‘Understanding the Building of Professional Identities with the LEGO® SERIOUS PLAY® Method Using Situational Mapping and Analysis’

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'Understanding the Building of Professional Identities with the LEGO® SERIOUS PLAY® Method Using Situational Mapping and Analysis'

Abstract

Aim – The purpose of this pedagogical study was to explore the notion that social constructionist approaches to learning, that building with the hands provides, is a ‘technique that leverages the potential of the hand-mind dynamic’ as historically reported in the extant published literature.

Methods – The use of the LEGO® SERIOUS PLAY® (LSP) method in the context of transformative learning in Higher Education was used to drive a Situational Analysis with sixteen postgraduate nursing students, from African learning contexts. This methodological approach was to specifically explore their identity as learners and then to facilitate processes of critical introspection on social constructivist learning opportunities.

Findings – Students perceived LSP permitted a deeper level of critical introspection on their transformative learning journeys than alternative approaches such as written discourse or extended narratives could have provided. They also perceived that a major benefit of using the LSP method was that it enabled them to understand and articulate their stories more easily than if they verbally reported them first.

Conclusion – LSP was perceived as an effective vehicle for the facilitation of reflection and self-awareness, which consequently contribute to students’ capacities to function at a metacognitive level. This has the potential to contribute to authentic transformative learning. Academic learning at postgraduate level hinged on the capacity of students to develop a pragmatic and working knowledge of what acknowledging their epistemic cognition entailed.

Keywords: LEGO® SERIOUS PLAY® (LSP), Situational Analysis, Epistemic Cognition, Metacognition, Critical Introspection
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Introduction

The seminal work of Bürgi, Jacobs and Roos’ (2005) demonstrated how iterative and recursive learning necessitates a deep engagement with both psychological and physical processes. They advocated that the hand / brain relationship is pivotal to the facilitation of all learning and that the process of extending individual epistemic cognition fuels capacity for authenticity and innovation in the context of the workplace (Wilson, 2010). The impact of this on the capacity of students to make meaning of experience highlights the deeply important link between the hand and the brain, particularly in those instances where students move into vocational professions such as nursing and the healthcare sciences. Using the hands to care, in the context of this evidence, brings a whole new dimension to the notion of practical competence in the nursing profession. The link between the hand/brain is designated a primal component of human physiology, not only a means of manipulating the human world of reciprocal feedback and data but the demonstration of the profound interconnection of the hand and the brain on a physiological basis and psychological basis (Claxton, 2015). The hands in the development of cognition have been largely ignored in the context of Higher Education in the UK to date and methods advocating exploration of the concept such as LSP offer a means of addressing a potentially valuable mechanism in the process of learning.

Developing and enhancing practice in the context of the workplace hinges on pedagogy in the sense that all work based activity depends upon the formative education of employees, which can then be transferred to different contexts, settings and situation. The formulation of professional identity is largely dependent on the culture and climate of work beyond this initial learning. This paper provides an insight into a fundamentally different methodological approach to enabling and facilitating staff in the establishment of story making for storytelling. This can become an integrated and fundamental part of critical reflexivity, stemming from everyday reflection on work based practice, which combined with these cultures and contexts can determine both the professional identity of signature pedagogies and academic disciplines such as nursing and frame the individual professional identities of staff working within these professions. In terms of facilitating capacity for change and engendering a sense of organisational belonging, pedagogy has a fundamental role to play, not only in making transformational education possible but also in facilitating staff as they bridge the theory-praxis gap in real world settings.

The Notion of ‘Serious Play’ and Key Operational Definitions

It is important to delineate between constructionism and constructivism since the two hold specific relevance for this study, yet often appear to be used interchangeably. For the purposes of this article, constructionism refers to the educational method based on Constructivist Learning Theory. The conceptual foundation of ‘serious play’ combines ideas from constructionism (Piaget 1951) and its subsequent version (Harel and Papert’s Complex Adaptive System Theory (1991) which was evaluated by Holland (1996) in terms of application to management and organisational infrastructure. In contrast to research of relevance to its original implementation in corporate business and management contexts, this study applied the concept of ‘serious play’ to learning and teaching in postgraduate level nursing (a contextually and situationally different environment). The process of the LEGO® SERIOUS PLAY® method was chosen for its specific capacity to engage students in deeper reflection and collective constructionist dialogue. In common with other adult play backdrops, LEGO® SERIOUS PLAY® method can be operationally defined as ‘play’ for the purposes of this study since it involves the imaginary, it is limited in time and space and is structured by rules (James, 2015).
Kestly (2014) provided a valuable insight into the interpersonal neurology of play, examining the subcortical motivational systems in the brain. LEGO® powerfully influences the decision making processes and fundamental behaviours that are regulated in higher brain regions. She also highlighted the notion of ‘thinking with your fingers’, where the physical processes of creation facilitate reflection which is such an integral part of the profession/vocation of any practising nurse. The interrelationship between psychology and neuroscience, cognitive processes such as learning and memory are strongly influenced by the way we use our bodies to interact with the world (Claxton, 2015). The term emergence is the hallmark of connection with right mode processing of the brain, which attends to what is happening ‘in this moment’ within the emerging flow of new experience. When added to our already active left mode this is actually the zone of creativity, which is of direct significance to the LEGO® SERIOUS PLAY® method. In turn, planning the right mode in the lead is pivotal in allowing what has not yet been thought to emerge via our hands and gives natural integration of the brain, for something never before imagined. The process of play is temporal and most specifically specific to a moment in time. It also permits the notion of ‘flow’ where emotionally escapism, excitement, and social connection can flourish unhindered. It has been established that neural change is supported when we are in safe connection with others (Wilson, 2010).

