture of using public transport. Other issues for ARTA are problems related to topography and technology. However the path that ARTA has taken is precise but it lacks depth. This case study has provided recommendations to add more depth into the ARTA initiatives.

The limitation of this case study is that the recommendations have not been analysed with regard to ARTA's financial position. But, consistency has been maintained to ensure that the recommendations are linked with the current initiatives of ARTA. None of the recommendations fall in the category of being too idealistic. New tools and methods that are discussed in the case study have been implemented in other nations and have proven to be beneficial. However, evaluating the recommendations with ARTA's financial strength will lead to more refinement and increase the likelihood of implementation.

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8. Development of a primary curriculum framework for Bangladesh (From Grade I to Grade VIII)

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Abstract

The purpose of this study was to develop a primary curriculum framework (grade I-VIII) for Bangladesh when the Government decided to increase the duration of primary education up to grade VIII from the existing V. A two-round Delphi method was used in this study. Education experts were asked to select different items in major sections of the curriculum framework: objectives, subject area, and time allocation of subjects. The final results were interpreted from data gathered in the second stage of Delphi. The Content Validity Ratio (CVR) was calculated based on the Lawshe (1975) formula. The result showed that experts want to adopt a holistic approach to development for the objectives. The recommended subjects were: Mother Language (Bangla), Foreign Language (English), Mathematics, Science, Social Studies, Moral and Religious Education, Vocational and Technological Education, Physical Education, and Arts. The subjects Mother Language (Bangla), Mathematics, and Foreign Language were preferred to be given higher time allocation. Vocational and technological training was recommended for grade V to grade VIII students. The curriculum framework developed from this study is a reflection of the academic aspirations of this south Asian nation. This provides a pragmatic guideline to be used by the country at a time of change in curriculum development.

Keywords

Primary Education of Bangladesh, Curriculum Framework, Delphi, CVR

Dr. Syed Mohammad Masud Jamali has been working as a Lecturer at ICL Business School for the last three years. His PhD research, completed at the Korea University, is on curriculum development that reflects light on the curriculum of OECD and non-OECD countries. His career involves working in education, research and development organizations in Bangladesh, New Zealand and South Korea. He has presented original research papers in several international conferences. His major research interests are curriculum design and evaluation, Maori education, motivation and early childhood education.

I. Background

The curriculum framework developed in this study is designed for Bangladesh. Bangladesh is a south Asian country, once colonized by the British as part of an undivided India. Thus its education system was influenced by the British education system. Again, it is influenced by the rich cultural traditions of ancient time. Also intellects from the newborn country in 1971 have influenced immensely all initiatives taken by the Government until the present. For example the 1974 policy report of Kudrat-e-Khuda can be considered as a foundation document for all structural changes in the education system of Bangladesh. All the major documents in Bangladesh including that report recommended primary level of education to be up to grade VIII. This research provides a model curriculum on the implementation of this proposal. In Bangladesh, the state is committed to the provision of basic necessities including adoption of uniform, mass-oriented, free and compulsory education through which an equitable society can be created so that all kinds of exploitation can be removed (Articles 15, 17, 19 of the constitution). Bangladesh is one of the countries that have signed to fulfill the target of Education for All (EFA) and Millennium Development Goals (MDGs).

It has been revealed from different studies that many children do not attain the standards required for learning set through the competency-based curriculum. There is also evidence that many students who complete primary education do not attain acceptable standards of literacy and numeracy. Many factors seem to contribute to this real and perceived lack of quality education. Some are considered as major factors: weak organizational and institutional framework for delivery of primary education, lack of proper physical environment at schools, the shift or staggered system with its comparatively short school contact hours and lack of support materials (Primary Education Development Program [PEDP II], 2009).

To overcome the shortcoming in primary education, the Government of Bangladesh took some initiatives in this sector. Among those initiatives, one of the most important attempts was to develop a "New Education Policy (2010)". The New Education Policy (2010) suggested increasing the duration of primary education from grade V to grade VIII by the year 2018. To develop a new primary curriculum has been recommended in this new education policy as existing primary curriculum framework is until grade V. It is not known or investigated how this change will encompass objectives, subject matter and timetables. In this study the main purpose was to develop a primary curriculum framework (until grade VIII) with suggestions from experts in education sector of Bangladesh. Through the investigating procedure in this study, I decided to attempt to answer some questions, which are:

1. What objectives should be focused on in primary education?
2. What will be the structure of the primary curriculum? This research question, leads to some specific questions, such as:
   a. What subject areas should be included in the primary curriculum?
   b. What will be the initial and terminal stage of those subjects?
   c. How should the timetables be aligned with the selected subjects?
   d. Whether a subject should be included in the national level examination or not?
   e. Whether the second foreign language (except English) should be included in the primary curriculum or not?
   f. Should vocational training be included at primary curriculum or not?

II. Methodology

1. Nature of research

This study is a descriptive research into what is concerned with conditions and relationships that exist, opinions that help, processes that are going on, and effects that evident of trends (Best & Khan, 1993). The study used a questionnaire as a tool using two rounds of modified Delphi survey method. It is a

method for structuring a group communication process to facilitate group problem solving and to structure models (Linstone & Turloff, 1975). This Delphi technique described here used mail or email to gather information, provide feedback, and report conclusions (Skulmoski et al., 2007).

