



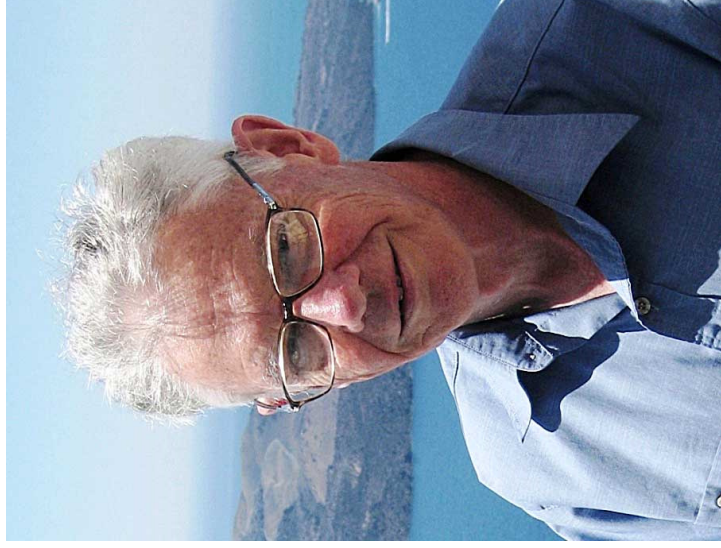
E-LEADER CONFERENCE Bangkok 2018

Philip T. Beckwith – Senior Teaching Fellow

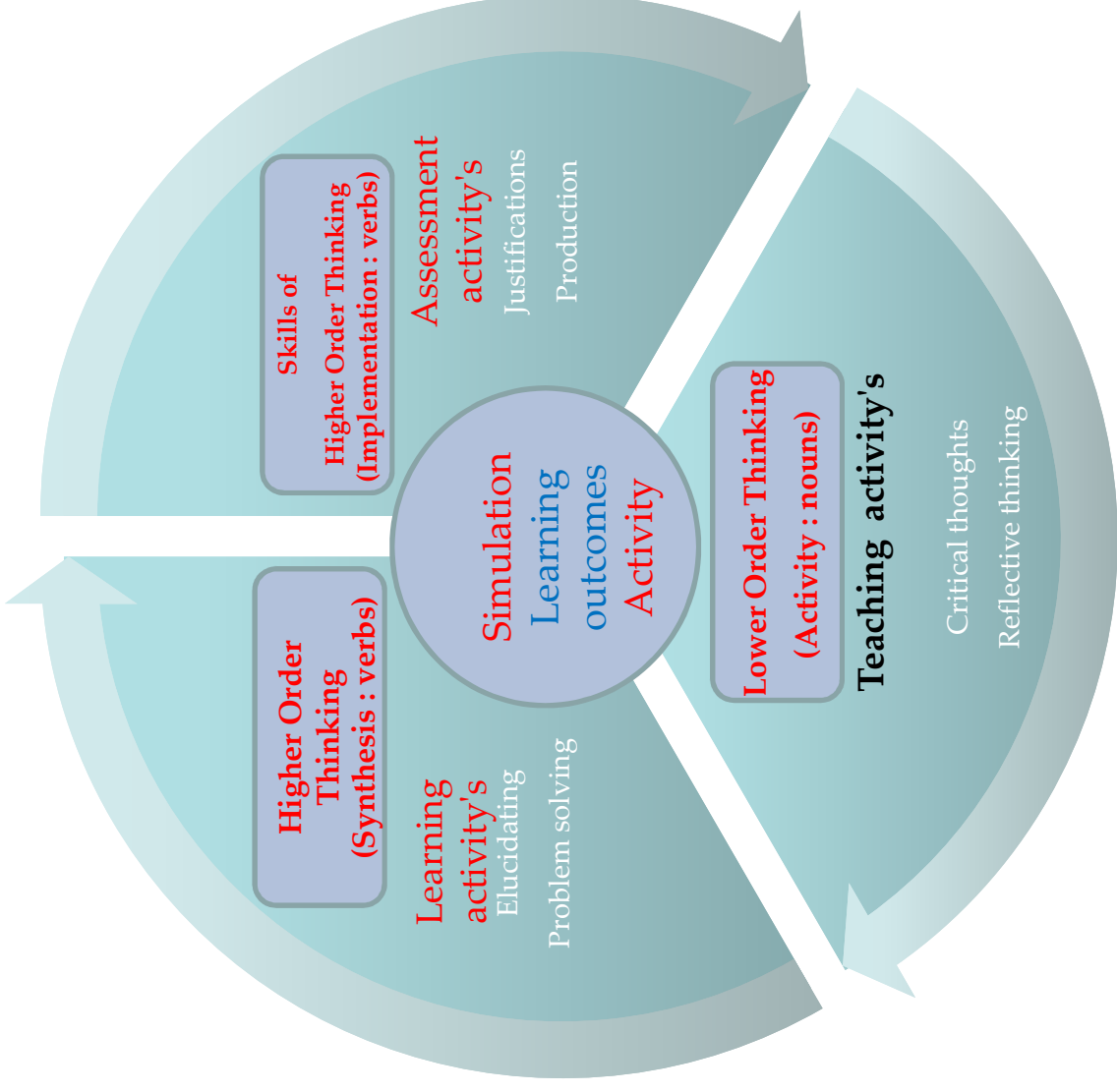
Does clinical simulation stimulate Higher Order Thinking and the Skills of Higher Order Thinking in medical education?



