

## The Spiral Curriculum in Higher Education: Analysis in Pedagogic Context and a Business Studies Application

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### Abstract

*This paper explores the spiral curriculum with particular reference to higher education and within the business related degree programmes. An initial literature engagement highlights sources which are key to understanding the spiral curriculum in university education. Further literature analysis critically examines and demonstrates the higher education consistency of the spiral curriculum with other university relevant pedagogies/andragogies namely the longstanding cognitive domain taxonomy and the developing threshold concepts paradigm – including and especially in context of business related studies. Drawn in part from the literature analysis, this paper then puts forward a typology for classification of the revisiting aspect of the spiral curriculum, here termed DUPE (Deployment, Underpinnings, Practice and Examination). The sense-making and simplifying value of this typology is indicatively explored, alongside the above stated paradigms, through primary research interviews with a selection of core module (marketing, finance/accounting, people management/ organisational behaviour) business tutors from a UK higher education provider. Despite sample limitations in **terms of single institution focus and lack of research on students' experience, findings** strongly indicate that; a) the spiral curriculum revisiting process fits within effective business degree delivery; and b) neither the DUPE typology nor the threshold concepts paradigm supersede the cognitive domain taxonomy as a simplifying sense-making depiction approach of that revisiting, but that both add explanatory value as to the way in which the spiral curriculum revisiting takes place.*

Key words: *Spiral Curriculum; Business Degrees; Threshold Concepts; Cognitive Taxonomy.*

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## Introduction

The notion of a spiral curriculum as an approach to course syllabus design and necessarily teaching, learning and assessment methods, has been known to education literature at many levels for over half a century now. With the architect being Jerome Bruner in 1960, essentially it involves the encounter and the revisit of specific content, e.g. concepts at stages in a course – but where the revisit includes a step up in rigour or depth with regard to that content. Despite its having an intuitive education value, the spiral curriculum has not received comprehensive attention and application; it is noted that a major education publication carried an article entitled *What is a Spiral Curriculum? almost forty years after Bruner's work (Harden and Stamper, 1999)*. In terms of sizeable pedagogic application, it is fair to say that the spiral curriculum has **been focussed at levels below higher education e.g. children's schooling including in core subjects like mathematics (Cowan, Morrison, and McBride, 1998)**. Furthermore, within higher education, though counter-examples exist and are covered below, very little of the spiral curriculum treatment has been set in the field of business and management education, with the bulk of applied coverage being in the areas of medical science and health practice education (Stoller, Taylor, and Farver, 2013).

This study seeks to contextualize the spiral curriculum in relation to existing HE relevant pedagogies and then in relation to business degree curriculum design, teaching, learning and assessment, with a view to more sharply ascertaining its use and value especially in the business higher education field.

This paper goes forward with a literature based analysis that looks at the spiral curriculum in pedagogic context, notably in critical comparison with two major established education and curriculum paradigms, namely the cognitive taxonomy, and threshold concepts, with a view to assessing consistency and indeed contradiction. The literature based analysis then closes in on existing spiral curriculum applications and considerations in the business higher education field for critical review. Following literature analysis, the study puts forward a typology for classifying ways in which the revisiting of a spiral curriculum can come through in business higher education. This typology is then investigated, alongside the cognitive taxonomy and threshold concepts paradigm, though not tested, by an exploratory qualitative case study of business degree faculty and their experiential reflections on revisited concepts in their individual business sub-fields e.g. marketing, finance and people management.

## Literature Based Analysis

The spiral curriculum as set out by Bruner (1960) has its roots in the Constructivist learning framework whereby the start point should ideally be something the learner knows about or can relate to in some way. Equally critical is the idea that all content can be presented in a sufficiently simple way that the earliest learner, i.e. child can achieve a form of understanding of it. In context of the real underlying complexity of much subject matter this notion of sufficient simplicity might also constitute superficiality.

The most well-known depiction from Bruner (1960) of the change in nature of content understanding through climbing in the spiral is as follows: from Enactive, i.e. manipulating/interacting with objects, through Iconic, i.e. manipulating images of the objects or phenomena, to Symbolic, i.e. manipulation of representations of the actual objects or phenomena. It is argued here that this learning change is likely to be undergone through maturing within the school system, including the appreciation of the conceptual and metaphorical, i.e. most applicable to stages in childhood, which Bruner in fairness does focus on a good deal.