The different steps followed through this study can be summarised as below:
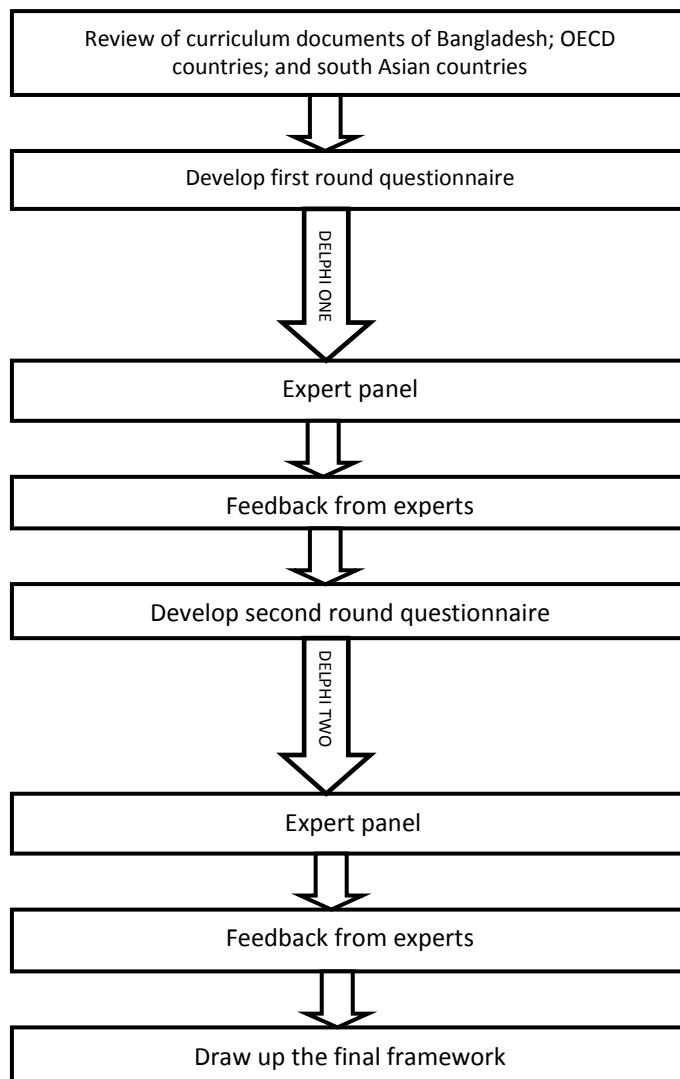
Figure 1. The different steps followed through the study

2. Participants

The participants of this study were education experts of Bangladesh working in universities, teacher training colleges, and non-governmental organizations (NGOs). The participants were selected purposively. The questionnaire was sent to the experts through electronic mail for both the rounds of Delphi survey.

3. Data analysis procedure

Data were analyzed in two stages: firstly after getting the data from the first round of Delphi and secondly, from the data of second Delphi round.

1) Delphi one

After getting responses from 42 experts out of 57, I sent them the second round modified questionnaire. For modifying the questionnaire, some techniques were followed. If the mean of the items is higher than 3.5 and 55% of professionals agreed (Kim, 2010 & Seo, 2008) with that item in the first section of the questionnaire, then the item was selected for the second round (Kim, 2010 & Seo, 2008). The mean of the each items and median and inter-quartile range were shown to the second round questionnaire to revise the opinion of the responses.

2) Delphi two

Twenty-six experts responded to the questionnaires. The final results were interpreted from the data gathered from the second round Delphi. Content Validity Ratio (CVR) was calculated for five point rating scales items based on the Lawshe (1975) formula as follows:

CVRi = [ne – (N/2)] / (N/2)

Where
CVRi = CVR value for the *i*th measurement item,
ne = number of experts "strongly agree and agree" with the measurement item, and
N = Total number of experts in the panel.

Lawshe (1975, p. 568) has established minimum *CVR*'s for different panel sizes based on a one-tailed test at the α = .05 significance level. For example, if twenty-six experts constitute the panel, then measurement items for a specific construct, whose *CVR* values are less than .36 would be deemed as not "essential" and would be deleted from subsequent consideration. The item *CVR* higher than .36 was accepted finally as a valid data for this study. For analysis and interpreting the data Statistical Program for Social Sciences (SPSS) and Excel programs were used.

III. Findings and Discussions

Experts were asked to choose the objectives of primary education under the different developmental categories. This categorization of objectives was based on the concept of holistic development. All these developmental aspects were regarded as important ones as per expert opinion. Overall, this study suggested the following objectives of the primary education:

Category A: Moral Development
The learners will develop a sense of affection and contribution.
The learners will develop a sense of mutual understanding.
The learners will develop a sense of justice.
The learners will develop a sense of patriotism.
The learners will develop respect for him/herself and other members of the society.
The learners will develop respect for all kinds of physical labor.

Category B: Communicational Development
   B1. Mother Language (Bangla)
The learners will acquire four basic skills (reading, writing, speaking and listening) of his/her own mother language (Bangla) to communicate in daily life.

   B2. Foreign Language (English)
The learners will acquire four basic skills (reading, writing, speaking and listening) of English Language to communicate globally.

Category C: Numerical Development

The learners will acquire basic numerical skills (addition, subtraction, multiplication and division).

The learners will manipulate basic geometrical patterns and shapes.

The learners will acquire numeracy skills to think creatively, critically, strategically, and logically.

The learners will acquire numeracy skills to solve mathematical problems in their daily life.

The learners will acquire numerical skill to solve problems of other subjects.

Category D: Scientific Literacy Development

The learners will achieve innovative, inquisitive and scientific attitudes.

The learners will know the basic facts of science.

The learners will acquire skills on how to use their scientific knowledge to solve problems in their practical life.

Category E: Social Development

E1. Knowledge about Society and Community Needs

The learners will develop a sense of patriotism and nationalism.

The learners will know about his/her own and others' rights and duties in family and society.

E2. Knowledge about History

The learners will gain knowledge about local history and heritage.

The learners will gain knowledge about the national history and heritage.

The learners will gain knowledge about the regional history and heritage.

The learners will gain knowledge about world history and heritage.

The learners will know how to analyze other fields of knowledge such as economy, geography, science, technology etc. through historical lenses and perspectives.

E3. Knowledge about Geography and Environment

The learners will know about five major geographical themes: place, locations, people's interaction with environment, people's migratory nature over time, and regionalism.

