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Learning approaches and cultural influences: a comparative study of Confucian and western-heritage students

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With the advent of increasingly multinational student cohorts in many higher education institutes, the possible influence of 'national culture' on students' learning approaches has become a focal point of attention. In particular, the claim that Asian (Confucian) students adopt (primarily) surface learning approaches has attracted much debate despite, or perhaps because of, relatively little empirical research on the matter. Similarly in Ireland, while much concern has been voiced regarding the existence of a culture of surface learning in higher education, few studies have been conducted on the matter. The purpose of this research is to strengthen our understanding of these two areas through empirical evidence. This study examines the preferred learning approaches of students ($n = 327$) from 37 nationalities studying in a higher education institute in Ireland. Two hypotheses are tested: *Confucian Asian students will have higher surface strategy learning scores than western students* (*Hypothesis 1*) and *Irish students will have higher surface learning scores than other western students* (*Hypothesis 2*). The results indicate important differences in preferred learning approaches according to nationality and cultural cluster, where *Hypothesis 1* is rejected and *Hypothesis 2* is supported. The study is of particular interest to HE management and educationalists working with students entering higher education from diverse national backgrounds. Recommendations are made at an institutional level as to how HE management might address student surface learning approaches.

Keywords: learning approaches; deep learning; surface learning; nationality; culture; epistemology; higher education; Ireland; university

1. Introduction

The issue of different learning preferences amongst individual learners has long been a focus of attention amongst researchers in the field of pedagogy (see Olson 1952; Krumboltz 1963; Mussen 1965). As a result, various conceptual frameworks and research tools have been developed in an

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attempt to define and measure potential learning differences (Apfelthaler et al. 2005). Currently, researcher attention seems to have switched to identifying possible learning differences on the basis of nationality – perhaps due to the dramatic changes in the (nationality) profile of students attending western higher education (HE) institutes (Signorini, Wiesemes, and Murphy 2009; Holtbrugge and Mohr 2010). The logic is simple: given that cultural differences exist amongst different nationalities, and education is a social activity embedded in cultural values (Hofstede 1986), international cultural differences have potential ramifications for pedagogical practices.

However, despite this new focus, relatively few empirically based conclusions have been drawn as to any differences in learning approaches employed across nationalities (Signorini et al. 2009; Apfelthaler et al. 2005; Manikutty, Anuradha, and Hansen 2007; Tait 2010). In particular, the validity of the alleged dominant perception amongst 'western' educational observers that Asian students engage in 'surface' learning has been questioned by some educationalists (see Baumgart and Halse 1999; Kember 2000; Signorini et al. 2009). In contrast, despite being classified as a 'western' country, it has been strongly suspected by some that there is a student culture of 'surface' learning in Ireland – cultivated in secondary schools geared towards exam success rather than education *per se* (Hyland 2011; O'Grady and Guilfoyle 2007). While such claims may be seductive to the educationalist faced with trying to make sense of the learning needs of a culturally diverse student cohort, failure to investigate the validity of such assumptions as described above could potentially adversely affect student learning.

This paper examines the preferred learning approaches of students ($n = 327$) from 37 nationalities studying in a higher education institute in Ireland. In order to add to our knowledge of the aforementioned research areas, the following hypotheses are proposed:

Hypothesis 1: *Confucian-heritage students will have higher surface strategy learning scores than western-heritage students.*

Hypothesis 2: *Irish students will have higher surface learning scores than other western-heritage students.*

The purpose of this study is twofold; first, to identify any significant differences in the self-reported learning approaches of students according to nationality or cultural cluster; second, to make recommendations as to how 'surface' learning approaches may be addressed. The paper will be structured in the following way. First, the concepts of 'surface' and 'deep' learning will be examined. Second, the notion of national cultures and their potential relationship with learning approaches will be reviewed. Third, the organisational context of the research will be described and the research methodology employed will be outlined. Finally, the nature of the research findings and their implications for HE institutes will be discussed.

2. Learning approaches

In order to avoid confusion, a distinction needs to be made between 'learning styles' and 'learning approaches'. *Learning style* refers to an individual's experiential preference for acquiring knowledge and understanding (Manikutty et al. 2007), while *learning approaches* refers to different individual learning intentions regarding a subject matter (Cuthbert 2005). It is the latter that is the focus of attention of this study.

