

APPLYING THE POSNER FRAMEWORK FOR CURRICULUM ANALYSIS: THE CASE OF A NATIONAL LEVEL PROFESSIONAL COURSE IN THE HOSPITAL SETTING

Hongwei Wang^a, Boon Leing Tan^b

^aHigher Education Academy, UK.

^bStudent Services Consultancy, Singapore.

Corresponding Email: davidtbl@hotmail.com

Abstract

In 2014, the Singapore government formulated the 2020 Master plan and among the strategies, the Ministry of Health (MOH) has been putting in efforts to enhance retention, training more new nurses and started exploring the possibility to attract former nurses back to the workforce which is the aim of the national-level professional course (NLPC). As such, it is important that the course is continuously improved.

Curriculum ideology often refers to curriculum visions, philosophies, conceptual frameworks and belief systems of educator. However, the curriculum activities may not always support the educators' belief/ vision to fully optimise learning. Thus, the paper seeks to apply the Posner Framework for curriculum analysis as the main methodology to reflect and examine the underlying beliefs and assumptions in the NLPC to gain a sense of the validity of the curriculum assumptions and identify potential blind spots and biases.

The structured approach will look at (1) the curriculum documentation and origins; (2) curriculum proper; (3) curriculum in use and (4) curriculum critique. Among the key findings, it was found that corresponding improvements made along the intakes led to a shift on curriculum ideologies, due to the changing setting, time and learners' needs which may reveal potential null curriculum. Educators' intuition and continuous effort in improvements during implementation may unexpectedly introduce covert/hidden curriculum. Periodical curriculum analysis and review could turn both into overt curriculum/curriculum proper. The paper also suggested a 2-pronged approach to integrate the curriculum ideologies into the overt curriculum.

Keywords: Curriculum Analysis, Curriculum Ideology, Posner Framework, Covert/ Hidden Curriculum, Overt Curriculum.

1. Introduction

Schiro (2012) distinguished curriculum ideology by highlighting the conscious effort in articulating the belief and actual behaviour while engaging in curriculum activities. He also highlighted that many educators are unconscious of the major underlying assumptions of the curriculum. Hence, curriculum activities may not support the educators' belief/ vision to fully optimise learning. This formed the theoretical underpinning to reflect on the underlying beliefs and assumptions in the Return-to-Nursing (RTN) curriculum to gain a sense of the validity of the curriculum assumptions and identify potential blind spots and biases.

Singapore is ranked third silver industry potential countries among Asia-Pacific countries (Siong, 2013). According to national statistics (figure 1), the old-age support ratio in 1970 was 1: 13.5 and 1: 5.4 in 2016. A silver tsunami will hit Singapore by 2030, with an estimated 2 working adults supporting every elderly (Department of Statistics Singapore, 2016). Thus, building healthcare manpower capabilities became a key emphasis for the nation (figure 2). To achieve this, the Ministry of Health (MOH) has been putting in effort to enhance retention,

training more new nurses and started exploring the possibility to attract former nurses back to the workforce.



Figure 1: Old age support ration.

Source: Department of Statistics Singapore (2016)

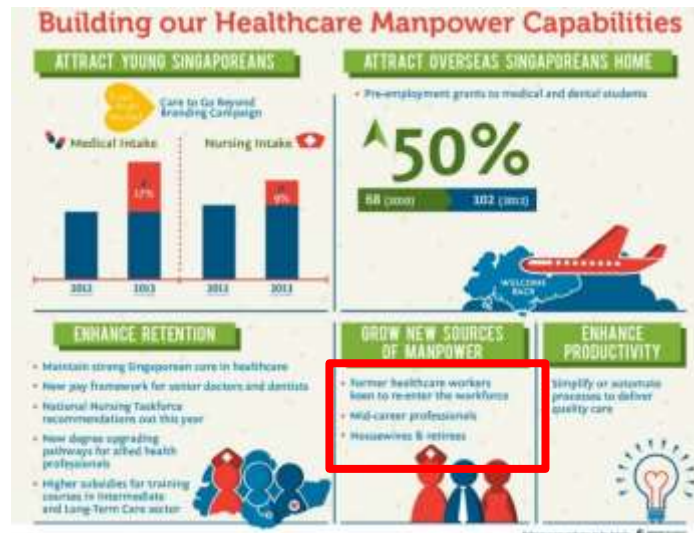


Figure 2: Building our healthcare manpower capabilities.