The learners will know the interaction of geographical knowledge with history, economy; politics etc as well as use that knowledge in their daily life.

The learners will possess an ecological sense.

The learners will know about environmental dangers and ways to eliminate or reduce such problems.

The learners will gain ideas about the effect of population growth on the basic needs of people.

E4. Knowledge about Multiculturalism

The learners will know about cultures of other ethnic groups and about people from other countries.

The learners will show respect to other ethnic groups and their cultures.

The learners will acquire knowledge to practice multiculturalism in their daily lives.

Category F. Technological Development/ Vocational Skills

The learners will develop reflective thoughts regarding their own interests, aptitude and career plan.

The learners will develop technological and vocational awareness.

The learners will develop technological and vocational orientation.

The learners will develop career awareness.

The learners will develop technological and vocational utilization in their practical life.

Category G. Aesthetical Development
The learners will develop aesthetical attitude.
The learners will develop a sense of beauty.
The learners will develop their imaginative and creative thinking.
The learners will develop to use their aesthetical knowledge in their practical life.

Category H. Physical Development
The learners will develop manipulative skills (such as throwing, striking, catching, rebounding, and redirecting objects) through physical training and games.
The learners will develop loco motor skills (such as jumping, hopping, running, skipping) through physical training and games.
The learners will develop non-loco motor skills (such as bending, stretching, pushing, pulling, raising, twisting etc) through physical training and games.
The learners will develop special motor skills such as swimming.
The learners will develop a physical awareness.
The learners will develop knowledge about first aid to use it in their daily life.
The learners will know how to save a life and avoid danger and risk.

The study conducted suggested 47 objectives in total that includes almost all points from the existing 22 objectives. However, it reflects few notable differences. For example, the experts of this study suggested a number of objectives related to morality, but none of those were affiliated to religion. The existing curriculum has two objectives that directly link morality to religion.

The suggested curriculum framework includes a new dimension in the objectives related to scientific and technological knowledge. It emphasized developing a career plan amongst learners rather than involving vocational training with a general vague perspective. Another significant difference is suggested curriculum places more value on the global context. It is stated in the existing curriculum that the learners should 'gain knowledge about and insight into national through history, heritage and culture'. According to the suggested framework, this is to be replaced by a step-by-step knowledge of local, national, regional and world history and heritage. Interestingly, Bronfenbrenner's Ecological Model of Development can support this suggestion. Valuation of globalization is also shown by the added objectives related to multiculturalism. The objectives related to physical development in the suggested curriculum added life-saving skills and first aid competencies to ensure healthy living in all situations. Overall, the objectives in the suggested curriculum framework are more detailed and inclusive except missing two important notions that are found in the existing curriculum. These include interest in lifelong education and preparedness for the next level of studies.

The curriculum structure deals with factors such as subject matter, arrangement of the subjects, and time allocation of the subjects in each grade. The proposed curriculum structure was formed according to the suggestions of education experts of Bangladesh.

Table 1: *Proposed primary curriculum structure*

Subject	Initial stage ~ Terminal stage	Opt-ional or Comp-ulsory	Periods (in weeks) by grade								Whether subject should be administered in the NLE? If yes, then which grade		2nd Foreign Language
			I	II	III	IV	V	VI	VII	VIII			
Mother Language (Bangla)	I ~ VIII	Comp.	6	6	6	6	6	6	6	6	YES	VIII	
Foreign Language (English)	I ~ VIII	Comp.	6	6	6	6	6	6	6	6	YES	VIII	
Mathematics	I ~ VIII	Comp.	6	6	6	6	6	6	6	6	YES	VIII	
Social Studies	I ~ VIII	Comp.	3	3	3	3	6	6	6	6	YES	VIII	
Science	I ~ VIII	Comp.	3	3	3	3	6	6	6	6	YES	VIII	Not required
Moral and Religious Education	I ~ VIII	Comp.	1	1	1	1	2	2	2	2	NO	-	
Physical Education	I ~ VIII	Comp.	2	2	2	2	1	1	1	1	NO	-	
The Arts (Music, dance, Drama, Visual Arts)	I ~ VIII	Comp.	2	2	2	2	1	1	1	1	NO	-	
Vocational and Technological Education	II ~ VIII	Comp.	-	1	1	1	2	2	2	3	NO	-	
Total periods (per week)			29	30	30	30	36	36	36	37			
Vocational training by grade (per month)			-	-	-	-	1	2	2	3			

Comparing the existing primary curriculum structure with the proposed one, it was seen that the subject areas are little different then the proposed structure of the curriculum in this study. For example: Social Studies instead of Environmental Studies: Social; Science instead of Environmental Studies: Science; and Moral and Religious Education instead of Religious Studies. And also, instead of the subject Arts and Craft and the subject Music, a combined subject of Arts is suggested in the proposed structure. The subject Vocational and Technology Education is recommended in the proposed curriculum structure which is absent in the existing structure of the curriculum.

In terms of time allocation for each subject in each grade, it was demonstrated that in the proposed curriculum Mother Language (Bangla), Mathematics, and Foreign Language got higher preference, which is similar to the existing primary curriculum structure. Secondly, Environmental Studies: Social and Environmental Studies: Science got preference in terms of time allocation. In the existing primary curriculum for Religious Studies more time is allocated compared to that of the proposed structure of the primary curriculum. In the proposed curriculum the subject Physical Education and Arts is more

emphasized in terms of time allocation than that of the existing primary curriculum. For assessing the learners at the national level the subjects chosen in the proposed structure are Mother Language, Mathematics, Foreign Language, Social Studies, and Science. In the existing structure of the curriculum, Religion is also a subject that is assessed, which was not recommended in the proposed structure in this study. Also, in the proposed curriculum structure, it was suggested that the national level examination should be held at the end of primary schooling, which is grade VIII instead of grade V. Vocational training was suggested from grade V in the proposed curriculum so that if the learners drop out during the primary schooling, then they can build a career with their vocational training.