The idea of 'deep' and 'surface' learning approaches was proposed by Marton and Säaljö (1976a, 1976b). In their empirical observations of students, the researchers noticed how students tended to focus primarily on either understanding the subject at hand ('deep') or on memorising material ('surface'). The notion of a 'deep' learning strategy centres on the principle that the learner has a personal commitment to the learning process that stems from an intrinsic need to reach a thorough understanding of the subject material (Aharony 2006; Hamm and Robertson 2010). With the deep approach, the learner engages with the material and develops an insight into the interrelatedness of different elements of a subject (Pedrosa de Jesus et al. 2006). Deep learning is said to be linked to the idea of self-actualisation (Biggs 1993). In contrast, the surface approach involves the learner adopting a minimal level of interest in the subject, often relying on rote learning, and a strong focus on minimising effort in order to focus on 'exam material' (Biggs 1993). Here the course itself is often seen as consisting of unrelated pieces of information (Entwistle 2000). Entwistle identified a third (strategic) approach that was aimed at high achievement using either the deep or surface approach as required; however, this approach is no longer recognised as a distinct learning approach (Cuthbert 2005; Case and Marshall 2009) and is not included in the research conducted for this paper. The deep and surface approaches have two sub-elements each based on the motive and strategy of the learner (Table 1).

Cuthbert (2005) claims that a key weakness of the 'learning approaches' literature is that it provides no data about the extent to which a student is competent in the application of a learning approach in a learning environment. Crudely put, he claims that an 'incompetent' student with a deep approach may perform less well in assessment scores than a student with a 'highly polished' surface approach. However, this criticism assumes that both learning approaches are value-free and equally acceptable to instructors, which of course is untrue, as it is clearly preferable for educationalists that students use a deep rather than surface learning approach (Scouller 1998; Smith and Colby 2007). Indeed it can be argued that if students using surface approaches are performing well, then one could deduce that the assessment methods and pedagogical approach employed are inherently flawed (Scouller 1998; Smith and Colby 2007).

Table 1. Motive and strategy in approaches to learning and studying (Biggs et al. 2001).

Learning approach	Learning motive	Learning strategy
Surface approach	Surface motive (SM) is to meet the requirements with the minimum effort required.	Surface strategy (SS) is to limit the scope of material studied and to reproduce it through rote learning.
Deep approach	Deep motive (DM) is intrinsic interest in what is being learned: self-fulfilment.	Deep strategy (DS) is to discover meaning from many different sources, inter-relating with previous relevant knowledge.

Factors such as the teaching approach, objectives/curriculum, assessment, climate/ethos, institutional policies and procedures are important in influencing the learner's approach (Aharony 2006; Hamm and Robertson 2010). Following the principle that 'what gets measured gets managed', students will learn the forms of knowledge they are expected to demonstrate in assessment (Fransson 1977; Scouller 1998; Aharony 2006; Hamm and Robertson 2010). For example, evidence suggests that assessment methods such as multiple-choice questions (MCQ) encourage a surface learning approach while essay assignments are more likely to promote a deep learning approach (Scouller 1998; Tait 2010). Therefore, while the terms 'deep' and 'surface' have become mistakenly attached to individuals rather than behaviours, the deep/surface framework itself does not classify learners as deep or surface learners *per se* (Biggs, Kember, and Leung 2001).

As per Ramsden's (2003) model of student learning (see Figure 1), previous educational experience undoubtedly influences students' learning; indeed, such experiences perhaps shape our very understanding of the concept of 'education'. While these experiences are essentially personal, they may be embedded in hegemonic cultural practices in a country, i.e. a national culture. Understanding how such practices affect educational norms in a country is challenging – not least because of the difficulty in determining causality in such a field. However, there are also ontological and epistemological concerns regarding the very notion of 'national culture'.

2.1. National culture – for and against

While there are many definitions of the concept of 'culture', most involve shared values, beliefs and ideals amongst a group of people (Venaik and Brewer 2008). However, while the concept of culture is widely accepted, there are some fundamental concerns regarding the very concept of *national* culture (McSweeny 2002). For example, even if one assumes that national-type cultures exist, political separatists claim that there are 'nations within a

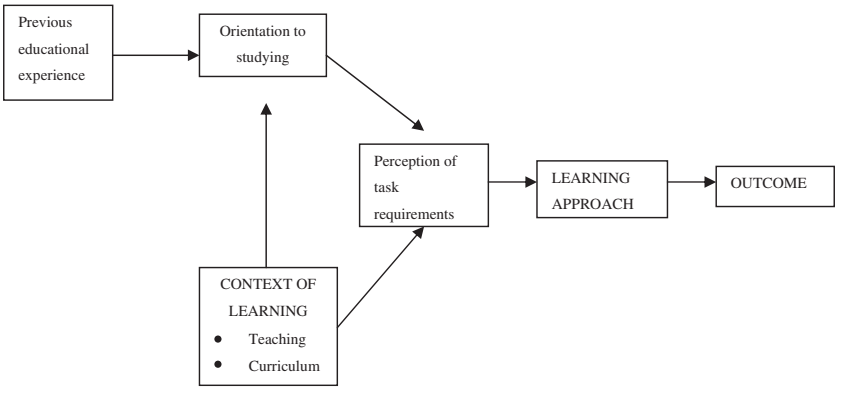

Figure 1. Student learning in context.
Source: Ramsden (2003).