Source MOH, Singapore (2004)

From knowing very little about the target learners at the beginning of the curriculum creation, till today, where vast experience and understanding have been gathered from the past 4 intakes; a post mortem curriculum analysis is necessary and is an integral part of curriculum development. As the re-accreditation is once every 3 years, this revision, carried out within the 3-year cycle, can enhance any future learning and teaching experience of both learners and educators, which can in turn make the re-accreditation process more fruitful. This is an educational leadership reflection on how individual educators could contribute to the curriculum development. In this paper, the term of curriculum will be defined as the ‘totality of experiences’ of the learners during the RTN course (Kelly, 2009).

Thus, the paper will first discuss the relevant theories for curriculum analysis. Next, the curriculum and learner needs will be analysed and discussed, followed by the proposed improvement to the curriculum. A conclusion will then follow.

2. Relevant Theories for the Analysis of Curriculum Proper

There are limited theories and frameworks for the purpose of curriculum analysis. Among those, the Posner and Jansen & Reddy Framework are perhaps the pioneers in this area.

Posner Framework

Posner (2004) suggested a framework for curriculum analysis (figure 3) using 4 sets of questions to address (1) the curriculum documentation and origins; (2) curriculum proper; (3) curriculum in use and (4) curriculum critique.

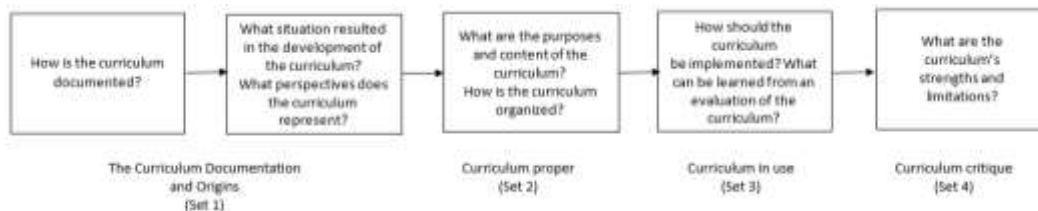


Figure 3: Posner's frameworks for curriculum analysis

Source: Posner G. J. (2004)

Jansen & Reddy Framework

As suggested by Jansen & Reddy (n.d.), the curriculum proper can be unpacked by analysing the core claims, assumptions and silences in the curriculum. Core claims refer to what the curriculum claim will happen; The assumption underpins the curriculum reveals what the curriculum takes for granted; Silences refer to what the curriculum did not mention (Jansen & Reddy, n.d.).

3. Curriculum Analysis and Discussion

Based broadly on the idea of Posner (2004), analysis of curriculum documentation and origins will be discussed; analysis of the curriculum proper and curriculum in use will be performed to compare its congruence in order to identify the strengths and weaknesses. Finally, possible suggestions for future improvements will be proposed.

About the course (The curriculum proper)

The 3-month RTN course commenced in October 2013 under the co-initiative between the MOH and the Workforce Singapore (WSG). This government funded, place-and-train programme targets former-nurses who have not been practising for 5 years or more and aims to facilitate their return to the workforce and has to be accredited by the Singapore Nursing Board (SNB). As such, although the curriculum is crafted by the training provider, the assessment methods, competency items and contents are mandated by SNB.

The aim of the course is to equip participants with the required generic competencies to practice competently and safely in the healthcare setting of choice. It focused on nursing knowledge, skills and professional attitude. At the point of curriculum creation, this group of learners are new to the curriculum development committee. Therefore, there are very limited information about the target learners. The curriculum is created mainly based on the discipline knowledge (required generic competencies: knowledge, skills and attitude). Educators and clinical instructors (CIs) are responsible for knowledge transmission, building and assessing the skill competencies using standardised competency logbook.