The research is significant in terms of providing guidance to a major change in the education system of Bangladesh. The findings from this research helped to develop a curriculum framework that has socio-historical, economic and philosophical implications. This model will also be useful in structural changes in education in addition to economic change. As this model is not based on competencies, rather focused on goals and learners' well-being and development, it will be easier to relate to a model for early childhood education. At present, Bangladesh does not have a national curriculum framework for early childhood education. As this period of life is the most significant one to influence people's development, it should be done in the near future. This model curriculum will be effective in this regard as a goal-based framework will be required for the younger ones, not a competency-based one. Again, the curriculum model offers a wide range of practical and vocational subjects, and also internship, this model can easily be linked with different fields of knowledge at secondary and tertiary level. As a result, the education system, from pre-school to tertiary, will be philosophically and practically consistent. This research can act as a base for implementing the Government's plan to extend the primary level up to grade VIII.

There are several areas that can be explored further before, during or after the implementation phases. Firstly, this study can be expanded to a national level survey, which might include a wider range of respondents from all over the country. A national level survey can ensure opportunities for all working in the education sector to contribute and to express their opinions. Secondly, studies might be conducted to understand other curriculum factors such as the subject-specific contents and teaching-learning strategies, and also assessment procedures and policies. Furthermore, as the Bangladesh education system has two major streams in the primary level – namely General and Madrasah – studies may be conducted to develop frameworks for each stream separately. Also as Bangladesh is a developing country with a vulnerable economy, meticulous studies may be conducted to assess the socio-economic readiness of implementing universal, free and compulsory education up to grade VIII.

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9. Gains and losses from trade liberalisation: a theoretical debate and empirical evidence

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Abstract

The purpose of this paper was to review the theoretical debate and empirical evidence on gains and losses from trade liberalisation. Advocates of trade liberalisation argue that free trade is an engine of growth while protection leads to a wasteful use of resources, thereby adversely affecting economic development. They argue that the shift towards a more open trading regime confers significant benefits – both static and dynamic gains – to the trading economies. Conversely, critics argue that openness has its cost that could be a significant barrier to economic development. The theoretical ambiguity on the effects of trade liberalisation was reflected in the available empirical literature. Some studies pointed to strongly positive growth effects of trade liberalisation on trading economies. But some studies cast doubt on the significance and robustness of the growth benefits of openness. This paper argued that the impacts of trade liberalisation on development have been a subject of ongoing debate for centuries and it has not been settled yet. While on the balance the weight of opinions and findings favour liberalisation, the evidence remains mixed and loaded with criticisms on the grounds of choice of liberalisation indicators, model specification and methodology among other measurement shortcomings. This study suggests that the literature is still inconclusive and outcomes are largely case specific.

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1. Introduction

Trade liberalisation refers to the reduction of trade barriers that have been created over a number of years by countries around the world. These barriers are created to protect domestic production (both manufacturing and agriculture) from competition of foreign producers (Agbeyegbe, Stotsky, & WoldeMariam, 2006; Duncan & Quang, 2003; Feenstra & Taylor, 2008; Hoekman & Nicita, (2011 In press); Anne O Krueger, 2009; Krugman & Obstfeld, 2006; Panagariya, 2009; Turner, Nguyen, & Bird, 2008). These barriers include a complex and opaque assembly of instruments and regulations including various trade controls (such as tariffs, variable levies, import and export subsidies, quotas and other non-tariff barriers), price support measures, income transfers, production subsidies, investment grants etc. (Eicher, Mutti, & Turnovsky, 2009; Feenstra & Taylor, 2008; Husted & Melvin, 2007; Krugman & Obstfeld, 2006). Trade liberalisation has gained popularity since Ricardo's analysis of *comparative advantage* which explains how trade can benefit economies with differences in technology and opportunity costs of production (Amoroso, Chiquiar, & Ramos-Francia, 2011; Rahman, 2008; Whaples, 2006; Zhang, 2008).

However, the effects of trade liberalisation on development have been a subject of debate for centuries (Abbott, Bentzen, & Tarp, 2009; Chang, Kaltani, & Loayza, 2005; Chang, Kaltani, & Loayza, 2009; George, 2010; Gingrich & Garber, 2010; Kirkpatrick & Scrieciu, 2006; Nicita, 2004; Rahman, 2008). The arguments in favour of free trade are well known and date back at least to Adam Smith's analysis of market specialisation and the principle of absolute advantage in 1776 (Chang, et al., 2005; Chang, et al., 2009; Rahman, 2008; Zhang, 2008). Classical economists argue that free trade is an engine of growth while protection leads to wasteful use of resources, thereby adversely affecting economic development (Chang, et al., 2005; Chang, et al., 2009; Krugman & Obstfeld, 2006; Rodriguez & Rodrik, 1999; Joseph E Stiglitz & Charlton, 2007; Stone & Shepherd, 2011; UNIDO, 2010). On the contrary, critics argue that openness has its costs and sometimes it could be detrimental to economic development (Chang, et al., 2005; Chang, et al., 2009; Rodriguez & Rodrik, 1999; Joseph E Stiglitz & Charlton, 2007; Stone & Shepherd, 2011; UNIDO, 2010).

The purpose of this study is to review the theoretical debate and empirical evidence on gains and losses from trade liberalisation. The following sections include arguments for trade liberalisation, arguments against trade liberalisation, and empirical evidence on impacts of trade liberalisation.