nation' – for example, in Canada, Spain and the United Kingdom. Likewise, if one views language as an integral element of what constitutes 'culture', as it enables shared meaning, many countries have more than one language, and on that basis many 'cultures'. Similarly, many societies in developed countries have become more multicultural/national due to increased numbers of immigrants (see Gilmartin 2013). Finally, one could argue that culture may vary considerably according to one's socioeconomic background, age, ethnic background, etc. – presenting one with the impression of a 'web of cultures' rather than a 'cultural web'. Indeed, if one is to extend this process of breaking down cultures into 'subcultures', one arrives at an (extreme) relativist perspective, where 'meaning' can only be studied and understood at the level of the individual (defeating the very purpose of studying 'culture').

Leaving ontological concerns aside, there are also epistemological doubts concerning our ability to measure or observe national cultures (Baskerville 2003). Researchers who claim to identify and measure dimensions of national cultures ignore their own subjective part in this process (see Hofstede 1980). After all, dimensions and items purported to represent national culture are devised and chosen by a researcher (Baskerville 2003; McSweeney 2002). Furthermore, while the use of statistical tools such as factor analysis may give the impression of a scientific process, the interpretation of the results is a subjective process (McSweeney 2002). The labelling of factors, for example, is open to interpretation and may be influenced by previous preconceptions of the object of study (Ailon 2008; McSweeney 2002). Finally, it is claimed that the very notion that culture can be reduced to a few dimensions, measured and compared, is a seductive fallacy given the richness/diversity of cultural activities *per se* (Ailon 2008; Baskerville 2003; McSweeney 2002).

Based on the above, it is perhaps tempting to disregard entirely the notion of 'national cultures' as a lens for examining differing behaviours of

students. However, while accepting that the above criticism of 'national culture' research is valid, it is contended that the ontological and epistemological challenges associated with studying the concept of 'national culture' are typical of the challenges facing researchers in the social sciences. The notion of 'national culture' is supported here as it is contended that, generally speaking, there *are* shared assumptions, values and behaviour at a national level in many countries. This assumption is based on the premise that, at a fundamental level, meaning and understanding is derived through language – a societal 'product' in itself. Similarly, it is contended that other societal 'products' such as 'mass media', educational systems and religions promote shared understanding.

In any case, the purpose of this study is to examine the validity of certain assumptions regarding *nationalities* (not national cultures) and learning approaches, where 'nationality', as a variable, is far less susceptible to subjective interpretations than national culture. That said, it would be disingenuous not to acknowledge the cultural inferences that are made through the analysis of 'nationality' results.

2.2. *Confucius and learning approaches*

National cultures are not discrete entities that develop or exist in isolation, and it is therefore argued that there are cross-national commonalities based on philosophical influences, religion and language (Coopamah and Khan 2011; Gutierrez and Dyson 2009; Roberts and Tuleja 2008; Sun 2008; Saravanamuthu 2008; Kim and Park 2006; Lee and Carrasquillo 2006; Tweed and Lehman 2003; Gupta, Hanges, and Dorfman 2002; Hofstede and Hofstede 2001). In this context, the alleged Asian (Confucian) preference for surface learning approaches is said to emanate from broader societal norms influenced by Confucian philosophy (see Tait 2010; Gutierrez and Dyson 2009; Hofstede and Hofstede 2001; Hofstede 1986).

Confucius was an educator, philosopher and politician in China approximately 2500 years ago, whose teachings have had a profound effect on many east Asian cultures (Gutierrez and Dyson 2009; Sun 2008; Kim and Park 2006). In this regard, 'Confucian' heritage countries are identified as China, Taiwan, Singapore, Hong Kong, Japan, Korea and Vietnam (Nguyen, Terlouw, and Pilot 2006). Confucian teachings on the nature of society and education place an emphasis on obedience to parents, teachers and elders. They stress the harmony of social relationships, the suppression of emotions and the importance of following the correct social order (Sun 2008; Kim and Park 2006).

Education is said to be deeply embedded within the Confucian cultural mindset, where in South Korea, for example, educational success historically benefited the individual's family and became the primary avenue to career success and fulfilling one's filial piety (Kim and Park 2006). Indeed,

in empirical studies conducted in 1999 ($n = 780$) and 2001 ($n = 481$), Korean students rated educational success as the most important achievement in life (Kim and Park 2006). As Korean children grow up, it is claimed that they are expected to transfer their identification and loyalty from their parents to their teachers (Kim and Park 2006). For example, the honorific phrase 'Gun SA Bu IL Che' ('king, teacher and father are the one body') reflects the highly esteemed social position of teachers (Lee and Carrasquillo 2006). It is claimed that students tend to see the teacher as a 'guru' and try to internalise unquestioned knowledge handed down by teachers through rote learning and memorisation (Hofstede and Hofstede 2001; Lee and Carrasquillo 2006; Manikutty et al. 2007).