The HOTS HOT taxonomy suggests that it can be incorporated within an adaptation of Biggs (1999) work which described his constructive alignment theory.



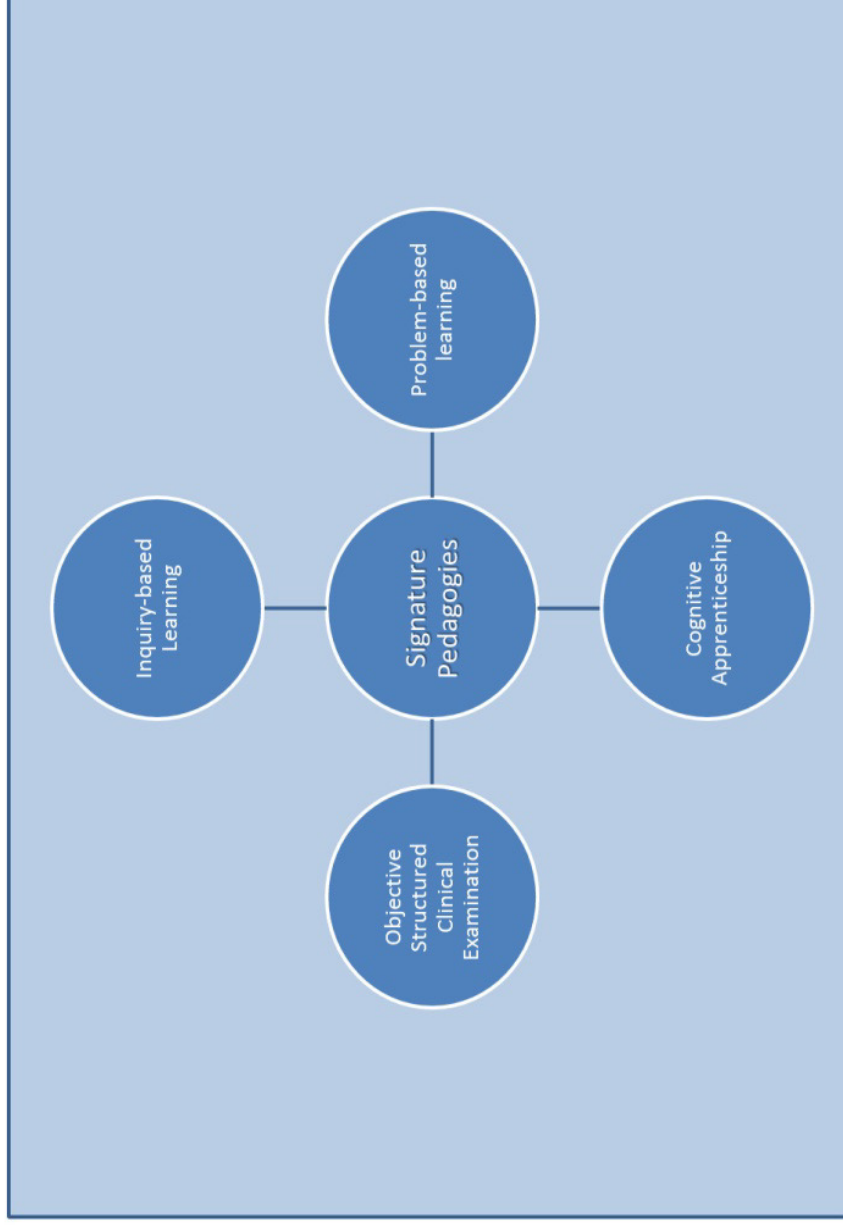
The HOTSHOT taxonomy and constructive alignment for clinical simulation