2. Arguments for Trade Liberalisation

Smith (1776) argued that nations could accumulate wealth (benefits) from free trade and specialisation based on their *absolute advantage* derived from productivity of labour. Similarly, the Ricardian model of *Comparative Advantage* (Ricardo, 1817) suggests that countries get involved in international trade because of their differences in technology and opportunity costs in producing a particular good or service. Both trading countries can benefit from international trade if each country exports goods in which it has a comparative advantage (Amoroso, et al., 2011; Eicher, et al., 2009; Feenstra & Taylor, 2008; Krugman & Obstfeld, 2009; Zhang, 2008). The Ricardian model suggests that trading countries can experience an increase in real income from trade due to countries' specialisation in production of goods and services in favour of their comparative advantage (Chang, et al., 2005; Chang, et al., 2009; Eicher, et al., 2009; Feenstra & Taylor, 2008; Zhang, 2008). Ricardo (1817) argued that productivity of labour generated differences in comparative advantage amongst the trading nations. Conversely, the Heckscher-Ohlin model (Heckscher, 1919; Ohlin, 1933) argues that international trade is largely driven by differences in countries' resources, not by productivity of labour. The model argues that comparative advantage is derived from the interaction between nations' resources (factor endowment or relative abundance of factors of production) and the technology of production that influences the relative intensity with which different factors of production are used in producing different goods and services (Amoroso, et al., 2011; Eicher, et al., 2009; Feenstra & Taylor, 2008; Krugman & Obstfeld, 2009; Zhang, 2008). Trade produces a change in relative factors' prices; in turn, it changes relative earnings of factors leading to changes in income distribution. Thus, the owner of a relatively abundant

factor gains because of specialisation of production in its favour and the owner of a relatively scarce factor loses because of specialisation taken away from it (Amoroso, et al., 2011; Feenstra & Taylor, 2008; Krugman & Obstfeld, 2009; Meschi & Vivarelli, 2009; Zhang, 2008).

According to advocates of trade liberalisation, the shift towards a more open trading regime confers significant benefits (both static and dynamic gains) to the economy. The static gains from openness are explained by neo-classical trade theories. This advocacy for free trade was based not only on the Ricardian principle of comparative advantage but also on the argument that free trade would contribute to development through competition and learning (Chang, et al., 2005; García-Vega, Guariglia, & Spaliara, 2011; McCulloch, Winters, & Cirera, 2003; Montalbano, 2011; Zhang, 2008). Trade liberalisation promotes the efficient allocation of resources through comparative advantage, allows the dissemination of knowledge and technological progress, and encourages competition in domestic and international markets (Chang, et al., 2005; McCulloch, et al., 2003; Montalbano, 2011; Joseph E. Stiglitz, 2003; Stone & Shepherd, 2011; Zhang, 2008). This is because of the fact that trade liberalisation is meant to work by getting relative prices 'right', which should lead to reallocation of resources from import substitutions to export sectors (Foster, 2008; Anne O Krueger, 2010; McCulloch, et al., 2003; Zhang, 2008).

Similarly, trade liberalisation facilitates the increase in new trading partners thus forcing the least productive firms to exit, but it also generates entry of new firms into the export market. This is partly due to the increased exposure to trade that forces all firms to relinquish a portion of their share of the domestic market resulting in revenue and profit loss by the least productive firms who do not export (García-Vega, et al., 2011; McCulloch, et al., 2003; Melitz, 2003). Thus, both market shares and profits are reallocated towards more efficient firms. Both selection effects – entry and exit – contribute to an aggregate productivity increase if the newer firms are more productive than the average level, resulting in a productivity gain and increase in welfare (García-Vega, et al., 2011; Henry, Kneller, & Milner, 2009; Krugman & Obstfeld, 2006; McCulloch, et al., 2003; Melitz, 2003; Montalbano, 2011; Okubo, 2009).

Dynamic gains have been the focus of modern trade theories and the subject of much of the debate in the literature, in part because they are either poorly understood or difficult to measure (E Helpman & Krugman, 1985; Krugman & Obstfeld, 2006; Rodriguez, 2007; Stone & Shepherd, 2011). The dynamic gains from trade liberalisation are due to increased market access for exports with the inherent scope for economies of scale, which leads to increasing returns and eventually the accumulation of human and physical capital (Chang, et al., 2005; Chang, et al., 2009; McCulloch, et al., 2003; Sugimoto & Nakagawa, 2011). This foreign exposure obtained by the export sector in conjunction with higher returns, inspires entrepreneurship and raises productivity of factors above their pre-liberalised levels, which then drives the process forward (Chang, et al., 2005; Chang, et al., 2009; Krugman & Obstfeld, 2006; McCulloch, et al., 2003; Sugimoto & Nakagawa, 2011).

Classical economists argued that trade liberalisation should reduce the domestic price of importable goods by lowering tariffs. This argument is based on the fact that liberalisation, by definition, reduces the barriers to trade and allows markets to function efficiently, resulting in reduction in the domestic prices of the liberalised products by either making cheaper foreign products available or reducing the rents that might previously have been captured by domestic producers (McCulloch, et al., 2003; San Vicente Portes, 2009). Thus, trade liberalisation indirectly contributes to gains arising from a reduction in rent, corruption, and smuggling (Baunsgaard & Keen, 2010; Foster, 2008; Anne O. Krueger, 1974).

Moreover, trade liberalisation forces domestic firms to be more competitive and reduces their market power that may be built up in protected markets. This may contribute to a lower price and an increased variety and quality of goods (Foster, 2008; Islam & Habib, 2007; McCulloch, et al., 2003). As a result, the welfare of the economy increases in two ways: consumers are able to obtain a larger quantity and wider range of imports at cheaper prices, and the export sector also benefits from

cheaper inputs, resulting in an increase in export competitiveness which leads to a supply-response such that the producers are encouraged to produce for the export sector (Foster, 2008; Islam & Habib, 2007; McCulloch, et al., 2003). Therefore, trade liberalisation increases the degree of competition faced by domestic producers, allowing a country to improve its efficiency of production in three ways: increasing the efficiency with which existing resources are used; encouraging specialisation and reallocation of resources towards those activities that reflect the country's comparative advantage; and allowing economies of scale through exports to the world market (Chang, et al., 2005; McCulloch, et al., 2003; Montalbano, 2011; Joseph E. Stiglitz, 2003; Stone & Shepherd, 2011; Zhang, 2008). In addition to gains from specialisation towards comparative advantage, trade liberalisation may deliver benefits through four channels: opening foreign markets (market access); expanding the demand for domestic firms' goods; enabling domestic firms to serve a larger market; and realising gains from economies of scale (Chang, et al., 2005; Montalbano, 2011; Joseph E. Stiglitz, 2003; Stone & Shepherd, 2011; Zhang, 2008).