To-date, four batches of RTN nurses have successfully completed the course which comprises of 4 modules: (1) Current healthcare system and nursing services; (2) Effective communication skills and safe working environment; (3) Medical and surgical nursing; (4) Clinical placement. This accredited curriculum uses varied teaching methodologies: lectures, workshops, face-to-face discussions, simulation and supervised practice in clinical attachment. The 3-month course comprises of 1-month classroom training and 2-month attachment at various acute care (hospital) settings, emphasising on hands-on practice. The contents are broadly hosted and there are no specific instructions on how it should be organised.

The term of macro and micro levels of curriculum organisation are relative terms and describe a specificity continuum between the two extremes (Posner, 2004). The educator schedules the contents according to resources (e.g. facilities availability), balance of the various methodologies and pre-requisites of the subject knowledge. As such, at the micro-curriculum level, the content is usually organised vertically or horizontally.

The curriculum in use

During the past intakes, the educator constantly make meaning of everything that happened during the interactions with the learners – the good, the bad, the expected and the unexpected, many reflection-in-action and reflection-on-action have taken placed; concluding that the

curriculum is everything that happened during the 3-month course: the meanings, feelings and understanding that those events generated, be it intended or unintended. This is aligned the view of the curriculum that Hendrick and Weissman (2007, in Churchill, et al, 2016, p. 192) advocated. Together with these constant meaning-making are the intuitive improvement ideas to continuously improve the learning outcomes for the future intakes, many improvements already made along the way.

In the 2nd intake, more simulation sessions are created as there are scarce opportunities to cover certain skills at clinical settings. Whilst in the 3rd intake, an eLearning component, inquiry-based learning through online discussion, is introduced. Although this strategy was challenging at the beginning due to learners' poor IT literacy skills; learners eventually met the intended learning outcomes with careful preparation and guidance. The 4th intake incorporated authentic learning experience – the employer-setting attachment into the clinical attachment, allowing learners to learn from real-world natural experiences and narrow the gaps between the training and real-life environments.

Post-course evaluation is collected upon course completion, with an average score of 4.2 – 5 out of 5 for past intakes. Regular follow-ups and monitoring of the returnees' retention on the job for at least 6 months is required, which is recorded as 60% to 100%. With the introduction of eLearning and inquiry-based learning in the 3rd intake, the 6-month retention rate on the job increased to 100%, an approximately 30-40% increment comparing to the previous intakes. These step-by-step improvements and evaluation is an integral part of curriculum development, during which, the educator's effort in continuous improvement, such as enhanced pedagogies, may come from educator's instinct and based on the implied curriculum and could have potentially added new perspectives/ ideologies to the curriculum.

The positive results affirmed my query that some needs must be addressed. As such, periodic holistic analysis and evaluation of the curriculum is necessary to incorporate these needs and ensure new ideologies are explored in the written curriculum.

Analysis of curriculum proper

As suggested by Jansen & Reddy (n.d.), the curriculum is unpacked by the following analysis in 3 areas: core claims, assumptions and silences.

Core claims refer to what the curriculum claims will happen (Jansen & Reddy, n.d.). The aim of the course claimed to equip RTN learners with the required generic competencies (knowledge, skills and professional attitude) so that learners are able to practice competently and safely in the healthcare setting of choice. As the curriculum is created mainly based on the discipline knowledge, is this sufficed to warrant the outcome that the curriculum claimed?

The assumption underpins the curriculum reveals what the curriculum takes for granted (Jansen & Reddy, n.d.). The RTN curriculum assumed that the RTN learners only need to refresh their knowledge, skills and professional attitude, after which they will be ready to practice competently and safely at the assigned healthcare setting of their choice.

Silences refer to what the curriculum did not mention (Jansen & Reddy, n.d.). Comparing the accredited curriculum with current knowledge about the target learners, accumulated through interactions and observations of past intakes, the original curriculum did not:

1. Inform about the needs of target learners besides refreshing knowledge and skills (emotional needs, knowledge deficits beyond the academic discipline, e.g. real-life problem solving and coping, etc.)
2. Consider that the learners' future working environment could be different current.

All these 'silences' deserve attention for an in-depth analysis. Schwab (1973) believed a defensible educational thought must consider the coordination of the 4 commonplaces: the learner, teacher, subject matter and milieu.