Constructive alignment Adapted from (Biggs 1999)

By way of a caveat, Shulma suggests that deep content knowledge cannot be replaced by the signature pedagogy, the juxtaposition being that the signature pedagogy can support the deep content knowledge.

The central constituents of the signature pedagogy



Not all agree

McElroy and Patrick (2009) debate that the dictum ‘see one, do one, teach one’ whilst characterizing traditionally held beliefs for the teaching of clinical skills is in fact suboptimal.

The activity nouns ‘critical thought’ and ‘reflective’ are synonymous with the cognitive apprenticeship concept of ‘observing how experts solve problems’.

The synthesis verbs ‘elucidating’ and ‘problem solving’ synonymise ‘develop problem-solving expertise’. Coughlin, McElroy and Patrick (2009) offer that a student may well merely mimic the learning activities, thereby learning enough to pass the exam without understanding.



However, the implementation verbs of the HOTS HOT taxonomy 'production' and 'justification' require the student to justify and therefore demonstrate understanding.

This demonstration of understanding negates Coughlin, McElroy and Patrick's fear of mimicry, giving both robustness and credibility to the signature pedagogy.

Through analysis of the pertinent literature, the HOTS HOT taxonomy has been developed. Having established, through the use of constructive alignment, a framework for defining a generic signature pedagogy, the next stage of the mixed methods study was to populate the framework with data collected from a hermeneutic phenomenological study.



The research study

It is suggested that clinical simulation contributes to increased patient safety and is therefore encouraged in undergraduate operating department practice (ODP) courses (College of Operating Department Practice, 2011). A search of the literature, however, fails to uncover studies indicating the effectiveness of clinical simulation in the field of operating department practice.