A reflection on spiral progression in Bruner that is more plausible for the higher education student experience is that highlighted in Harden and Stamper (1999) in which Bruner depicts a spiral process where initially ideas/concepts are introduced and mastered (or acquired) in a rather intuitive way, then revisited for a more formal/operational understanding with some connection to other knowledge – which then, following mastery/acquisition – goes towards stronger formal/operational rigour, plus abstraction and comprehensiveness, with an end state (top of spiral?) representing mastery/grasp of a large body/structure of knowledge and understanding. The notion of linking and integration going with spiral progression is important to note here – and has bearing both for the pedagogic context comparative study of the paradigm plus the typology of business management application later in this paper.

In terms of features and learning merits of a spiral curriculum, they are well set out in subject transferable terms by Harden and Stamper (1999). The most evident aspect is that topics are revisited such that specific learning – without too long a space period – is reinforced at least once, if not more so. A central aspect of the spiral curriculum is that the revisiting involves increasing levels of difficulty, moving from the relatively simple to the more complex, thereby enabling achievement of higher level objectives at the later revisits. Harden and Stamper (1999) note the scope for building new more rigorous knowledge onto prior knowledge. They also note that this progressive revisiting can mean that concepts acquired in earlier learning/phases can be given practical application in specific scenarios in later phases. The potential for earlier understanding to form the building blocks for subsequent **teaching in the spiral curriculum is made explicit by Harden and Stamper's (1999)** assertion that new learning is related to previous learning and that the spiral curriculum has logical sequence whereby order can be brought to movement through increasingly complex content.

A related but broader and equally vital point from Harden and Stamper (1999) is that the revisiting aspect of the spiral curriculum enables integration of themes and concepts from earlier learning. This can relate to framework building and practical application, as well as other aspects including comparison. Essentially, this gives advantage over non spiral curriculum courses especially where themes are covered in a stand-alone separated way.

Understandably given these argued benefits, Harden and Stamper (1999) see the spiral curriculum as valuable in helping to achieve the outcome of the more competent student. A point to note is that their analysis – specifically on medical practitioner education – relates to vocational/professional learning where theory practice interaction and integration of different competencies is vital for the student to reach their desired fitness for role destination.

A challenging reflection is that for all these spiral curriculum benefits to come through, educators and teams thereof need to plan courses so that the theory application steps make sense and the concept building processes take place in a logical and plausible sequence. A less considered course syllabus design, albeit assigned across different progressive levels, will not necessarily bring the spiral curriculum gains referred to above.

An eminent criticism on the spiral curriculum albeit from authors who nonetheless advocate its use (Coelho and Moles, 2015) relates to aligning student perceptions to how the curriculum is being set out. Specifically, they raise the question of how students can achieve clarity on where their learning should stop or be deemed sufficient, at a particular stage in the spiral, without clear knowledge on the revisiting point. While the broad point on expectations alignment and curriculum clarity is valid, it is argued here that in higher education, students frequently undertake reading and learning beyond what is required in the current stage of a course and that is often

captured in class discussion – enabling tutors, usually encouragingly, to clarify when a student is going into the next level. This is especially likely to be so in undergraduate programmes with longitudinally running themes e.g. marketing, finance or people management (introductory, intermediate, advanced or strategic) on a business degree course.

Turning to consideration of the spiral curriculum in context of other educational paradigms, it is noted that the cognitive taxonomy from Bloom, Engelhart, Furst, Hill and Krathwohl (1956) presents language to depict increasingly challenging treatments of material on a course. The seminal original terms are: Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation. It is fair to say that among the more challenging treatments, Analysis and Evaluation necessarily involve scope for criticality. An initial point to note is that in at least one teaching and staff development professional magazine paper (Singleton, 2018), the spiral curriculum is depicted as an applied combination of the spaced curriculum and the cognitive taxonomy where the former involves gapped revisiting of topics without any change to rigour or introduction of additional learning. While this may be an oversimplification, it is at least an indicative practical sign that the spiral curriculum and cognitive taxonomy are compatible in broad terms.