To many western educators, rote learning is associated with mechanical repetition and little or no understanding (Gutierrez and Dyson 2009). However, some researchers argue that the memorisation of material by Asian students can occur in conjunction with the intention to understand (see Baumgart and Halse 1999; Kember 2000; Gutierrez and Dyson 2009; Tait 2010). They argue that the pejorative view of rote learning is coloured by westerners' own experiences and styles of memorisation. For example, Tait (2010) argues that Chinese students sometimes adopt a memorisation strategy in order to compensate for a lack of language skills – they understand the material but fail to express themselves in their own words and memorise sentences to achieve the desired standard in examinations. This approach is perhaps best expressed by a Hong Kong student who stated that '[y]ou must memorise and then go on – understand, memorise and then go on – understand, memorise and then go on. That is my way of studying' (Kember and Gow 1990, 361). This is perhaps similar to the poetry student who understands the poem but nevertheless memorises it verbatim for the purpose of discussing it in the exam.

In any case, whether memorisation *per se* is linked to understanding or not is a moot issue. What is of importance is whether learner understanding takes place – an issue addressed with an item ('I learn some things by rote, going over and over them until I know them by heart even if I do not understand them') employed and highlighted in this study. Therefore, given the controversy concerning the issue of Asian (Confucian) student learning approaches, particular focus will be placed on their learning approach 'scores'. In this regard, taking into account the historical cultural practices of Confucianism and possible language difficulties, it is expected that *Confucian Asian students will have higher surface strategy learning scores than western students* (*Hypothesis 1*).

2.3. Socrates and learning approaches

In contrast, western education is said to be highly influenced by Socratic philosophy (Coopamah and Khan 2011; Roberts and Tuleja 2008; Tweed and Lehman 2003).

Socrates (469–399 BCE) valued the questioning of both his own and others' beliefs, the evaluation of others' knowledge and self-generated knowledge and teaching by implanting doubt (Roberts and Tuleja 2008). Socratic-influenced learning involves overt and private questioning, development of personal hypotheses and a preference for self-directed tasks (Tweed and Lehman 2003). Such an approach to learning is seen as 'deep' (Biggs 1993) and is supposedly very much encouraged in many western universities (Roberts and Tuleja 2008). Indeed, while the term 'western' may be seen as loose and monolithic (Saravanamuthu 2008), it is used here to represent countries in the developed world where education is (broadly) viewed, at least in principle, from this Socratic perspective. More specifically, for the purposes of this study, 'western' countries are primarily identified as the USA and Canada, non-former communist European states and Australasia.

In this regard, Ireland could be classified as a 'typical' western country, given the apparently prevailing Socratic pedagogical ethos. For example, one of its best known universities, University College Dublin, was founded by Cardinal Newman – a noted advocate of Socratic education:

> A university is a place … whither students come from every quarter for every kind of knowledge … It is the place to which a thousand schools make contributions; in which the intellect may safely range and speculate … It is a place where inquiry is pushed forward, and discoveries verified and perfected … and error exposed, by the collision of mind with mind, and knowledge with knowledge. (Newman 1996, 6)

Similarly, the mission statement of Trinity College Dublin states the university's aim to provide 'a liberal environment where independence of thought is highly valued and where staff and students are nurtured as individuals' (Mission – About Trinity – Trinity College Dublin n.d.). Given this apparent culture of Socratic/deep learning, why have Irish students gained a (domestic) reputation for surface learning?

In a report on the state of HE in Ireland commissioned by the Higher Education Authority and National Council for Curriculum and Assessment, Hyland (2011) concluded that many students enter higher education without the adequate literacy and numeracy skills required. The author claims that the final set of secondary-level exams, the Leaving Certificate, rewards surface learning approaches such as rote learning and not deep learning approaches such as problem solving, critical thinking or self-directed learning. Similarly, Byrne and Willis (1997) found that Leaving Certificate examinations encourage students to adopt a surface learning approach. Further supporting evidence for this claim can be found in recent results of the OECD Programme for International Student Assessment (PISA) tests in literacy, numeracy and scientific numeracy, which show a decline in the relative performance of 15-year-old Irish students compared to their

international counterparts. Ireland's numeracy ranking fell from 16th to 26th and its literacy ranking from 5th to 17th between 2000 and 2009 (OECD 2009). The PISA tests are claimed to concentrate on the application of knowledge rather than the rote memorisation of concepts (Gallardo-Gil et al. 2010; Hyland 2011). Therefore, the alleged 'surface' values associated with the Irish secondary educational system may remain with students into their studies at HE institutes. Hyland (2011) highlights the potential consequences to the Irish HE sector:

> Because the Leaving Cert is a high stakes exam, used for selection to third level, its backwash effect on teaching and learning and on the student experience is considerable; the exam becomes the determinant of what is studied and how; non-exam subjects get little or no attention and, in many cases, broader co-curricular activities are ignored or minimised. (Hyland 2011, 4)

Previous studies on the learning approaches of HE Irish students have primarily focussed on inter-disciplinary, as opposed to international, comparisons (see Byrne and Flood 2005; Byrne, Flood, and Willis 2002a; Byrne and Flood 2005; Byrne et al. 2010). However two pieces of research have compared Irish accounting students to American accounting students in different universities (see Byrne, Flood, and Willis 2008), and Irish to French, German and Spanish students on the same business programme in Ireland (see Byrne, Flood, and Willis 2002b). In both studies the Irish students' scores on deep learning approaches were significantly weaker than those of other nationalities. In the Irish-American study the authors claim that (1) American students 'exhibit a higher intrinsic interest in learning and show an enhanced willingness to integrate ideas and to relate evidence to conclusions' (Byrne et al. 2008, 159) and (2) Irish students were more likely to rote-learn. They cited larger Irish class sizes, greater American supportive learning and continuous assessment methods in the American university as potential reasons for the differences.

In the European study, the authors cited student age, year of study and prior educational experience as potential explanatory factors for the differences. The Irish sample was younger – older students have been found to be more likely to adopt a deep approach to learning than recent school leavers (Watkins 1982; Sadler-Smith 1997). Furthermore, the course content in the final years of the programme was claimed by the authors to be more conceptual and challenging – possibly encouraging students to adopt a deep approach to learning. In this regard, 38% of the overseas students were in years 3 or 4 of the programme, whereas all of the Irish students were in years 1 or 2. Nevertheless, based on the above, it is expected that *Irish students will have higher surface learning scores than other western students* (*Hypothesis 2*).

3. Research methodology

In 2011 a survey of Irish and non-Irish undergraduate business students was conducted at Griffith College Dublin in Ireland. The questionnaires were handed out by the researcher and completed during class (with prior permission from the lecturer). Respondents were asked for their student numbers as this would provide the researcher with personal information such as age, gender, course and year of study. However, the respondents were informed that the purpose of the survey was to examine the overall, and not individual, responses.

In total 327 students completed the survey, of whom approximately 16% were Irish (see Table 2 for nationalities). The high number of non-Irish students can be explained by the number of exchange students (in particular Chinese) that the college received in year 3 (the final year) of its programmes. Consistent with college ratios, 92% of the participants were full-time students, while the male/female breakdown was 53/47. The percentage breakdown for year 1, 2 and 3 students was 20/20/60 – a spread that can be explained by the large number of final-year international exchange students.

A number of survey instruments have been designed to measure deep and surface learning approaches (Hamm and Robertson 2010). The R-SPQ-2F tool was chosen for this study because it is widely used in educational research (Richardson 2004) and thus facilitates comparisons. The tool provides a relatively straightforward method to evaluate the learner's preference for surface or deep learning and has been validated (Byrne et al. 2002b; Biggs et al. 2001) and replicated by others (Mimirinis and Bhattacharya 2007).

The questionnaire consists of 20 items representing two main scales, Deep Approach (DA) and Surface Approach (SA), with four subscales, Deep Motive (DM), Deep Strategy (DS), Surface Motive (SM) and Surface Strategy (SS). *Learning motive* refers to why students learn and *learning strategy* refers to how they learn (Table 1). Each subscale has five items and each item is rated on a 5-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. In order to facilitate interpretation, scalar scores were calculated by averaging item scores, where 'strongly agree' equals 1 and 'strongly disagree' equals 5.

Results were analysed by means of descriptive statistics and by correlation analysis to probe into potentially significant relationships regarding learning approaches. Cronbach's alpha coefficients for the two main scales and four subscales were: deep approach = 0.74, deep motive = 0.57, deep strategy = 0.57, surface approach = 0.74, surface motive = 0.63 and surface strategy = 0.60. The bivariate correlation score (r) for the deep scale and surface scale was −0.152 (Pearson) where the score is deemed to be statistically significant at the 0.01 level (Table 3). ANOVA tests of the non-nationality student profile variables indicated no significant differences in learning approach scores.

Table 2. Net LA score by nationality.