The LEGO® SERIOUS PLAY® method has become a receptacle for individuality and the acknowledgement of the value of individual thought processes. Thoughts meanings and emotions are not just held within people, rather they exist between human individualities as part of wider collective aims, values and experiences (Kristiansen and Rasmussen, 2014; Schulz and Geithner, 2014).

It is important to consider on a philosophical level how descriptions of what is real are made. Husserl’s reluctance and resistance to apply hard science to psychology was rooted in his concern that 4 purposes of adult play are especially relevant and these can be applied specifically to the LEGO® SERIOUS PLAY® method:

1) Social Bonding
2) Emotional Expression
3) Cognitive Development
4) Constructive Competition.

Historically the capacity of adults to play is driven by affective knowledge of that it of which they might wish to communicate (Sandoval, 2014). The logical conclusion is that play provides a natural setting in which a voluntary or unconscious therapeutic or cathartic experience can take place (Frick, Tardini and Cantoni, 2013; Gauntlett, 2014). Prior to this study students had already used metaphor as a mechanism of embodying abstract concepts on a cognitive level that permitted rational and objective decision making to be made (Hayes, 2015).

**Introducing the Student Cohort**

MSc Nursing students at the University of Sunderland undertake a Teaching Learning and Leadership module in order to gain experience of transformative learning processes of direct relevance to nurse education in Higher Education. The University attracts a large Nigerian contingent, which is reflected in the study, although this paper does not focus on either internationalisation or decolonisation of the curriculum at all and this participant cohort, could equally have been with any student cohort make-up in terms of nationality / ethnic background. Since the students do have shared initial experiences of the Nigerian education system though, we though it important to make this explicit. Within the module they are given practical teaching experience and have the opportunity to be critically introspective regarding their own contribution to nurse education specifically and nursing education generally. The programme offers no vocational accreditation in relation to potential employment in the UK and the majority
of students return to their international origins to become clinical or academic nursing lecturers, or to clinical managerial appointments. A major challenge of teaching transformative education to international students is delivering the concept of authenticity effectively. Since authenticity lies at the heart of effective leadership and management capability, this has clear resonance for the context of the workplace, where professionalism is characterised by acceptance of change and a capacity to contribute to a positive, aspirational workforce. The degree of self-awareness that students are facilitated in developing is pivotal to the notion of authenticity. This self-awareness emanates from the degree of critical introspection that enables students to contextualise and frame their existing knowledge in what they already know and more importantly what they don’t. This approach links explicitly to the philosophy of Social Constructivism, from which constructionist methods originate (Burr, 2015). The assumption that pre-existing knowledge is something to be built upon, following its acknowledgement via the process of experiential learning, drives the capacity students have to make meaning of their existing knowledge and provides routes to methodological approaches that support the creation, rather than the consumption of new knowledge. This focus of their education on the programme provides students with an important opportunity not only to ensure academic attainment but to embrace and encourage the notion of their role as partners in learning, both individually and as a collective group. This pedagogical project was both additive and supplantive in that the approach adopted was designed to increase awareness of the need to make meaning of experience and not just to absorb it. Enhancing student knowledge and comprehension of how meaning can be made and more importantly articulated was pivotal to the development of students’ ability in story making before they progressed to storytelling (Jenkins, 2014).

These issues are of direct relevance to the workplace. In terms of being able to identify as a reflective and more importantly critically reflexive practitioner in the workplace, the active deconstruction of experience is a pivotal process. Where mid-career professionals choose to undertake Professional Doctorate study, this has particular resonance when challenging long held pre-suppositions and assumptions is a foundational part of establishing, framing and articulating professional identity.