Looking closely at the two paradigms together, it is first noted from above that the initial learning in the spiral curriculum is a form of understanding, in connection to **the student's existing knowledge. As such, compatibility with the Bloom taxonomy may** require integration of remember/describe/knowledge with comprehend/understand in the latter framework. It is worth noting here that in another work covering the spiral curriculum, Bruner (1975) distinguishes understanding at different spiral stages from an intuitive treatment at the outset to a more formal higher standard treatment at a later stage. Moving on in the cognitive taxonomy, the next term, apply, can readily connect with next stages in the spiral curriculum in terms of practical, perhaps evidence based, application, of the newly understood conceptual material. The next cognitive taxonomy term, analysis, is well noted in the teaching profession literature (Petty, 2009) to mean understanding of material including its component parts. This can be neatly connected to the later understanding in the spiral curriculum in terms of formal or operationally rigorous grasp of what was initially superficially understood or intuitive. An economics example here could be product demand, where understanding of the inverse relationship with price may intuitively fit with experience, application to price/sales data may be the next stage – and then appreciation of the determinant underpinnings, e.g. marginal utility or indifference curves/budget lines could be the more formal/operational later understanding aimed for up in the spiral.

The next stage in the original Bloom taxonomy is termed synthesis. Here again there is a ready consistency with the spiral curriculum noting the Bruner (1960) depiction of later phases involving mastery/grasp of the connexity and structure of a body of knowledge, and the Harden/Stamper (1999) depiction of the beneficial integration of relevant learning being feasible through the spiral curriculum.

Lastly in the original Bloom taxonomy there is evaluation. There is nothing in the spiral curriculum stage depictions that explicitly corresponds with this; perhaps the **closest is Bruner's (1975) reference to ultimate mastery of a topic or subject in its full** generative power. Nonetheless stemming from the above it may be seen to follow that once a student understands a framework in its component parts, in its application to evidence and in terms of relevant integrativity, that student is then – and perhaps only then – equipped for critical evaluation in that field. As such a spiral curriculum, especially in higher education, provides the capacity for critical evaluation in the subject; it just remains essential that course teams include assessments to check for that capacity.

A final point on the practical consistency between the spiral curriculum and the cognitive taxonomy is that the above concern about expectations misalignment in the spiral curriculum (Coelho and Moles, 2015), can further be resolved by using level appropriate taxonomy language in the published learning outcomes of the modules delivered at each stage.

Moving to consideration of the spiral curriculum in threshold concepts paradigm context, it is noted that the latter, as set down originally by Meyer and Land (2003), ascribes features to concept content definitive of the ways of thinking and practising in a field, with these being, transformative, integrative, boundary setting, discursive and counterintuitive/troublesome, with the concept acquisition process often involving traversal of a liminal space on the part of the student, and movement through a portal to achievement of those field specific ways of thinking and practising. Given these profound criteria it would seem that the ideal learning process on acquisition of such content be quite comprehensive, i.e. **appreciation of a concept in its 'thresholdness' and the inherent portal crossing should not be a staged or protracted process.**

**Notwithstanding Cousin's (2006) allowance and prediction of to and fro messy** movement across conceptual terrain, this really should not translate into liminal space residence say from level 4 (freshman) to level 5 (sophomore) i.e. several months, for the student as regards specific learning. As such, the requisite learning progression with regard to threshold concepts would seem to be more emphatic in the current period than the spiral curriculum (and its initial stages) would cater for or allow. This apparent **inconsistency may underlie Kinchin and Cabot's (2012) broad critical point contrasting** the argued smoothness of the spiral curriculum with the reality of jumps as depicted in threshold concepts with regard to the learning process, including in higher education. While no writer on the spiral curriculum argues that its gradient should be constant, there do seem to be initial grounds for suspecting conflict between the spiral curriculum and the threshold concepts paradigm for learning and course design in practice.

The extent of perceived inconsistency between the spiral curriculum and the threshold concepts paradigm is argued here to be diminished through consideration of threshold concept refinement work on the paradigm, relating to trajectories of student learning and categories of concept including those preceding threshold concepts (Davies and Mangan, 2006, 2007). In their work on different types of conceptual change (Davies and Mangan, 2007), they distinguish between basic concepts, discipline threshold concepts and modelling/procedural concepts, with the middle type being the definitive threshold concepts. Basic concepts are portrayed as precursors, providing ways of categorising phenomena that are necessary for the deployment of threshold concepts. They are further depicted as newly met concepts transforming understanding through integration of ideas from the discipline with personal experience. Discipline threshold concepts are depicted as those that transform and integrate subject understanding through acquisition of theoretical perspective. Modelling/procedural concepts are portrayed as those, once acquired, enable the construction of discipline specific narratives and arguments and thus ways of practising. This refinement work shows the threshold concept learning process as more sequential and divisible than might otherwise be perceived. Further the three typology elements correspond much more closely to the Bruner (1960, 1975) spiral curriculum stages of initial intuitive concept grasp, formal/operational understanding and content connection, through to command of a structure of subject knowledge. The practical correspondence is further **evident in the reference in Davies and Mangan (2007) to students' partial understanding** of concepts, warranting revisited applications in different contexts, and in the reference **in Davies and Mangan (2006) to students' acquisition of threshold concepts** helping them to integrate and reinterpret their previous building blocks learning.