Posner's (1992) also suggested 4 categories of analysis when unpacking a curriculum: learners and learning, teachers and teaching, knowledge and society. Jansen and Reddy (n.d.) extended its use in relation to the curriculum's claims, assumptions and silences (see Table 1 for the summary of the analysis).

	Assumptions	Claims	Silences
Learners and learning	<ul style="list-style-type: none"> Knowing very little about the target learners, their learning needs, learning style, etc. Assume the RTN learners' only need to refresh their knowledge, skills and professional attitude, then they should be able to practice competently and safely at the assigned healthcare setting of their choice. 	<ul style="list-style-type: none"> Aim to equip RTN learners with the required generic competencies to practice competently and safely in the healthcare setting of choice. It focused on the nursing knowledge, skills and professional attitude. Experiential learning/ hands-on 	<ul style="list-style-type: none"> No other needs or support is defined Did not recognise the learning environment is different with learners' future working environment
Teachers and teaching	<ul style="list-style-type: none"> Acute care setting and other non-acute care settings need similar skill set 	<ul style="list-style-type: none"> Nurse educator from the acute care setting Responsible to transmit information to learners Responsible to build and assess learners' competencies that is prescribed by SNB 	Nil mention/ considerations of environment differences that could make application of what learners learnt difficult
Knowledge	Learners are only lack of Subject knowledge and competencies on the required generic skills specified in the logbook	Subject knowledge and identified competencies are the essential focus	Nil mention of knowledge in coping and problem-solving skills
Society	<ul style="list-style-type: none"> Recognised changes in the current healthcare system – a shift of focus to community care Neglectable amount of changes that learners are able to cope with the changes 	<ul style="list-style-type: none"> Acknowledged changes in the current healthcare system in Module 1 	<ul style="list-style-type: none"> Nil mention of any changes in the working environment, especially changes brought by technologies, e.g. electronic systems in healthcare Nil mention of coping skills and problem solving

Table 1: The core claims, assumptions and silences in accredited RTN curriculum

Analysis of learners' needs and challenges

With the accumulation of experience from past intakes, the following challenges and learners' needs are observed:

- Wide age range (27 to 63), with diverse prior experiences and some did not practise for 15-20 years. This reflects diverse learning needs and possibly different learning styles.
- From the very 1st intake, the target learners often come with intense emotions from the beginning of the course: a mixed emotion of excitement, worries and anxiety. As the majority who have returned have left the profession for more than 15 years, returning to work is definitely an exciting big decision. However, they may also be worried if they could manage the changes brought by this decision; from a free and easy lifestyle to being highly routine and disciplined; the demand from the job and profession versus family and children's needs. Preparing learners in managing these emotions and its impact on their performance become an area of enactment of the educator (Dirkx, 2001).
- The use of information technology (IT) in the current Singapore healthcare system is well-established and entrenched, from patient management to nursing manpower management. For RTN learners, the use of IT systems is viewed as one of the major challenges, due to poor digital literacy. It is highly possible that they were good in documentation in the old days, using pen and paper. However, the new discovery of the current highly computerised healthcare system will obviously give them a big surprise. Yang (2016) acknowledged the fear brought in by changes in the career: for example, what they were good at in the past is replaced by technologies. The scholarly literature highlighted the powerful role/ impact of the emotions in adult-learning and suggested educators to manage the learners' emotions during learning (Dirkx, 2001; Wlodkowski, 2010).
- Too much to cover in the curriculum, too little time available. There is a need to improve the efficiency of learning by teaching effective learning strategies to empower learners for

self-directed and lifelong learning; this alongside inquiry-based learning can help to improve problem-solving and effective coping.

Analysis of curriculum in use (what is worth knowing for the RTN learners)

From the learners needs analysis, the curriculum in use needs to be forward-thinking and aligned to the needs of learners' working life. All of these, points to the question of "in order to prepare them for their chosen nursing job (of various setting), what is worth knowing for the RTN learners in this 3-month course?" From the discussion in the previous section, with the 'learner-centred' lens, it will be obvious that besides subject knowledge and SNB identified competencies, survival skills should be covered, including:

- Coping skills (analytical and problem-solving skills)
- Digital literacy skills, eLearning components and online discussions
- Lifelong-learning and learning strategies