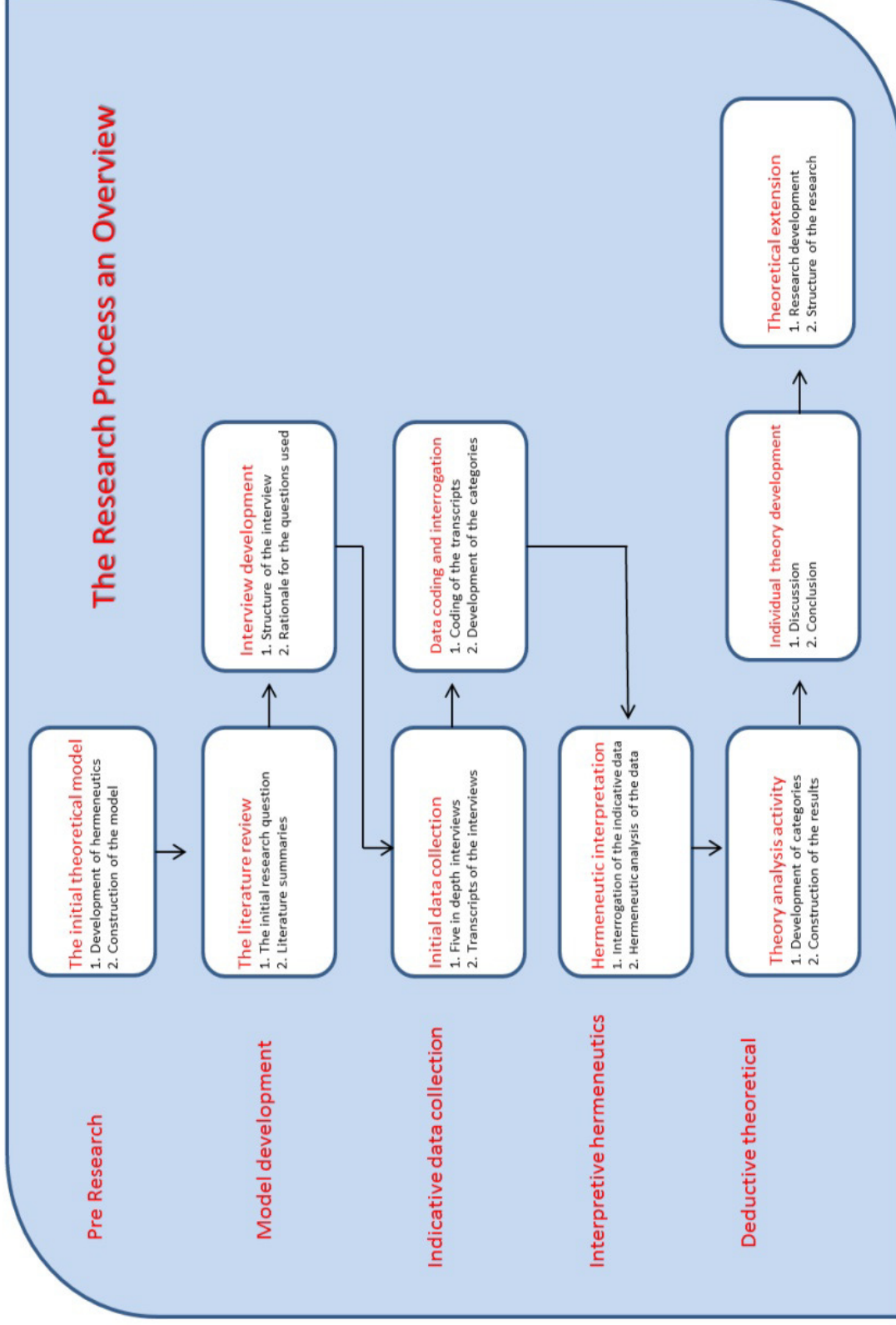
The reapproved Diploma of Higher Education Operating Department Practice resulted in the introduction of clinical simulation in the first term whilst the classroom instruction remained unchanged. Therefore a comparison can be drawn between the cohort with classroom instruction only and the following cohort that received the blended theory and simulated learning.

Methodology

The research methodology for this study is phenomenology. Within the world of phenomenological research sits hermeneutics. This branch of research affords the researcher the opportunity for personal questioning of that which is being researched, the depth and breadth of the researcher's emersion into the research is at their own discretion (Gray, 2014).



<http://www.quickmeme.com/meme/364zii>



(Beckwith, 2018)

Theme 1: proactive and prepared

Interviewees identified that students in Cohort 1 (those without simulation experience) were reluctant to participate in their placement and required more encouragement, whilst students in Cohort 2 (those who had engaged with simulation) demonstrated self-directed and proactive attitudes and behaviours.

A study, revealed through the literature review, concurs with this finding as Alinier *et al.* (2006) compared and contrasted two student groups and found that the students exposed to simulation outperformed in their assessments and clinical practice compared to those students with no simulation experience.

The inference from the interviewees' comments is that students who have engaged in simulation know what is expected of them, are more motivated, are less likely to procrastinate, and have the confidence to take ownership of their educational needs and aspirations

Theme 2: confidence

Interviewees shared that student confidence levels differed between the two cohorts: students in Cohort 1 were less willing to take the lead whilst students in Cohort 2 demonstrated far more confidence in a variety of ways.

Again, the literature review reflected findings from Weller's (2004) study where it was suggested that students liked simulation and being in a safe environment, which fostered confidence in the simulator as the students knew that they would do not harm to real patients, and then carried that confidence to the true clinical environment.

Theme 3: retaining knowledge

Interviewees identified that students in Cohort 2 demonstrated an ability to retain knowledge.

Whilst only being addressed superficially and without consensus between Esther and Julian, this theme is significant to the higher order thinking component of the research question.