Report			
NATION	Mean	N	Std. Deviation
American	.5667	3	.61101
Austrian	–.2000	2	1.69706
Bangladeshi	–1.7000	2	1.41421
Bosnian	–1.1143	7	.83352
Brazilian	–1.2100	10	.46296
British	–.6500	2	.77782
Bulgarian	–.9000	2	.84853
Chinese	–.4966	118	.82916
Croatian	–.5333	3	.15275
Czech	1.1000	1	.
Danish	.6000	1	.
French	–.5900	30	.80015
German	–1.0200	10	.69570
Indian	–.9500	10	.78209
Irish	–.3098	51	1.05892
Italian	–1.2500	2	1.90919
Kazakh	–.8000	7	.92916
Kenyan	–1.8000	1	.
Korean	–.5357	14	.57326
Kosovan	–1.1000	1	.
Malawian	–1.0000	1	.
Mauritian	–.5000	1	.
Mexican	–.9000	1	.
Nepali	–.5818	11	1.05244
Nigerian	–.5333	3	.46188
Pakistani	–1.0357	14	.96125
Panamanian	–1.1000	1	.
Polish	–.4667	3	1.23423
Portuguese	–.2000	1	.
Qatari	–.1000	1	.
Romanian	–2.1000	1	.
Russian	–1.0250	4	.71822
Spanish	–.1500	2	.21213
Swedish	–2.1500	2	1.20208
Swiss	–.8000	2	.42426
Tanzanian	–.3000	1	.
Turkish	–1.3000	1	.
Total	–.6024	327	.89603

4. Results

In order to aid analysis of the results, a *net LA score* was calculated (deep scale score minus surface scale score) to indicate an overall deep-surface learning inclination, where a negative score indicates a preference for a deep learning approach. The overall scores clearly indicate a deep learning orientation, with 34 of 37 nationalities reporting a negative average score

Table 3. Bivariate correlations of scales.

		Correlations					
		DEEPSCA	DEEPMO	DEEPSTRA	SURFSCA	SURFMO	SURFSTR
DEEPSCA	Pearson Correlation	1	.907**	.898**	–.152**	–.171**	–.094
	Sig. (2–tailed)		.000	.000	.006	.002	.091
	N	327	327	327	327	327	327
DEEPMO	Pearson Correlation	.907**	1	.629**	–.171**	–.181**	–.118*
	Sig. (2–tailed)	.000		.000	.002	.001	.033
	N	327	327	327	327	327	327
DEEPSTRA	Pearson Correlation	.898**	.629**	1	–.102	–.127*	–.050
	Sig. (2–tailed)	.000	.000		.067	.021	.371
	N	327	327	327	327	327	327
SURFSCA	Pearson Correlation	–.152**	–.171**	–.102	1	.882**	.873**
	Sig. (2–tailed)	.006	.002	.067		.000	.000
	N	327	327	327	327	327	327
SURFMO	Pearson Correlation	–.171**	–.181**	–.127*	.882**	1	.540**
	Sig. (2–tailed)	.002	.001	.021	.000		.000
	N	327	327	327	327	327	327
SURFSTR	Pearson Correlation	–.094	–.118*	–.050	.873**	.540**	1
	Sig. (2–tailed)	.091	.033	.371	.000	.000	
	N	327	327	327	327	327	327

**Correlation is significant at the 0.01 level (2–tailed).
*Correlation is significant at the 0.05 level (2–tailed).

and an overall mean score of −0.6 for the sample (Table 2). In particular, an overall mean score of 2.2 for item 1, 'I find that at times studying gives me a feeling of deep personal satisfaction', is most encouraging. In contrast, the ROTE scores suggest an undesirable degree of 'blind' memorisation of material, with an overall score of 3 (Figure 2), where 35% indicated agreement or strong agreement with the statement.

Western nationalities represented in the study were American ($n = 3$), Austrian ($n = 2$), British ($n = 2$), Danish ($n = 1$), French ($n = 30$), German ($n = 10$), Irish ($n = 51$), Italian ($n = 2$), Portuguese ($n = 1$), Spanish ($n = 2$), Swedish ($n = 2$) and Swiss ($n = 2$), with a total of 108. Confucian nationalities represented in the study were Chinese ($n = 118$) and (South) Korean ($n = 14$), with a total of 132.