Online discussions through Edmodo (Learning Management System) in the 3rd intake has proven to be an effective strategy to build a sense of belonging to the community/ group and effectively moderated the feeling of fear, anxiety and stress (Shackelford & Maxwell, 2012). It allowed meaningful learning and discussion to happen beyond the physical classroom. Exchange of information/opinions is made possible even when learners are physically apart during clinical attachment at different locations. By returning the autonomy back to the learners, it empowers them to manage their own learning; instead of asking for answers straight away, they will attempt to find the answers first. They learnt to validate answers by sharing and comparing ideas. Inoue (2009) acknowledged that the ability of self-directed learning gained through effective eLearning pedagogies can foster lifelong-learning. In addition, it allows the educator to check on learners' progress and facilitate the discussion whenever required.

This is an effective pedagogical improvement, but it was not acknowledged in the curriculum. Martin (1976) informed that hidden curriculum is always tied to learning, which consists of learning states of a setting which are either unintended or intended but not openly acknowledged to the learners in the setting.

Curriculum critique and define the curriculum ideologies

Each ideology possesses different visions on how a curriculum should be. In order to holistically define the best suitable ideologies for the RTN curriculum, a reflective eclecticism approach is used (Posner, 2004; Schwab, 1971). In this section, the suitability of the four curriculum ideologies, namely, scholar academic (SA), social efficiency (SE), learner centred (LC) and social reconstruction (SR) ideologies against the RTN learners' needs to determine the curriculum orientation.

From the above comparison and analysis, it is obvious that the learners' voices are absent from the process of curriculum development; their needs were not sufficiently supported. The original curriculum is based on SA and SE ideologies but lacks LC ideology. From the SR ideology, the RTN learners could potentially help to raise awareness to former nurses who are not working. However, in view that the RTN learners undergo many changes and stress upon the decision to re-enter the workforce, during the RTN course or even in the initial period on the job, reaching out to the society is beyond their ability to manage.

To raise awareness to the former-nurses who has yet return to nursing, it would be more appropriate at a later stage when they are already coping with both work and life. Thus, it will not be considered in the curriculum. In summary, corresponding with the improvements made along the intakes, a shift on ideologies has taken place: a learner-centred ideology has been incorporated. This change is depicted in Figure 4.

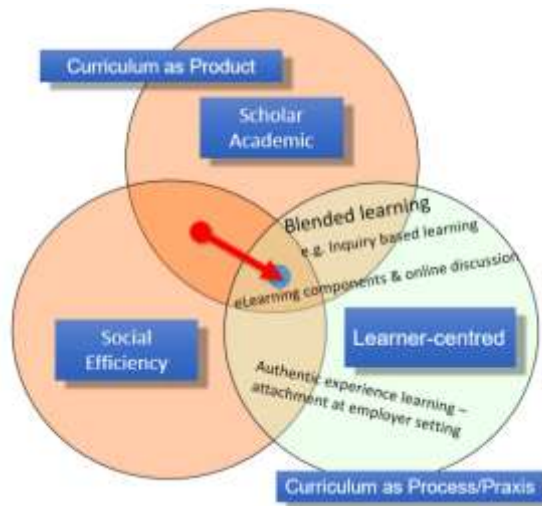


Figure 4: The new ideologies for RTN curriculum: SA, SE and LC

4. Proposal for Curriculum Improvement

In this case, the improvements in pedagogies have led to a shift in the underpinning ideologies. Without truly understanding the curriculum ideologies (belief and actual behaviour), it may end up with common misconceptions like: technologies drive better learning or this is the ‘fashion’/ ‘cool stuff’ (Yang, 2016). With the understanding of the curriculum ideologies based on the analysis of the learners’ needs, we understood the choice of using eLearning components which are aimed at improving learners’ IT literacy, as it is a fundamental skill for work survival and self-directed learning.

The vision should be beyond the 3-month duration of the course and utilises this opportunity as a starting point of the learning journey. This could explain why the 3rd intake of the RTN achieved 100% on-the-job retention rate at 6-month post course, as the strategies not only boost learners’ academic knowledge and skill competencies, but also enhanced their ability to cope with the new challenges. The intention of the learning objectives of such activities should be clearly documented in the curriculum proper to avoid hidden curriculum. Martin (1976) pointed out that finding a hidden curriculum requires conscious effort to investigate work that is never done - silences in curriculum, which is always relative to setting, time and learners. This was the trigger for this curriculum analysis.