The broad notion of inconsistency between the spiral curriculum and the threshold concepts paradigm, based on the nature of learning progression, is asserted here not to be a robust one.

A more specific inconsistency point from Kinchin and Cabot (2012), argued as relevant for professional education, links to the idea that theory-practice connections can constitute threshold concepts while in a spiral curriculum on such courses, the conceptual and the experiential may occur at different stages or even constitute different strands of a spiral. The assertion here is that in a spiral curriculum the key connections may not always occur, or at least not come through in the portal traversal ways of thinking and practising discovery form of threshold concepts acquisition. In so far as this is valid, it is indeed significant for business management courses because as Wright and Gilmore (2012) note, the theory-practice nexus is often at the heart of threshold concept acquisition in the field.

While it is evident that theory engagement and application may occur at different stages on a spiral curriculum, it is not definitive that this is so. Further, consistency with the Bruner (1960, 1975) stage depictions can be achieved through initial intuitive engagement with a concept, followed by concept integration together with evidence based application at a later stage. This could very often provide a theory-practice nexus consistent with threshold concept acquisition. For example, in business environment, an initial appreciation of the specific strengths of a well-known global company, e.g. brand, innovations, could work as intuitively linked understanding at the start of a business degree spiral and as encounter of basic concepts in the threshold concepts classification. A next stage theory-practice portal experience, in line both with progress in a spiral curriculum and with discipline threshold concept acquisition, could come through deployment of company strengths into the OLI (Ownership-Location-Internalisation, Dunning, 1981) model of foreign direct investment as evidenced or revealed in an **applied case study of that company's investment into another country. Of course, such** sequencing to ensure theory-practice transformative learning requires curriculum planning but it is in no way beyond the scope of the spiral curriculum. Integrative theory-practice work in business management can operate with varied degrees of scaffolding - a noted approach in constructivist learning (Stanier, 2015). For example, in the above case, company analysis could be followed by country/region analysis to lead students towards integrated OLI. Such work can also make use of variation to assess learning – a noted process associated with threshold concepts (Davies and Mangan, 2007). In the above case this could be achieved by looking at different firm and country examples and different forms of FDI. This potential for effective theory-practice nexus use in business management studies is also associated with the spiral curriculum by Bailey, Oliver and Townsend (2015). While their practicalities apply to a capstone module, they note its feasibility for any business modules seeing to integrate theory and practice. Once again, through reasoning, and appreciation of practitioner applied literature, it becomes clear that the asserted grounds for perceiving inconsistency between the spiral curriculum and threshold concepts learning are not robust.

In view of the notion that a business management/business studies degree course is an interdisciplinary vocational programme across related themes like marketing, organisational behaviour and finance – the spiral curriculum may have further value. As noted by Mado and Kinchin (2011) and Master and Gibbs (2007) in medically related education, a spiral curriculum that repeatedly exposes the students to some of the same concepts in different thematic contexts is likely to enhance interdisciplinary learning and the connection between different facets of the same problem. It is recognised here that such concepts applicable to context variant revisiting, whether in business or other courses – are likely to be classed as threshold due to their evident integrative facility.

## Reflections and Direction of Further Analysis.

Indications from the critical analysis of relevant literature are that the spiral curriculum can be very beneficial in higher education including business management and that any published concerns really amount to notes for careful planning. The

contextual discussion in relation to other key higher education relevant pedagogic paradigms has shown the spiral curriculum to be essentially consistent, compatible and not in conflict with these.

What the literature study has also done is give shape and direction to notions and themes of how concepts can be revisited effectively especially in a higher education business management curriculum. Tentatively a typology of concept revisit types in higher education business is put forward here as follows:

*Typology:* DUPE - Deployment, Underpinnings, Practice and Examination.

*Deployment:* Use of the revisited concept as a building block, or in combination with further content, to construct a new concept, conception, theory, framework or piece/set of conceptual equipment.

*Underpinnings:* This is the converse of Deployment in that the revisiting involves **'getting behind' the original concept, looking at its causal ingredients, determinants** and/or assumptions explaining that theory/concept.

*Practice:* This means revisiting in the form of use of the initial concept/theory as a tool for sense-making or critical analysis of something other, e.g. government or company in an applied setting.