Hypothesis 1: Confucian Asian students will have higher surface strategy learning scores than western students

The results do not support the hypothesis (see Table 4). While the Confucian and western total mean scores are almost identical, it can be said that the western score is skewed by the large Irish representation (47%). If the Irish contingent is removed from the western sample, then Hypothesis 1 is supported (see Table 5). Despite the fact that the Confucian overall mean

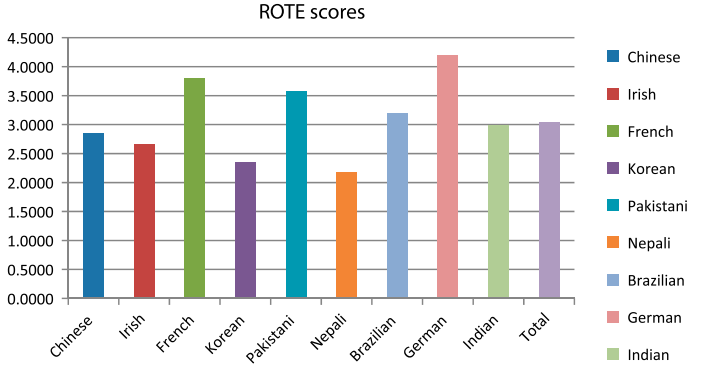

Figure 2. Mean ROTE scores by nationality (where $n = 10$ or more) ('I learn some things by rote, going over and over them until I know them by heart even if I do not understand them').

Table 4. Confucian v. western net LA scores.

Heritage	Mean	N	Std. Deviation
Others	–.9069	87	.84065
Confucian	–.5008	132	.80423
Western	–.4815	108	.99166
Total	–.6024	327	.89603

Table 5. Irish v. other western net LA scores.

	Mean	N	Std. Deviation
Irish	–.3098	51	1.05892
Other western	–.6351	57	.90937

Table 6. Irish and Confucian learning approach subscale scores.

		DEEPMO	SURFMO	DEEPSTR	SURFSTR
Irish	Mean	2.8	3.6	2.9	2.7
Confu	Mean	2.5	3.2	2.6	3.0
Total ($n = 327$)	Mean	2.5	3.4	2.6	3.0

score indicates a deep learning approach, the ROTE score of 2.8 for Confucian students indicates a tendency to engage in rote learning (Chinese = 2.85, South Korean = 2.36). The South Korean score is particularly noteworthy and is consistent with previous research (see Kingston and Forland 2008; Lee and Carrasquillo 2006).

Hypothesis 2: Irish students will have higher surface learning scores than other western students

Hypothesis 2 is supported as the Irish *net LA score* of −0.31 is noticeably higher than that of the total mean for the other western countries (Table 5), indicating a higher tendency to engage in surface learning. A breakdown of the Irish subscales scores indicates a surface learning strategy – where the aim is to limit the scope of material studied and to reproduce it through rote learning (Table 6). More specifically, the Irish ROTE score of 2.66, with 50% indicating some degree of agreement with the statement, is reflective of surface learning practices and contrasts sharply with the other western countries' total ROTE mean score of 3.8, with only 16% indicating some degree of agreement with the statement.

5. Discussion and recommendations

Overall, the results suggest that respondents adopt a deep learning approach to their studies (Table 2). What is perhaps most noticeable from the results is the relatively high surface learning orientation of Irish students – particularly given that they are studying in their native language, in contrast to the vast majority of their fellow students. Students from Confucian countries also had a greater tendency to engage in rote learning when compared to other students, but less so than Irish students. This is quite remarkable given that many of the Chinese students were on exchange for a period of only one academic year and, anecdotally at least, struggled to communicate effectively in English.

There are, of course, limitations to the study and the conclusions that can be drawn from it. Self-reported behaviour is problematic if unverified by other research methods, as students may have been trying to give an impression of themselves as deep learners, given that student numbers were recorded. Furthermore, the sample size for some of the nationalities was particularly small, significantly diluting the strength of the findings. Indeed, the responses from the Irish students may simply have revealed the pedagogical culture of the college rather than reflecting any national hegemonic practices.

The examination of international cultural differences through the paradigm of 'western v. Confucian' approaches to learning in the context of a sample including 37 nationalities is perhaps quite wasteful and self-limiting. After all, 27% of the sample is excluded from anything but a cursory analysis. Indeed, what is most noticeable is the relatively deep learning score of this 'other' element when compared with both western and Confucian scores (Table 4). With this in mind, perhaps greater attention should be given to potential cultural differences in learning approaches outside of the western v. Confucian dichotomy.

In any case, while much attention may seem to focus on addressing cultural differences between western and Confucian students, the underlying assumptions regarding this debate are perhaps questionable – at least on the basis of this study. The Irish students' scores did not reflect the espoused educational philosophies of the country's educational institutions and ask serious questions regarding the students' values. The fact the issue appears to centre on surface learning strategies, as opposed to surface learning motivation, indicates that the problems can be addressed (Table 6). After all, it is perhaps much more difficult to address intrinsic motivational issues than study tactics. Drawing on Figure 1, there are two areas that need to be examined by HE institutes, namely (1) the student's orientation towards learning and (2) the learning context.