**Aims of the Study**

The aims of the study were threefold:

1. To explore the notion that social constructionist approaches to learning and making meaning that the LEGO® SERIOUS PLAY® method provides is actually effective in increasing the potential of the hand-mind dynamic seminally reported by Bürgi, Jacobs and Roos (2005).
2. To provide evidence of the impact of the LEGO® SERIOUS PLAY® method to the context of pedagogic practice for postgraduate nursing students.
3. To offer an insight into and illuminate the experience of an individual cohort of postgraduate nursing students for whom the LEGO® SERIOUS PLAY® method was used as a pilot study in an attempt to awaken individual epistemic cognition. This is of direct relevance to work based pedagogic practice and serves as a specific window into one specific approach.

**Background Literature**

Wider debates reveal a European tendency to reach fundamentally wrong conclusions about African students in relation to their epistemic cognitive capacity (Klineberg, 2019). Masters level study is significant in terms of its relevance to how international MSc Nursing students learn. A main focus of postgraduate level study is to enhance student capacity for higher order thinking and within nursing practice particularly to raise their ability to make clinical decisions with a high
degree of professional autonomy, upon their employment, which is automatically associated in UK culture with systematic thinking, justification and rationality (Lomer, Papatsiba and Naidoo, 2018). Generally speaking, African language and culture, in particular, is also far removed from rationality and scientific logic, in terms of expression or articulation, as evidenced by the recent work of Szilagyi (2014). This project provided a platform by which cultural implications of language could be transcended via the integration of a social constructionist and constructivist philosophies.

The Potential Impact on Nurse Professional Identity

Rasmussen et al (2018) highlighted that factors influencing RNs’ perceptions of their professional identity were synthesized into three categories: the self, the role, and the context with consequently poor alignment of these categories leading to stress, tension, and uncertainty affecting work-force retention. Continuing Professional Development (CPD) aligned to these areas is absolutely imperative in relation to how the professional identity of nurses is built and sustained, so Lego Serious Play offers one potential mechanism of facilitating this in practice. These approaches are all part of widening understanding of factors impacting on such things as career longevity and how CPD can impact upon this. Other projects reflecting the same outcomes have been conducted, albeit in different ecological contexts by Browne et al (2018) and Hoeve, Jansen and Roodbol (2014).

The concept of professional identity in health care is a global issue and one which in relation to current methodological approaches ought to be highlighted as an area of focus for health professions pedagogy. Whilst our research was undertaken in the UK with a Nigerian cohort of students, this study offers the potential for the development of professional identity to be integrated into practice based approaches to education, training and employment in the context of transformative education methodologies. What ought to be remembered in relation to work based praxis, is that whilst education as an academic discipline is a social science, so too are the fundamental relationships that shape the wholesale cultures and contexts of the workplace.

**Methods**

The sixteen students were invited to attend a LEGO® SERIOUS PLAY® (THE LEGO® SERIOUS PLAY® method) session. Sampling was entirely purposive and all students who were taking part in the module were included in the research study on a voluntary basis. A precursor to the session had been another research project where students used visual metaphors to express their personal learning journey through their academic studies (Hayes, 2015). The students were each seated in a group of 8 fellow students from their cohorts and throughout the workshop were invited to engage in activities which were introduced to them via a series of prompts and instructions. At the beginning of each new activity during the workshop, students received preparatory information in relation to what each element of building entailed. All students consented to photography and audio-recording and prior to the session to ensure informed consent about participation in the session; students were introduced to the concept of the LEGO® SERIOUS PLAY® method and the structure of the four stage process it entails, namely:

- Question
- Build
- Share
- Reflect

Upon completion of the workshops we provided each of the two groups of eight students with a focus group forum where students could provide their reflections of using the technique.
Core instructions from the LEGO® SERIOUS PLAY® method were used to drive the activity in each workshop. Instructions were divided into two distinct parts (Part A and Part B).

**Part A: Using the LEGO® SERIOUS PLAY® Method Starter Kit**

1. Initial warm up exercise which entailed passing an ambiguously shaped single piece of LEGO® around the group and asking each student what they perceived it to be named in terms of their preferred use of language. The group then undertook a discussion of how meaning is individually ascribed to objects in terms of epistemic cognition and processes of social constructivism.

Students then progressed to:

2. Metaphor Construction where they were given a basic LEGO® instruction booklet and the opportunity to build a model from the choice within it. This was allocated a time slot of 15 minutes where students could familiarise themselves with the process of building. Following this, they were given an additional 2 minutes to choose extra building bricks and adapt the model so that it represented ‘Something that represented them when they first arrived at University in the UK’. They were then allocated a minute each to verbally share their individual versions of this and to explain what the bricks represented to the rest of the group. The purpose of this was to maximise their confidence in their first experiences of building and articulating their thoughts about the physical metaphor they had built.