*Examination:* This is directionally opposite to Practice in that here the revisiting involves critical analysis of the theory/concept itself, on logical/intuitive/plausibility/applied grounds.

It is noted that frequently, these different forms of spiral revisit may occur in close conjunction with each other.

With business management being a vocational or professional degree subject, and the very evident importance of the theory-practice nexus, it may be wise to expect deployment and practice to occur in combination when subjects are revisited in a spiral fashion.

With business management incorporating scope for both theory criticality and organizational criticality, it is likely that a concept will be revisited both for practice and examination purposes within the same applied session.

The remainder of this paper is an exploratory study of how concept revisiting is done in practice within key thematic areas of business management across a teaching team at a UK degree provider institution. In particular, this is done with a view to assessing the usefulness of the above typology alongside the other pedagogies/andragogies mentioned.

## Aims and Methods

The aims of the primary research of this piece are to conduct:

- An exploratory study of the nature and form of concept revisiting in business management degrees through progressive levels.
- An indicative study of the sense-making and/or simplifying value of the DUPE revisits typology in business management degree teaching.

The primary research methods are as follows:

An embedded case study, chiefly consisting of interviews across key faculty in a business department of a UK degree provider. A critical case sample of one respondent per designated business degree curriculum module/topic area: Marketing; Finance and Accounting; People Management/OB/HRM.

Interview questions relate to concepts revisited within these themes on a business degree – and how the revisit relates to initial coverage. The questions are open on this aspect, not structured in line with the typology because such questions would potentially act as prompts to the participants. The questions, pursued in semi structured interview with the respondents, are shown in appendix one.

This study is indicative and in no way attempts to test, verify or triangulate the academics' answers, e.g. through primary research of students or analyses of student output. The faculty respondents are assured of this ahead of their interviews. They are also given the ethical assurances of anonymity of name and institutional affiliation – plus confinement of use of findings for scholarship article purposes.

## Presentation and Analysis of Findings.

**Presented in indented text are the business tutors' answers to the thematic questions four and five from the semi structured interview as shown in appendix one.**

The Finance/Accounting Tutor:

*Early on we introduce simple business documentation, in particular sales, purchase and nominal ledgers – the existence of these, what they look like and some simple data entry based on these in Sage.*

*We revisit these especially in the later Financial Auditing module. The revisit explains how you would audit said ledgers in the system. Class time and assessment looks at business case studies using these, how they synthesise in audit and how they interact. Also how they help analyse and evaluate company issues relating to auditing and ledger, including company problems. The learning is done so that the application can be carried out across all firms and sectors.*

*We also look at these methods in context of the auditing organizational environment, i.e. what managers say, and in context of organizational control procedures – the detail.*

In terms of comment, firstly the above can effectively be linked to spiral curriculum revisiting as depicted by Harden and Stamper (1999) both in terms of initial learning being given practical application in specific scenarios in later phases, as well as there being later integration of themes and concepts from earlier learning.

In relation to the asserted typology here and the other pedagogies considered, the following can be said. While the introductory concepts are being taken forward for use, there is no further inspection of their underpinnings in the later revisit. As such the Underpinnings form of revisit is not present. It is also evident that while being taken forward into a more complex setting, the initial concepts are not being combined with later concepts to build a more complex model or method. As such it seems the Deployment aspect is not present. Further, while interaction between the concepts/methods is referred to, as is evidence/example based application – this is not to critique the methods nor to look at their relative merits. As such, Examination as depicted in the typology is not taking place.

What is certainly happening is integrative or synthesized application of the concepts with definite scope for critical analysis – in essence diagnosis – of companies and their performance/situations. What is also happening is contextual application of the concepts in broad terms – organizational environment – and narrow terms – procedural detail. A final aspect evidence is that there is variation in this application across organizations and sectors.

In terms of the asserted typology, it can be said that Practice is the prevailing form of revisit here, i.e. application of concept(s) for analysis – including critical – of something other – namely companies (and their accountants) in this case.



By way of criticality – **assignation merely of the term 'Practice'** to what is going on here seems to miss a lot of information. In pedagogic terms within Practice there is clearly also synthesis, integration, critical analysis, contextual application and variation. A closer consideration also indicates that the Practice is also aiding derivation of discipline specific narratives, i.e. company diagnostics from an accounting point of view. As such the Modelling/Procedural level of threshold conceptual change is happening. While simplifying explanatory value is an asset to a framework/theory, the DUPE typology here does seem to be oversimplifying the revisiting with regard to some aspects of finance/accounting in business degrees. What can also be said is that the threshold concepts paradigm and the levels of transformation/use of variation theory augmentations of that framework seem to be adding to the cognitive taxonomy in terms of sense-making of the revisit.