The literature review identified Goodwin and Wimer (2010, p. 23) who were concerned with “...poor long-term recall, lack of clinical reasoning skills, and lack of self-directed learning skills” identified amongst medical and health professionals. These researchers introduced problem based learning (PBL) into the higher order thinking debate and through the evaluation of PBL in the classroom and clinical practice, found a significant increase in long-term recall and clinical reasoning

Theme 4: *mentor and student interaction*

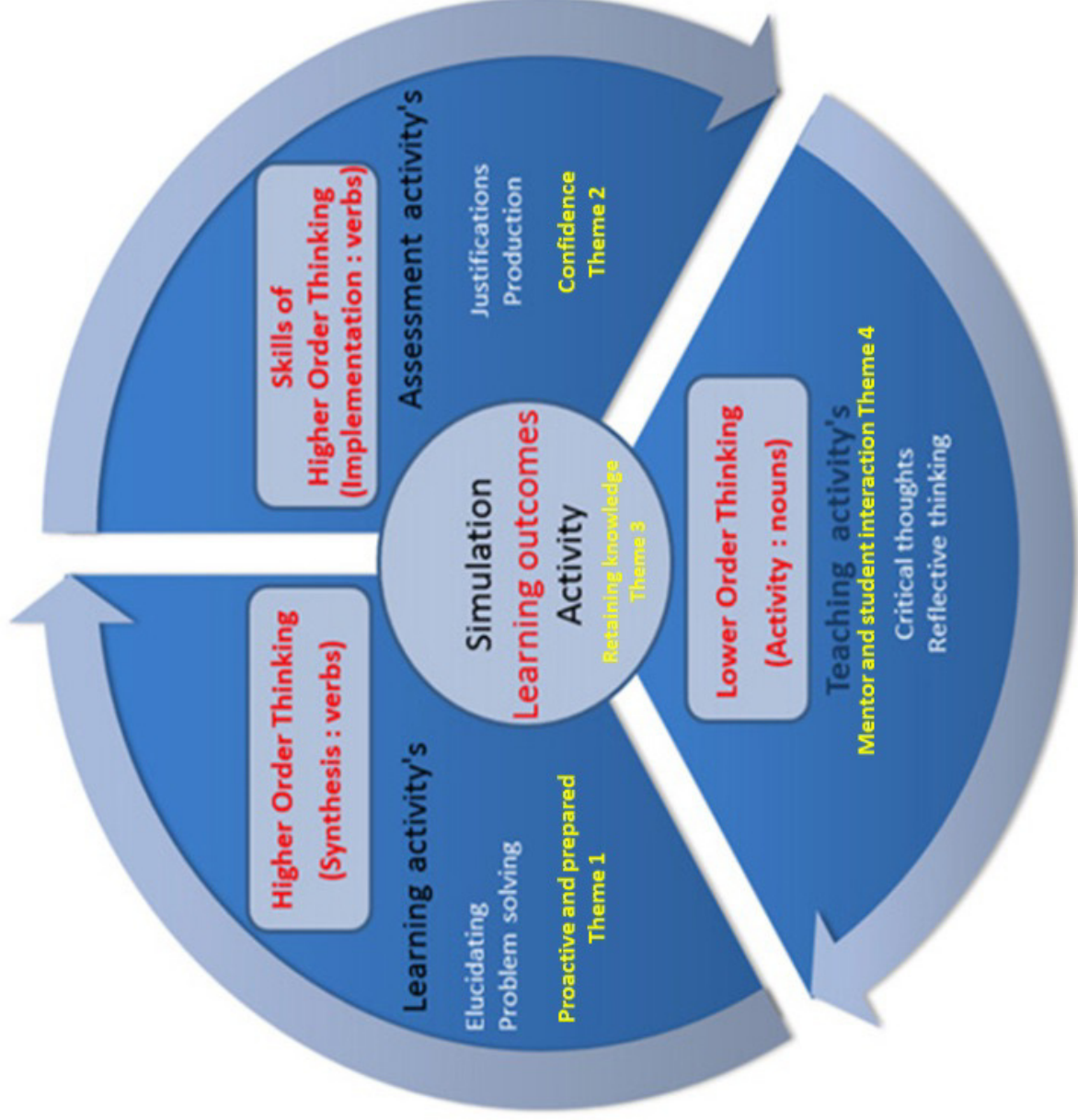
Through the benefits of a semi-structured interview, interviewees were able to introduce topics that they felt significant.

Interviewees shared that their relationship with the student who has experienced simulation had changed in that Cohort 1 students required more encouragement to engage in clinical activities.