3. Arguments against Trade Liberalisation

On the other hand, critics of trade liberalisation argue that very cautious views and steps should be adopted to analyse trade liberalisation. Despite the strong intuitive appeal of the policy of trade liberalisation, a good number of criticisms have been directed towards trade reforms and gains from liberalisation.

Free trade advocacy came under serious challenge in the 1930s, as a run-up to the employment problem that had been faced by the world economies during the *Great Depression* (Ahmed & Sattar, 2004; Sebastian Edwards, 2009; Grytten, 2008; Nerozzi, 2011; Perri & Quadrini, 2002). The search for theoretical foundations to justify the use of trade protections for promoting development led to the formulation of the 'optimum tariff' arguments. Trade protection ranges from infant industry protection to responding to terms of trade deterioration, and to the need to correct distortions in the domestic economy (Ahmed & Sattar, 2004; Barro, 2004; Chang, et al., 2005; Sebastian Edwards, 2009; Krugman & Obstfeld, 2006; Neary, 2001).

Critics argue that if market or institutional imperfections exist, openness can lead to sub-utilisation of human and capital resources through concentration on extractive economic activities, or specialisation away from technologically advanced increasing return sectors (Chang, et al., 2005; Chang, et al., 2009; Krugman & Obstfeld, 2006; Panagariya, 2004). Grossman and Helpman (1991), and Matsuyama (1992) provided theoretical models where a technologically backward country may specialise in a non-dynamic sector as a result of openness, thus losing out on the benefits of increasing returns. Underlying these models there is an imperfection in contracts or in financial markets that causes people to observe a myopic notion of comparative advantage (Chang, et al., 2005; Panagariya, 2004; Joseph E Stiglitz & Charlton, 2007). Sachs and Warner (1999) developed a model where specialisation in the extractive, natural-resource sector prevents a country from technological progress that eventually leads to long-run growth. In this case, the underlying imperfection is an institutional weakness that encourages natural-resource depletion for quick gains appropriated by certain influential groups of the economy leading to serious distortions in income distribution and welfare changes against the weak (poor) groups of the economy (Chang, et al., 2005; Krugman & Obstfeld, 2006; Panagariya, 2004; Joseph E Stiglitz & Charlton, 2007). Rodriguez and Rodrik (1999) reviewed the theoretical arguments as to why openness could be detrimental to developing countries. They argued it in the context of theory of the second best, in which trade liberalisation is the policy lever for such quick gains appropriated by certain influential groups in society whilst market imperfections and institutional weakness are accepted as imminent characteristics of the economy. Krugman and Obstfeld (2009) argued that if there was imperfection in domestic markets, a government intervention that appeared to distort incentives in one market might increase welfare by offsetting the consequences of market failures in other markets.

Some economists such as Greenwald and Stiglitz (1986), Rodriguez and Rodrik (1999), Stiglitz (2003), Rodriguez (2007), Stiglitz and Charlton (2007), and Krugman and Obstfeld (2009) cast doubt on the Pareto outcome from free trade. They argued that a country might not, in practice, be able to design and implement the concerted welfare maximising transfers as explained in Pareto optimality because of the existence of externalities, imperfect competition, and asymmetric or imperfect information in the markets.

Critics of free trade criticise neo-classical trade models because they downplay externalities and market imperfection, rather they are based on the assumption of perfect competition (Eicher, et al., 2009; Feenstra & Taylor, 2008; Greenwald & Stiglitz, 1986; Krugman & Obstfeld, 2006). According to these models, price will always tend towards the point of intersection or equilibrium between the Marshallian downward-sloping demand curve and upward-sloping supply curve. As excess demand below the equilibrium drives the price increase and excess supply above the equilibrium pushes the price decrease, the *'invisible hand'* argued by Adam Smith (Smith, 1776) is presumed to guide and stabilise the economy through elimination of excess demand or supply, thereby increasing welfare of both groups of the society – producers and consumers (Eicher, et al., 2009; Gabre-Madhin, Barrett, & Dorosh, 2002; Greenwald & Stiglitz, 1986). However, the critics argue that perfect competition may not exist in reality because of externalities resulting from monopolies, technological differences, economies of scale and domestic distortion policies (Eicher, et al., 2009; Feenstra & Taylor, 2008; Greenwald & Stiglitz, 1986; Krugman & Obstfeld, 2006). Therefore, free trade may not achieve Pareto efficiency, thereby having welfare consequences – some groups in the economy will experience gain, and other groups will experience loss from trade liberalisation. In this situation, government interventions (e.g. taxes and subsidies) could achieve constrained Pareto efficiency (theory of the second best) that can make everyone better off through income transfer from gainers to losers, resulting from trade liberalisation (Blaug, 2007; Bliss, 1987; Greenwald & Stiglitz, 1986; Krugman & Obstfeld, 2006; Joseph E Stiglitz & Charlton, 2007; Tribe, Nixson, & Sumner, 2010).