The HRM/OB Tutor – when asked with regard to OB:

*In the initial OB relevant module we look at Personality, briefly over one week – with a descriptive coverage on the role of Freud and Jung. No depth here – but the students know this will come again.*

*We look at these theorists Freud and Jung with more depth in the later OB module Contemporary Issues in Management. More complexity; more time. This includes critical analysis of the theories plus how they are used in HR, particularly the relevance of Jung in psychometric testing.*

Here, revisit in line with the Spiral Curriculum is taking place in terms of the initial described content being flagged for revisit, and then later being critically discussed and applied in a particular context.

An initial point here is that the revisit fits most explicitly to the cognitive domain and critical analysis of previously introduced theories. In relation to the asserted typology in this study – this critical analysis corresponds quite clearly to the term Examination.

With regard to the use of Jung in psychometric testing, this could most easily link to application in the cognitive domain and to Practice in the asserted DUPE typology. However, in so far as essentials from Jung are fed into building an established framework for psychometric testing – one could also say that Deployment from the DUPE typology is taking place as well. Furthermore, in that theory from the field is being used to make a sophisticated approach to assessing material – in this case job applicants – again the process of discipline specific narratives in line with the conceptual change depiction Modelling/Procedural from the threshold concepts paradigm is evident.

The HRM/OB Tutor – when asked in regard to HRM:

*In the module HRM and Employment Law we look at aspects like recruitment and selection, often now left to line managers – in terms of functional HR – that is – how HR specifics from company policy are implemented when carrying out aspects like R and S.*

*These aspects are looked at again later in the module Strategic HRM. Here we take on a more critical approach in terms of strategically looking at why these specifics are included and set down in company HR policy – and how this fits with overall company strategy.*

Here there is a spiral curriculum process where introduction and practical application happen close together at one level of study – but then later the same themes are looked at with a very different perspective. This is not just a move from the operational to the strategic which often happens upwardly through the business curriculum but also moving to critical challenge of these themes.

Again, matters can most readily be seen in the cognitive domain context with moves from application to critical analysis – even evaluation – and the HR to whole

company strategy linking being the beginnings of synthesis. Consideration in the DUPE typology context is interesting. The movement from how, on policy implementation, to why, on the policy decision aspects themselves, strongly suggests a move from early stage Practice to later stage Examination of the same material. Furthermore, a little more tentatively, the investigation of how HR policy fits into overall company strategy is indicative of Deployment from the typology in terms of how one policy aspect fits, or fails to fit, into a bigger overall framework. In the threshold concepts context, matters are open to interpretation here. In so far as an aspect like recruitment and selection is a **threshold concept 'way of practising,' the move from functional to strategic perspective** on the same process could be evidence of variation theory being applied. Another depiction could be that the move to thinking strategically is itself a discipline level of threshold conceptual change in business studies. The two views are not incompatible.

The Marketing Tutor:

*We first visit SWOT simply in terms of what it is, but also apply the themes to an organization as part of a marketing plan.*

*When we revisit SWOT we critique the model but also use it for conversion strategies for organizations, that is mapping and converting weaknesses to strengths and threats into opportunities.*

*We first visit the Segmentation, Targeting, Positioning model in terms of what it is and using it to derive suggestions for an organization marketing plan.*

*Later on the STP model is critiqued but it is also used to critique organizations, i.e. the organization in relation to STP.*

***We introduce the Ansoff's Matrix and use it to identify the nature of organizations' marketing plans, i.e. is it New Product Development, Market Development, Diversification or Penetration – really how the firm's activities fit into Ansoff.***

*Later Ansoff is used for organization marketing strategy in terms of making recommendations based on the four elements. But we also compare and combine Ansoff with the other models, make use of them, to reach strategic recommendations for organizations.*

Here there are a number of spiral curriculum revisiting processes evident. With regard to SWOT, initial engagement and simple application is followed later by critical analysis of the model and its augmented application for strategic change for organizations. With regard to STP, initial awareness and use for suggestions in marketing plans, is followed by integrated application to critique organizations. With **regard to Ansoff's matrix, initial appreciation and example identification of components** of the model is followed by integrated use to critique and make recommendations for organizations. Finally, across all three models there is comparison and combination to derive recommendations for organizations.