Yet Cohort 2 students readily engaged in the clinical activities inspiring the mentors to invest their energies as learning ‘coaches’ that were eager to see their ‘athletes’ succeed. The inference is that students in Cohort 2 are demonstrating higher order thinking skills and higher performance levels thus demanding a change in mentorship styles.

There was nothing within the reviewed literature pertaining to the relationship between the clinical mentor and their student, however, as four out of five interviewees raised the subject it is therefore significant and should be further investigated.

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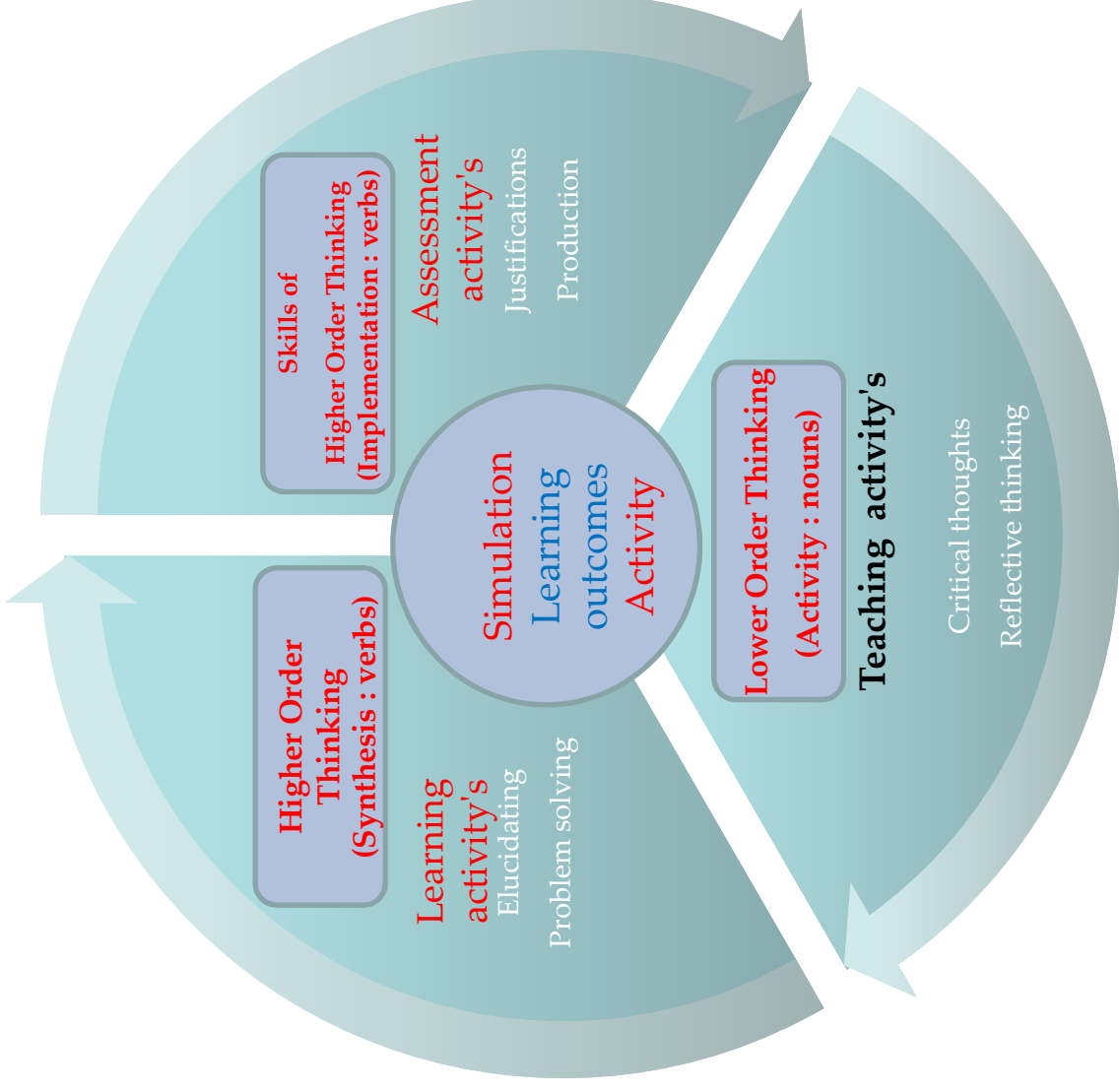
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100%
OVERALL SATISFACTION
ON THE
CREATIVE WRITING
COURSE