Proposed improvement in curriculum organisation

With the identified tri-ideologies in mind, enhancements can be made at micro-curriculum level with the aim to improve the efficiency of learning, for example, with the understanding of learners’ future working environment, a careful knowledge scaffolding of reflective practice, problem-solving and evidence-based practice to build a spiral approach towards real-life problem-solving can improve learners’ coping skills. The spiral curriculum was first introduced by Jerome Bruner in 1960. Bruner (as cited in Knight, 2001, p.371) “depicted good curriculum as a spiral of repeated engagements to improve and deepen skills, concepts, attitudes and values, and extend their reach.” Hence, it stressed the necessity of coherence and progression in the curriculum (Knight, 2001). This approach also can be explained by constructive alignment: a method to start with the outcomes we intend learners to learn, align teaching and assessment to the best achievable outcome, for the outcome target towards the application in learners’ direct experience and working space (Biggs and Tang, 2007).

Posner and Strike (1974) suggested 5 curriculum sequencing principles: (1) world-related, (2) concept-related, (3) inquiry-related, (4) learning theory-related and (5) utilisation-related principles. The above example is based on the utilisation-related principle. After the sequenced learning on the 3 topics, the second reflective journal as an assessment will be focused on solving a real-life problem (usually clinical-practice related) that is commonly encountered by learners in the 3rd month of learning at their employer setting. As such, evidence-based practice will be a tool in the problem-solving (figure 5).

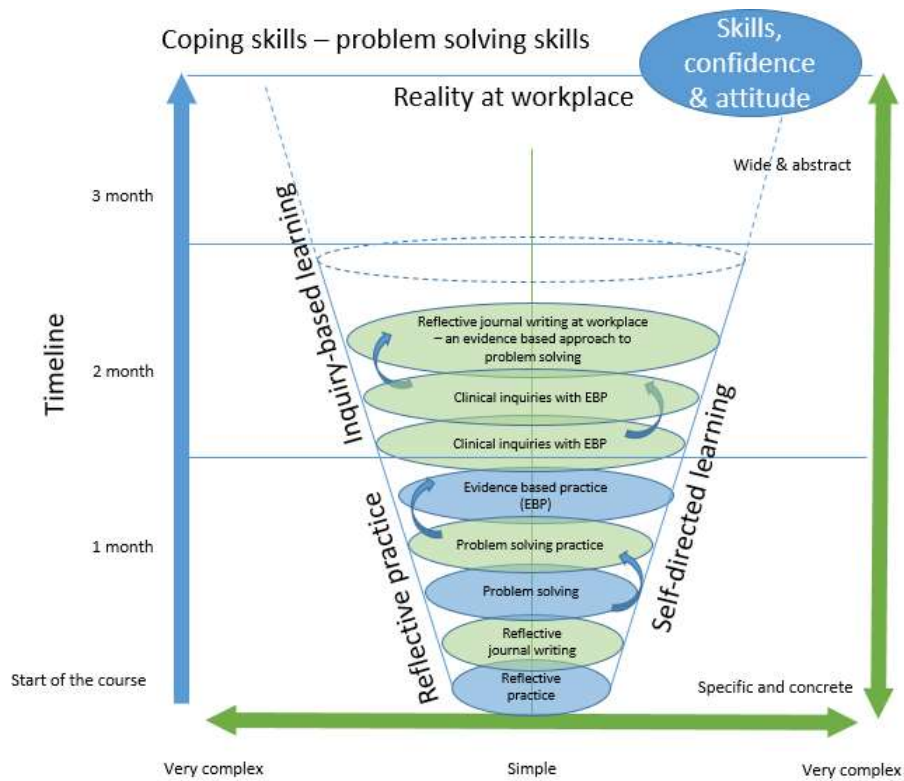


Figure 5: Knowledge scaffolding using the spiral approach

In this approach, the assessment not only reinforced one, but 3 topics, which could also reinforce the self-directed and inquiry-based learning strategies in real-life applications. In such manner, RTN learners are more prepared for solving problems in the real world with the equipped knowledge and skills. Theoretically, this could enhance their coping skills by gaining 'control' through situation analysis, evidence-searching and critiquing to formulate their own voice - an informed decision on the researched clinical matters.