Analysing with reference to the further pedagogic themes in this study, the following can be deduced.

The SWOT treatment can be linked to cognitive taxonomy progression in the sense that knowledge/understanding and simple application is later followed by critical analysis of the model itself as well as strategic use. The DUPE typology has bearing here to clarify initial Practice with the revisit involving Examination as the criticality is of the model itself. In so far as the derivation of conversion strategies constitutes an enhanced augmentation of the original SWOT model to build constructive frameworks, there is also strong indication that Deployment from the DUPE typology is taking place. Most evident is that the SWOT based augmentation and mapping for company conversion strategies constitutes a discipline specific narrative capability, as in the threshold concept literature, being developed and used.

The STP treatment again fits the cognitive taxonomy progression with knowledge and basic application again being followed by critical analysis of the organization using STP. Again, the DUPE typology has clarifying value because this time the organization

criticality constitutes Practice rather than Examination. Further, use of the constructed STP model to critique organizations again represents a discipline specific narrative capability.

It should be noted that while both SWOT and STP are integrative models, the intrinsic appreciation of this, as something clearly instructed in the teaching, does not itself constitute synthesis from the cognitive taxonomy.

The Ansoff Matrix treatment fits the cognitive taxonomy initially in terms of knowledge, as well as the identification of model components in the early applied work **since 'identify' in its introductory form fits the knowledge cognitive stage. The later** revisit using Ansoff to critique the organization and derive recommendations again fits critical analysis in the cognitive taxonomy but also Practice from the DUPE typology and definitely discipline specific narrative from the threshold concepts paradigm.

Crucially, the further reference to combination of the three models for strategic recommendations to organisations, must indeed be recognised as synthesis from the cognitive taxonomy and very likely critical evaluation. In relation to the DUPE typology the term would still merely be Practice – however advanced. With regard to the threshold concepts paradigm, the depiction would still be discipline specific narratives.

## Overview Discussion in Context of Limitations.

The respondent sample of this study is **very small, i.e. one HE provider's** business school and just three tutors. As such its representativeness cannot be assured as a base for verdicts on relevant paradigms. Further, the absence of primary research with students indicates that the evidence may not necessarily reflect how students learn or how they relate later to previous learning. Nonetheless, the fact of the focus being on the active vocational modules of a business degree course, constituting themes that are almost certainly ever present and longitudinally recurrent on business programmes, does give the research meaningful indicative bearing. The initial point to draw is that the primary evidence shows existence of spiral curriculum consistent revisiting in the approach of academic staff on at least one business degree programme in the UK. Further overview points include the following:

On the evidence gathered, it is clear that neither the DUPE typology asserted, nor the threshold concepts paradigm and its refinements, supersede the cognitive taxonomy in terms of sense-making of content revisit in relation to initial engagement. In all stages and in all themes covered, the Bloom taxonomy has something substantive to contribute about that revisiting. It is also the case that the DUPE typology while having much to contribute on the evidence gathered, does not at all seem to be bringing a new simplifying explanatory framework for understanding of spiral curricula in business higher education.

Having said the above, the division between Practice and Examination in the typology does seem to add understanding to the cognitive domain notions of critical analysis and evaluation in business studies since one clarifies use of subject concept/method to critique organizations while the other clarifies criticality of the subject concept/method itself. The fact that both forms of criticality are quite prevalent in the albeit small sample of business degree teaching explored does indicate value in this aspect. The building upon and augmentation of initial learning to construct further frameworks for such analysis does also suggest that Deployment from the asserted typology has some role to play.

More emphatically there can be little doubt that the threshold concepts depictions of conceptual change add something to the cognitive domain taxonomy depictions as students are taken further through key thematic areas in a business **degree course. What gives greater subject orientable clarity to Bloom et al's (1956)** critical analysis, evaluation and synthesis are the theoretical perspective acquisition and

the discipline specific narrative notions from the threshold concepts levels of conceptual change analysis.

A final limitations point here is that the primary research does not closely pursue the ways in which concepts later revisited are first engaged by the business tutors – including whether and how that engagement might relate to constructivist learning approaches. As such, the fullness of application of the Bruner depicted spiral curriculum, even in this small business school case sample is not comprehensively investigated in this study.