5.1. The student's orientation towards learning

As stated, an objective or hope of educationalists in HE is that students engage in deep learning (Wingate 2007). However, there appears to be a culture of surface learning in the secondary (pre-HE) educational system in Ireland which is at odds with the HE aim of developing critical thinking. While researchers have stressed the importance of using effective transition-facilitation methods in order to ensure student retention and progression, there still appears to be a gap between students' and HE educationalists' expectations in terms of the depth and breadth of study required in some countries (Byrne et al. 2012; Gamache 2002; Wingate 2007). Although HE institutes may provide support to students in developing study skills such as academic writing and referencing, there is perhaps a need to address a more fundamental issue – the personal epistemological beliefs underlying surface

learning approaches (Cano 2005; Gamache 2002; Rodríguez and Cano 2006; Wingate 2007).

Epistemological beliefs are those concerning the nature and scope of knowledge, including definitions of knowledge, how knowledge is constructed and how it is evaluated. According to Schommer (1990), personal epistemology may be represented in terms of five dimensions, reflecting beliefs about:

- the organisation of knowledge: from simple and compartmentalised to complex and highly integrated;
- the certainty of knowledge: from certain and absolute to tentative and evolving;
- the source of knowledge: from handed down by omniscient authority to derived by reason;
- the control of knowledge attainment: from 'ability to learn is innate and fixed at birth' to 'ability to learn is acquired through experience';
- the speed of knowledge acquisition: from 'learning is quick or not at all' to 'learning is acquired gradually'.

Learners with simple epistemological beliefs view knowledge as discrete, absolute, passed down by authority, acquired quickly or not at all, and feel that the ability to learn is fixed at birth; learners with sophisticated epistemological beliefs see knowledge as complex and tentative, and believe the source of knowledge comes from active engagement with, rather than passive absorption of, learning material (Schommer 1994).

Research suggests that such epistemological beliefs are linked to learning cognitive processes as well as learners' active engagement and persistence in learning (Cano 2005; Rodríguez and Cano 2006; Schommer 1994; Tutty and White 2005). Furthermore, in studies on the nature of the learning approaches of students at Spanish secondary (pre-HE) schools and universities, researchers found that naive epistemological beliefs are strongly linked to surface learning (Cano 2005; Rodríguez and Cano 2006).

However, while epistemological beliefs may be strongly held, they are malleable (Norton and Crowley 1995; Schommer-Aikins 2004; Lahtinen and Pehkonen 2013). Therefore, naive epistemological beliefs of students need to be challenged at HE institutes. While some educationalists have argued that this process should develop 'organically' through the delivery of their respective subjects (Gamache 2002), it is contended here that a more systematic approach is needed given the centrality of this area to the learning process (in any case, subject-specific efforts can complement broader institute and course-wide approaches). Such an approach could be part of the process of induction to the HE institute and may be effectively delivered through interactive workshops (Cocking 2009; Norton and Crowley 1995). Of course, the specific needs and profiles of students will vary according to

the respective institutes, and any induction process should be tailored accordingly. This may be particularly true when providing such induction to students from countries whose language and cultural practices may differ considerably (for example Chinese students in Ireland).

5.2. The learning context

Little success will be achieved in encouraging the development of deep learning if the learning environment in HE institutes does not encourage and reward deep learning practices in assessments. A key question, then, is: 'are deep learners achieving higher grades than surface learners?' To help achieve this goal, HE institutes need to examine the relationship between learning approaches and grades achieved, as this illuminates current practice, and this research should be conducted before any induction support systems (as described above) are introduced.

On this note, it should not be assumed that HE instructors themselves hold complex epistemological assumptions regarding their respective subject areas (Buehl and Fives 2009; Cano 2005). An institute-wide debate needs to take place on the issue of deep v. surface learning so that greater awareness of the issue is developed. In this way, the input of educationalists can assist HE management in developing a deep teaching–learning philosophy that becomes embedded in routine pedagogical practices. Finally, on a broader level, there is perhaps a greater need for communication and cooperation between the different educational authorities that manage the pre-HE and HE education systems in the promotion of complex epistemological principles. Such a move would help students develop and maintain complex personal epistemological beliefs consistent with deep learning approaches.

6. Conclusions

At a time when educationalists face an increasingly international student body, this research adds to our knowledge base regarding the learning approaches of students from different countries. While the very notion of drawing generalisations regarding national cultures and cultural clusters is problematic, the use of student nationality as a variable in research may unearth important issues. An example of this is the highlighting of the apparent popularity of surface learning strategies such as rote learning amongst Irish students in higher education.

In any case, irrespective of the student's background, the issue of developing (through support systems) and rewarding (through assessment) deep learning approaches is of fundamental importance to HE institutes. It is contended that potential problems concerning institute resources in developing 'deep learning programmes' need to be viewed in the context of the mission of the public HE institute – that is, to add value to its arguably most important stakeholders: the students and society.

Notes on contributor

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