'Leontief's Paradox' shook the foundation of neo-classical theories of trade liberalisation. In 1954, Leontief attempted to test the Heckscher-Ohlin theory and found that, in contradiction to Heckscher-Ohlin theory, the USA (one of the most capital-abundant countries in the world) exported labour-intensive commodities and imported capital intensive commodities (Eicher, et al., 2009; Feenstra & Taylor, 2008; Husted & Melvin, 2007; Krugman & Obstfeld, 2006). Some explanations for this paradox dismiss the importance of the comparative advantage as a determinant of trade. For instance, the *Linder Hypothesis* (Linder, 1961) states that demand plays a more important role than comparative advantage as a determinant of trade. According to this hypothesis, countries that share similar demands will be more likely to trade than countries with non-similar pattern of demands (Domit & Shakir, 2010; Fialová, 2010; Hallak, 2010; Husted & Melvin, 2007; Linder, 1961). Similarly, modern trade theories argue that technology varies across countries and the pattern of international trade might be determined much more by these differing technological capacities than by factor endowments (Eicher, et al., 2009; Feenstra & Taylor, 2008; Krugman, 1981; Krugman & Obstfeld, 2006).

Trade liberalisation has been under serious criticism because of unrealistic assumptions, such as perfect competition and constant return to scale, associated with the neo-classical Heckscher-Ohlin model of comparative advantage. These restrictive assumptions have been strongly challenged in the light of contemporary practices, suggesting that classical trade theories leave a significant part of international trade unexplained (Acharya, 2011; Krugman, 1981; Krugman & Obstfeld, 2006; Montalbano, 2011). This situation generated *'New Trade Theories'* which recognise the existence of imperfect competition, market power, economies of scale or increasing return to scale and technological differences between trading nations (Acharya, 2011; Baldwin & Forslid, 2006; Bliss, 1987; Eicher, et al., 2009; Feenstra & Taylor, 2008; Krugman & Obstfeld, 2006; Melitz & Ottaviano, 2008; Zhang, 2008).

Advocates of *New Trade Theories* such as Krugman (1979, 1980, 1981, 1991), Lancaster (1980), Dixit and Norman (1980), and Helpman (1981, 1987) argued that trade liberalisation could reduce the wages of unskilled labour even in a labour-abundant country as seen in the case of Mexico, thereby widening the income gap between the rich and the poor across economies as well as within an economy. This argument is based on the fact that most developing countries are endowed with an abundance of unskilled labour (Acharya, 2011; Chiquiar, 2008; Falvey, Greenaway, & Silva, 2010; Hoque & Yusop, 2010; Keleman, 2010). Moreover, even if global economic integration induces faster economic growth through technological innovation in the long run, the substantial reduction in poverty and the adjustment will be costly, with the burden falling disproportionately on the poor – because the poor may not afford investments associated with the adoption of available technology, nor do they have institutional supports to adopt technology to increase production (Acharya, 2011; Banerjee & Newman, 2004; Keleman, 2010; Rakotoarisoa, 2011).

More importantly, based on the Say's Law (Say, 1821): '*supply creates its own demand',* the theoretical underpinnings of neo-classical trade liberalisation models are largely supply-oriented by nature. Critics argue that these neo-classical trade models, based on perfect competition and other naive assumptions, downplay the dynamic demand-side and institutional considerations and instead assume that mere conformity of free trade based on comparative advantage would ensure the acceleration of a country's development. That means simply getting prices right, or neutral, would ensure the best allocation of resources. This concept is based on the Heckscher-Ohlin-Samuelson theorem, which argues that international trade will tend to equalise the absolute and relative income of homogeneous factors across economies (Eicher, et al., 2009; Feenstra & Taylor, 2008; Krugman & Obstfeld, 2006; Taylor & Roda, 2007; Zhang, 2008). This has brought fundamental criticism against the supply-side neo-classical trade models with glaring contrary evidence of the prediction of convergence in per capita and factor incomes across economies due to trade. In fact the so-called catch up claims are largely unobserved in reality because of wide differences in resources, barriers to trade, and international differences in technology (Eicher, et al., 2009; Feenstra & Taylor, 2008; Krugman & Obstfeld, 2006; San Vicente Portes, 2009; Taylor & Roda, 2007).

4. Empirical Evidence on Impacts of Trade Liberalisation

The theoretical ambiguity on the effects of trade liberalisation is reflected in the available empirical literature. Some studies pointed to strongly positive growth effects from trade liberalisation. This was the case of Sachs and Warner (1999) as well as Edwards (1998), who ran cross-country growth regressions on composite indices of the stance of trade policy and found significant impacts of various individual indicators of trade liberalisation on economic growth. Similarly, Ianchovichina *et al.* (2001), Epifani (2003), Acharya *et al.* (2008), and Acharya (2011) found a significant positive impact of trade liberalisation on economic growth. But others, most notably Harrison (1996), Rodriguez and Rodrik (1999), and Panagariya (2004) cast doubt on the significance and robustness of the growth benefits of openness. Their critique started with the openness measures used in practice; for instance, some purported openness indicators reflected general poor economic management or were primarily affected by geographic characteristics (e.g. trade volume).

Dollar and Kraay (2004); and Loayza *et al.* (2005) ran growth regressions on panel data of large samples of countries. Both studies used indicators for openness based on trade volumes, control for their joint endogeneity and correlation with country-specific factors, and concluded that opening the economy to international trade brought about significant growth improvements. Using event-study methodology – where an event is defined as a year of substantial trade policy liberalisation – Wacziarg and Welch (2003) found that trade-liberalising countries tend to experience significantly higher volumes of trade, investment and, most importantly, growth. However, in an examination of 13 country-case studies, they found noticeable heterogeneity in the growth response to trade liberalisation.

Chang, *et al.* (2009) argued that the growth response after liberalisation was positively related to the economic conditions and political stability of a country. Similarly, Bandinger (2008) argued that differences in institutional quality and trade, due to variation in geography and trade policy, had significant variation in the impact of trade liberalisation on productivity across countries. Similarly, Acemoglu and Robinson (2012) argued that the city of Nogales is divided into two part by a fence – a part in the USA (rich) and a part in Mexico (poor) – so close (geography) and yet so different (economy) due to differences in their institutional capacities.