## Conclusions and Recommendations for Further Research

Despite the primary research limitations, it is fairly evident from this study that paradigms and typologies in **addition to that in Bloom's cognitive domain can have value** in course designer and tutor depictions of spiral curriculum advanced revisiting of content on business degrees. Tentatively the DUPE typology here and more clearly, aspects from the still developing threshold concepts literature, have a role to play. Nonetheless, there is no basis in findings here for thinking that any paradigm is more effective than the cognitive taxonomy for presentation and explanation in this regard. It is recommended here that further research involve a bigger sample of business schools and while some recurrence of elements above may be found, the research should also look at teaching on the more contextual themes of business programmes, e.g. business law, economic environment and sustainability, not least because some have longer standing academic heritage than core business and others more closely pertain to ethical matters. It is also recommended that further research look at how concepts running through business degree courses are first approached by tutors; in this way, orientation to the constructivist learning aspect of the spiral curriculum – noted above as important – can be explored. The key recommendation for further research however, is some form of triangulation, or at least exploration, regarding how learning of revisited material is experienced and viewed by business students themselves.

## References

- Bailey, J., Oliver, D., & Townsend, K. (2007). Transition to Practitioner: Redesigning a Third Year Course for Undergraduate Business Students. *Journal of Management and Organization*, 13(1): 65-80.
- Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). *Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook 1: Cognitive Domain*. New York: David McKay.
- Bruner, J. (1960). *The Process of Education*. Cambridge, MA. The President and Fellows of Harvard College.
- Bruner, J. (1975). *Entry into Early Language: A Spiral Curriculum*. Swansea, University College of Swansea.
- Coelho, C. S., & Moles, D. R. (2016). Student Perceptions of a Spiral Curriculum. *European Journal of Dental Education*, 20: 161-166
- Cowan, P., Morrison, H. & McBride, F. (1998). Evidence of a Spiral Curriculum using a Mathematical Problem-Solving Tool. *Interactive Learning Environments*, 6(3): 205-224.
- Davies, P., & Mangan, J. (2007). Threshold concepts and the Integration of Understanding in Economics. *Studies in Higher Education*, 32(6): 711-726.
- Davies, P. & Mangan, J. (2006). *Trajectories of Students' Learning: Threshold Concepts and Subject Learning Careers*. In Annual Conference of the Society for Research in Higher Education, Brighton, England.

- Dunning, J. (1981). *International Production and the Multinational Enterprise*. London. George Allen and Unwin.
- Harden, R. M., & Stamper, N. (1999). What is a Spiral Curriculum? *Medical Teacher*, 21, 2: 141-143.
- Kinchin, I. & Cabot, L. (2012). *Threshold Concepts and the Spiral Curriculum: Complementary or Conflicting Ideas?* Fourth Biennial Conference on Threshold Concepts: From personal practice to communities of practice, Trinity College, Dublin, 28-29 June 2012.
- Masters, K., & Gibbs, T. (2007). The Spiral Curriculum: Implications for Online Learning. *BMC Medical Education*, 7(1): 52.
- Meyer, J. H. F., & Land, R. (2003). Threshold Concepts and Troublesome Knowledge: Linkages to ways of Thinking and Practising within the Disciplines. ETL Project Occasional Report 4, May
- Modo, M., & Kinchin, I. (2011). A Conceptual Framework for Interdisciplinary Curriculum. *Journal of Undergraduate Neuroscience Education*, 10 (1): A71-A79.
- Petty, G. (2009). *Teaching Today: A Practical Guide*. 4th Edition. Oxford. Oxford University Press
- Stanier C. (2015). *Scaffolding in a Higher Education Context*. Paper for ICERI 2015, 8th International Conference of Education, Research and Innovation, Seville, Spain 16-18 November 2015.
- Stoller, J.K., Taylor, C.A. & Farver, C.F. (2013). Emotional Intelligence Competencies Provide a Developmental Curriculum for Medical Training. *Medical Teacher*, 35(3): 243-247.
- Wright, A.L. & Gilmore, A. (2012). Threshold Concepts and Conceptions: Student Learning in Introductory Management Courses. *Journal of Management Education*, 36(5): 614-635.

## Appendix 1.

The Spiral Curriculum in Higher Education: Analysis in Pedagogic Context and a Business Studies Application

Interview questions

1. Do you teach on a business studies/business management related degree programme?
2. Do you teach at more than one of the three levels of business honours degrees? Please explain.
3. Which of the following would you say is your main thematic area of business degree teaching?
  - Finance/Accounting
  - HRM/OB
  - Marketing
4. Within your main theme could you tell me of 1-3 concepts you cover relatively early in the degree and then revisit later?
5. Taking each concept in turn, could you briefly explain/talk about how the later revisit treatment differs from the initial coverage?

Thank you.