The previous sections described the full investigation of searching for the hidden curriculum. The curriculum should acknowledge the covert/ hidden curriculum by moving the covert and tacit to the overt and explicit, especially if the hidden curriculum is harmful (Martin, 1976; Norton & Hathaway, 2005). This way, not only learners have the opportunities to understand why they need to learn and how they can use the knowledge/ skills, but a new educator who may take over the delivery of the course will also be able to see this perspective. To reveal this hidden curriculum and transform it to the curriculum proper will also require conscious effort.

Revealing the null/ hidden curriculum

SOLO (Structure of the Observed Learning Outcome) taxonomy can be used to provide a means of evaluating the level of the curriculum/ educator and learners are operating (Biggs & Tang, 2007). Five levels of taxonomy, namely, prestructural, unistructural, multistructural, relational and extended abstract. The quantitative phase (unistructural, multistructural) is focusing on knowing more – a quantitative increase; whereas, the qualitative phase (relational and extended abstract) is focusing on restructuring parallels, which involves a conceptual restructuring of the components to deepen understanding (Biggs & Tang, 2007). However, Biggs and Tang (2007) also recognised the challenges to highlight these qualitative aims in the intended learning outcomes (ILOs).

Considering SOLO, a key recommendation is to address the qualitative aims into the course aims. For example, the aim of course could be documented as such: The Return-to-Nursing course aims to equip RNs who have not been practicing nursing for five years or more with the required generic competencies, self-directed learning skills and evidence-based practice so that she/he remain competent and safe throughout their practice in the healthcare setting of choice. In summary, the plan of integrating the tri-ideologies through suggested improvements can be documented into the overt curriculum using a 2-pronged approach:

1. To craft ILOs at relational or extended abstract level that reflect the spiral approach
2. Incorporate the qualitative aims into the course aims.

Conclusion

In this paper, it is evident that a curriculum development process does not stop at the point of creation of the curriculum proper. Any changes in the setting, time and learners' needs may reveal potential null curriculum. Educators' intuition and continuous effort for improvements during implementation may unexpectedly introduce covert/ hidden curriculum. Periodical curriculum analysis and review will be able to turn both into overt curriculum/curriculum proper.

Like what the Saber-tooth curriculum described, the purpose of education/ curriculum at Ice Age was eventually informed by the wise old man when being challenged by the radicals: fish-grabbing, horse clubbing and tiger-scaring are taught for the purpose to develop a generalised agility, strength and noble courage, not for the skill itself to grab fish, club horse and scare tigers. These unsaid learning objectives are covert/hidden curriculum, it happened due to the changes in the settings, time and learners' needs. Our world and society is constantly changing, certain changes may hinder the ability of the learners or even educators to comprehend the true meaning/purpose of what is in the curriculum. Educators should be sensitive to the changes in the settings, time and learners' needs, and perform periodical curriculum analysis to keep the curriculum up-to-date and meaningful (Soto, 2015).