Chang, *et al.*(2005; 2009) carried out rigorous regression analyses using data from 82 countries in order to examine how the growth-effect of trade liberalisation might depend on a variety of country-characteristics such as educational investment, financial depth, macroeconomic price stability, public infrastructure, governance, labour market flexibility, and ease of a firm's entry or exit. They concluded that removal of barriers to trade would need to be accompanied by complementary reforms in non-trade areas for improving productivity and growth. Moreover, the impacts of trade liberalisation might depend on the existence and degree of distortions in non-trade institutions as well as on the feasibility of removing those distortions.

Similarly, Foster (2008) conducted regression analyses taking data from 75 countries and found that the impact of trade liberalisation on growth was heterogeneous across countries. While many countries benefited from liberalisation, other countries lost out from liberalising their trading regime. This study suggested that countries with the lowest output growth, and particularly negative rates of output growth, benefited most from trade liberalisation. While countries with the lowest rates of per capita output growth were more likely to benefit most from liberalisation in the long run, they suffered significantly from short-run negative effects of trade liberalisation. He argued that this was partly because the private sector was doubtful about the reform process and did not respond to this reform in the short-run.

Wacziarg and Welch (2008), using the Sachs and Warner (1999) approach, used data from 24 countries over the period 1950-98. Their analyses found that half of the 24 countries exhibited almost zero or negative average economic growth due to trade liberalisation over this period. These countries were Jordan, Guinea-Bissau, Hungary, Mexico, Botswana, Israel, Philippines, Tunisia, Colombia, Cyprus, Paraguay and Poland. Some countries such as Mali, Benin, Guyana, Guinea and Ghana experienced a moderate growth rate ranging from an average of 1.19 to 1.99 percent. However, seven countries experienced considerable economic growth due to trade liberalisation ranging from 2.24 to 3.62 percent. They argued that countries which experienced negative or no effects of trade liberalisation on economic growth tended to have suffered from political instability, adopted contractionary macroeconomic policies in the aftermath of reforms, or undertaken efforts to counteract trade reforms by shielding sectors from necessary adjustment.

Montalbano (2011) argued that trade liberalisation could have negative impacts on household welfare through generating instability in domestic markets originating from foreign shocks through main transmission channels of trade liberalisation. Furthermore, when foreign shocks are greater than domestic price stabilisation capability, trade liberalisation may also affect governments' ability to operate price stabilisation policies. He concluded that trade theories could not provide a full understanding of the links between trade liberalisation, shocks, and uncertainty. He further argued that empirical evidence remained mixed, scattered in separate fields of analysis and did not reach a common stance. Therefore, whether trade liberalisation affected (and to what extent) the long-term welfare of some countries or households by raising their uncertainty about the future and/or their "risk exposure" to external shocks was still uncertain (Montalbano, 2011; Sugimoto & Nakagawa, 2011).

Naranpanawa, Bandara and Selvanathan (2011) found that, in the long run, impacts of trade liberalisation on the welfare of households in the manufacturing sector were pro-poor but the agricultural sector created uneven benefits across different household groups in Sri Lanka. They

argued that household endowments in the manufacturing sector were relatively even (mostly labour) while household endowments in the agricultural sector were relatively heterogeneous and uneven (land, labour and non-farm income).

Narayanan, Hertel and Horridge (2010) used computable general equilibrium (CGE) estimation tools to estimate both partial equilibrium (PE) and general equilibrium (GE) models separately and the PE-GE model jointly. They found that the PE-GE model showed higher welfare gain from trade liberalisation than either of the PE or GE models, indicating that empirical results were influenced by model specifications.

Acharya (2011) found conflicting results in two simulations regarding the effects of trade liberalisation on the welfare of Nepalese households. In the first simulation using CGE models, he found that the rich gained more than the poor from trade liberalisation, indicating that the growth was not pro-poor. Conversely, in the second simulation, after restructuring the model he found that the poor gained largely from trade liberalisation, suggesting that the growth was pro-poor. This study reinforced that empirical findings are based on model specifications and measurement variables.

5. Conclusion

The above review and analysis suggest that the effects of trade liberalisation on development have been a subject of ongoing debate for centuries and it has not been settled yet. Advocates of trade liberalisation argue that the shift towards a more open trading regime confers significant benefits – both static and dynamic gains – to the trading economies. The static gains from trade liberalisation are derived from the efficient allocation of resources based on comparative advantage, dissemination of knowledge, technological progress, and competition in domestic and international markets. The dynamic gains from trade liberalisation are due to increased market access for exports with the inherent scope for economies of scale, which leads to increasing returns and eventually the accumulation of human and physical capital. This foreign exposure obtained by the export sector in conjunction with higher returns, inspires entrepreneurship and raises productivity of factors above their pre-liberalised levels, which then drives the economy forward. On the contrary, critics of trade liberalisation argue that very cautious views and steps should be adopted to analyse trade liberalisation. Despite the strong intuitive appeal of the policy of trade liberalisation, a good number of criticisms have been directed towards trade reforms and gains from liberalisation. These criticisms are related non-realistic assumptions (perfect completion, constant return to scale, supply determines demand etc.) associated with neo-classical trade theories.

The theoretical debate and ambiguity on the effects of trade liberalisation is reflected in the available empirical literature. Some studies pointed to strongly positive growth effects from trade liberalisation. Conversely, some studies cast doubt on the significance and robustness of the growth benefits of openness. Their critique started with the openness measures used in practice; for instance, some purported openness indicators reflected general poor economic management or were primarily affected by geographic characteristics (e.g. trade volume).

While on balance the weight of opinion and findings favour liberalisation, the evidence remains mixed and loaded with criticisms on the grounds of choice of liberalisation indicators, model specification and methodology among other measurement shortcomings. This review suggests that the literature is still inconclusive and outcomes are largely case specific.

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