**NATIONAL
STUDENT
SURVEY 2016**

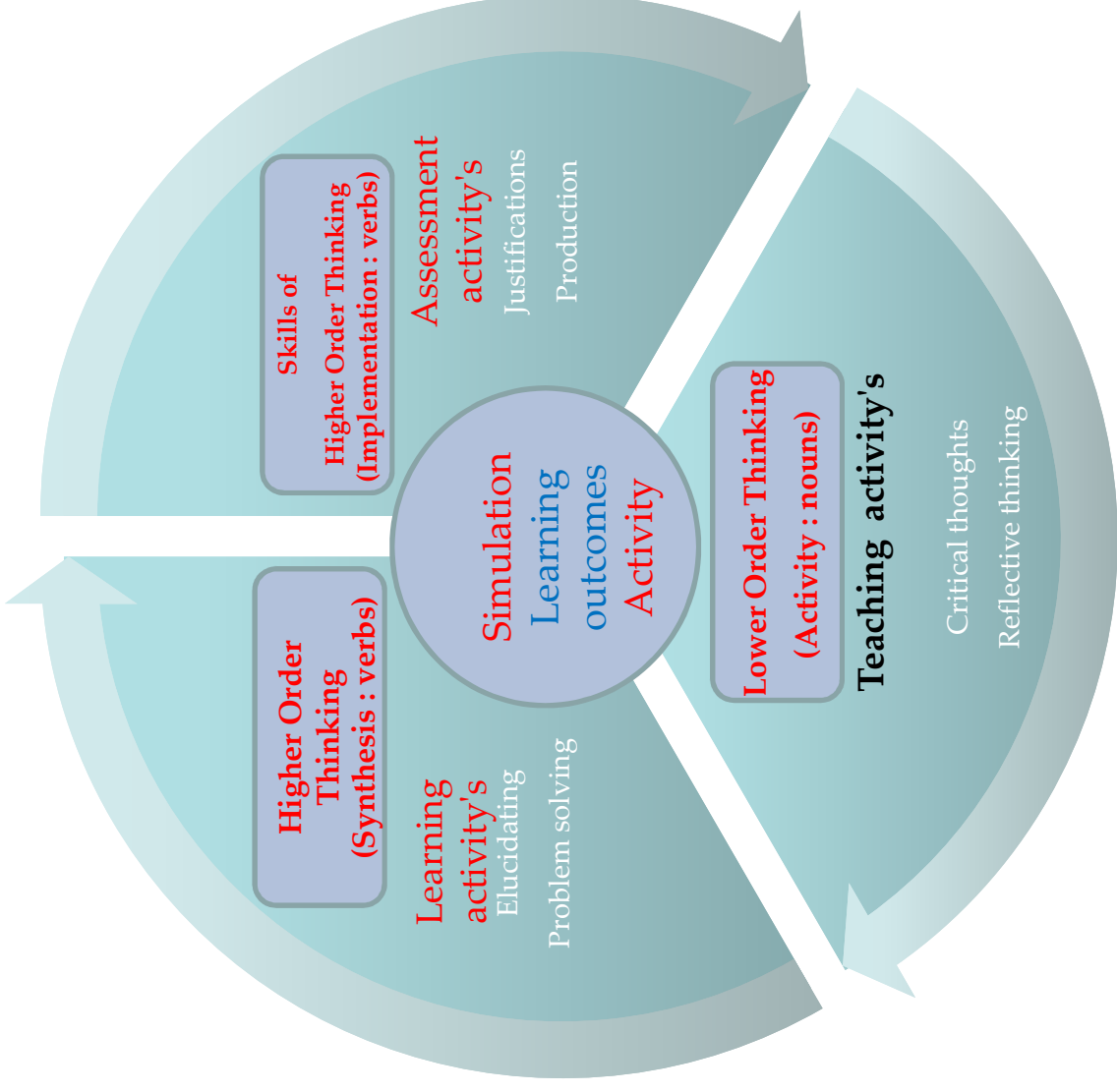


HOTSHOT and signature pedagogy for business simulation



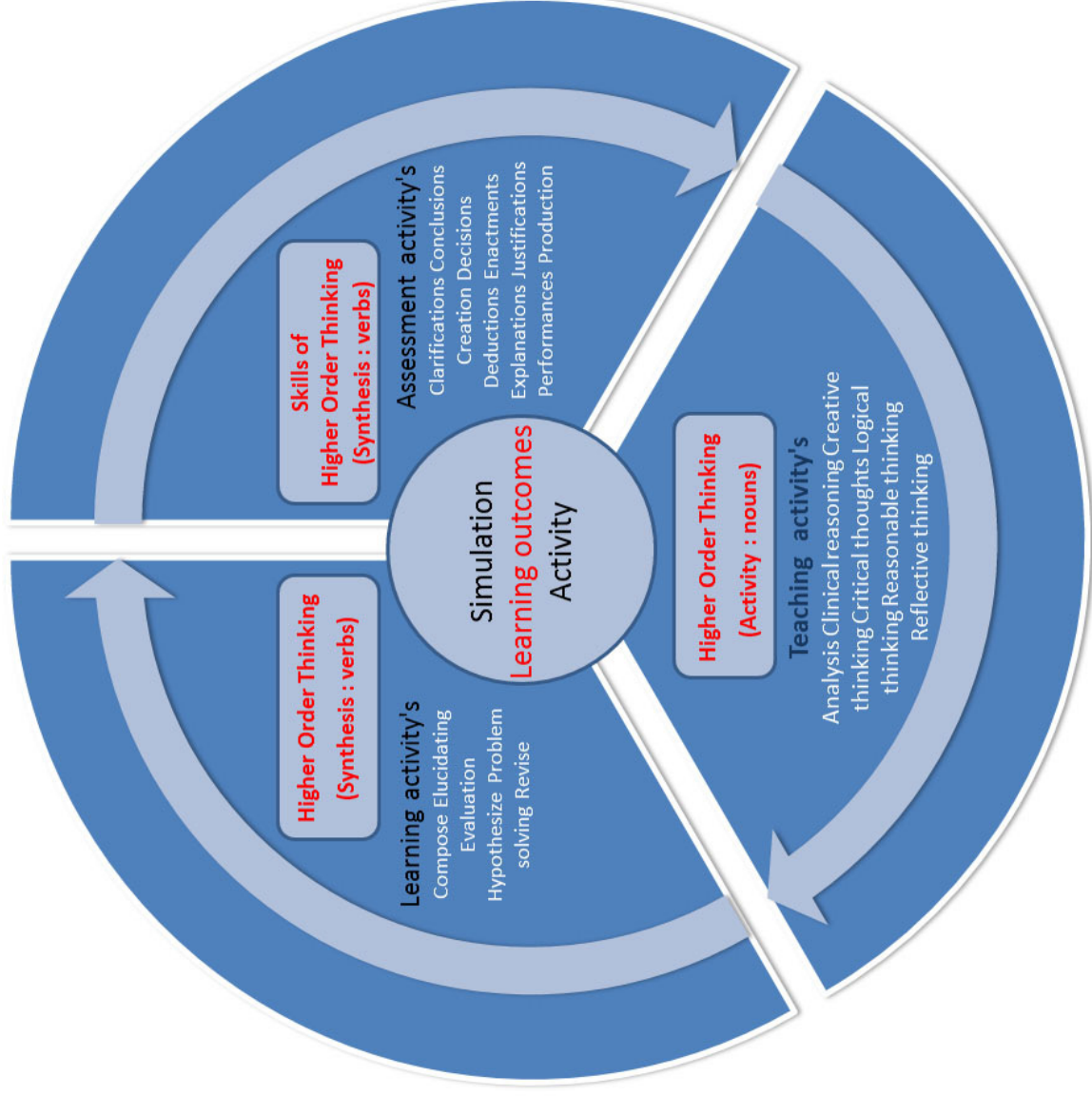
Constructive alignment Adapted from (Biggs 1999)

HOTSHOT and signature pedagogy for journalistic simulation



Constructive alignment Adapted from (Biggs 1999)

Signature Pedagogy Framework





Any Questions?

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