References

- i. Biggs, J., & Tang, C., 2007. *Teaching for Quality Learning at University: What the Student Does* 3rd ed. Berkshire: Society for Research into Higher Education & Open University Press.
- ii. Churchill, R., Godinho, S., Johnson, N. F., Keddle, A., Letts, W., Lowe, K., Shaw, K., 2016. *Teaching: Making a difference*. 3 ed.. Melbourne: John Wiley and Sons Australia.
- iii. Department of Statistics Singapore, 2016. *Old Age Support Ration [Infographic]*. [Online] Available at: http://www.singstat.gov.sg/docs/default-source/default-document-library/statistics/visualising_data/old-age-support-ratio2016.pdf
- iv. Dirkx, J. M., 2001. The Power of Feelings: Emotion, Imagination, and the Construction of Meaning in Adult Learning. *New Directions for Adult and Continuing Education*, Vol.89, pp. 63-72.
- v. Inoue, Y., 2009. Linking Self-directed Lifelong Learning and e-learning: Priorities for Institutions of Higher Education. In M. Stansfield & T. Connolly, Eds. *Institutional Transformation through Best Practices in Virtual Campus Development: Advancing e-learning Policies: Advancing e-learning Policies* Hershey, PA: Information Science Reference, pp. 22-27.
- vi. Jansen, J. D., & Reddy, V., n.d.. *Curriculum Analysis: A reference manual*. [Online] Available at: <http://www.pitt.edu/~ginie/ieq/pdf/curranal.pdf>
- vii. Kelly, A. V., 2009. *The Curriculum: Theory and Practice*. S.l.: SAGE Publications.
- viii. Knight, P. T., 2001. Complexity and Curriculum: A process approach to curriculum-making. *Teaching in Higher Education*, vol. 6, no. 3, pp. 369-381. [Online] Available at: DOI: 10.1080/13562510120061223
- ix. Martin, J. R., 1976. What Should We Do with a Hidden Curriculum When We Find One? *Curriculum Inquiry*, vol. 6, no. 2, pp. 135-151. [Online] Available at: DOI: 10.2307/1179759
- x. Ministry of health, Singapore, 2014. *Building Our Healthcare Manpower Capabilities [Infographic]*. [Online] Available at: https://www.moh.gov.sg/content/moh_web/home/pressRoom/highlights/2014/ministry-of-health-budget-initiatives-2014.html
- xi. Norton, P., & Hathaway, D., 2015. Teachers' Online Experience: Is There a Covert Curriculum in Online Professional Development? *Journal of Technology and Teacher Education*, vol. 23, no. 4, p. 509.
- xii. Posner, G. J., & Strike, K. A., 1974. *An Analysis of Curriculum Structure. Paper presented at the 1974 Annual Meeting of the American Educational Research CD Association, Chicago, Illinois*. [Online] Available at: <http://files.eric.ed.gov/fulltext/ED089432.pdf>
- xiii. Posner, G. J., 1992. *Analyzing the Curriculum*. New York: McGraw-Hill.
- xiv. Posner, G. J., 2004. *Analyzing the curriculum*. 3rd ed. New York: McGraw-Hill.
- xv. Shackelford, J., & Maxwell, M., 2012. Sense of Community in Graduate Online Education: Contribution of Learner to Learner Interaction. *The International Review of Research in Open and Distributed Learning*, vol. 13, no. 4, pp. 228-249. [Online] Available at: <http://www.irrodl.org/index.php/irrodl/article/view/1339/2317>
- xvi. Schiro, M. S., 2012. *Curriculum Theory: Conflicting Visions and Enduring Concerns*. 2nd ed. California: SAGE Publications.
- xvii. Schwab, J., 1971. The Practical: Arts of Eclectic. *The School Review*, vol. 79, no. 4, pp. 493-542. [Online] Available at: <http://www.jstor.org.ezproxy.library.uwa.edu.au/stable/1084342>
- xviii. Schwab, J. J., 1973. The Practical 3: Translation into Curriculum. *The School Review*, vol. 81, no. 4, pp. 501-522. [Online] Available at: <http://www.jstor.org.ezproxy.library.uwa.edu.au/stable/1084423>
- xix. Siong, O., 2013. *Singapore Third Largest Silver Industry Market Potential in Asia*. *Channel NewsAsia*. [Online] Available at: <http://www.channelnewsasia.com/news/business/singapore/s-pore-third-largest/640414.html>
- xx. Soto, S.T., 2015. An Analysis of Curriculum Development. *Theory and practice in language studies*, vol. 5, no. 6, pp. 1129-1139. [Online] Available at: <http://dx.doi.org/10.17507/tpls.0506.02>
- xxi. Wiles, J., 2008. *Leading Curriculum Development*. S.l.: SAGE Publications.
- xxii. Wlodkowski, R. J, 2010. *Enhancing Adult Motivation to Learn: A Comprehensive Guide for Teaching All Adults*. 3rd ed. San Francisco: Jossey-Bass.
- xxiii. Yang, C., 2016. *Often, It's Our Attitudes that Get in Our Way: Learning Expert*. *The Straits Times*. [Online] Available at: <http://www.straitstimes.com/singapore/education/often-its-our-attitudes-that-get-in-our-way-learning-expert>