**Part B: Using the Landscape and Identity LEGO® SERIOUS PLAY® Method Kit**

1. Students were then requested to build a new model of their ‘Learner Identity’ detailing the characteristics and qualities they felt they possessed. This task was allocated a 15 minute time slot and then they were allocated a further 3 minutes to articulate the meaning of the object they had constructed.

2. Students then built a model of their ‘Aspirational Identity/Future Self’ where they could articulate through the building of a physical metaphor of the qualities they wished to have. They were given 3 minutes to explain their metaphors to the group.

3. Upon completion of these sessions we then audio-recorded student reflections on using the LEGO® SERIOUS PLAY® method kit in terms of how it aided their mechanisms of reflection and self-expression.

**Focus Groups as a Mechanism of Capturing Group Dialogic Feedback**

The two focus groups were provided a means of using interaction amongst the student cohort to access information that would otherwise not emerge with alternative possible mechanisms of evaluation such as semi-structured interviews (Stewart and Shamdasani, 2014; Sinatra, Kienhues, and Hofer, 2014)). This method also allowed ongoing checks of content validity as exactly what participants offered in terms of focused discussion could be confirmed, reinforced, refuted or contradicted within the two small group settings.

Since one of the researchers was familiar with both of the groups, it was anticipated that having a relaxed atmosphere within a focus group setting would also encourage students to have fun as they shared their stories, which would help the flow of discussion and build trust between the student cohort. The researchers worked together to act as moderators and most significantly time managers, who could encourage students, where necessary to stay focused on the topic so that a high degree of useful information could be obtained. A nonthreatening and non-judgemental/evaluative environment was assured through the use of student-centred
teaching in the weeks preceding the LEGO® SERIOUS PLAY® method with international postgraduate nursing students. The aim of this was to create an environment where students in the cohort felt able to freely express themselves without being overly concerned as to whether the rest of the group agreed with the opinions they proffered.

Data Analysis

The use of Situational Mapping (Clarke and Friese, 2007) enabled new and inductive categories to be established and subsequent modifications of these to be made, as advocated by Gunnarsson, Linell and Nordberg, 2014). In this sense it was not only analytically provocative as a method, it could be coupled with memoing produced at the end of each mapping session to note any new insights or to emphasise where there were evident shifts in direction. This permitted the degree of flexibility needed to examine the individual perceptions of students and the potential variation in interpreting them from the researchers’ perspectives. The process also addressed the notion of ‘analytic paralysis’ in the data analysis phase, by moving beyond truth and justification of each student’s perception to a point of epistemology (Freedman, 1983). This was significant to the study as epistemic cognition was something that the LEGO® SERIOUS PLAY® method had facilitated students in accessing. At a methodological level the researchers were research instruments in this study and situational analysis allowed acknowledgement and recognition of this process (Forgas and Williams, 2014). The embedded aspect of working with this group of students on a weekly basis meant there could effectively be no ‘tabular rasa’ stance for them in the context of the data analysis phase. The process became a mechanism of establishing core assumptions, and acknowledging the potential for their ‘intellectual wallpaper’ to frame their inductive interpretation. This phenomenon is explained by Rink as being a place where background tacit assumptions can open subconsciously and heavily influence processes of interpretation (Rink, 2008). Bias is not an issue in that the positional stance of the researchers is made from the outset—they are in fact an integral part of the research process, and as such are an embedded part of the knowledge creation process. This eliminates the need for the consideration of bias, since this interpretivist approach remains faithful to its epistemological origins. From this perspective Situational Analysis allowed the systematisation of very subjective standpoints on behalf of the researchers and the possibility of a downstream decision of content for final themes from the data analysis phase of the research (Charmaz, 2014). Since the LEGO® SERIOUS PLAY® method transcends discourse, the process acted as a simplification strategy for plotting positions articulated and not articulated through discourse, which is outlined in Figure 1 (below).
Figure 1: Messy Situational Map of Postgraduate Students’ Perceptions of the LEGO® SERIOUS PLAY® Method

Findings and Discussion
As observers of the session the findings of the session it was evident that the LEGO® SERIOUS PLAY® method kit had served to aid students in ‘finding a voice’ to articulate their metaphorical story making. The building process had provided an authentic mechanism by which students could articulate meaning through three dimensional modelling. This aided the level of authenticity that students were able to articulate in comparison to written discourse and the overall atmosphere felt more open and creative, more playful and responsive. This is consistent with the work of Augoustinos, Walker and Donaghue (2014).

Roos and Victor (1999) outlined four elements of direct relevance to collective shared dialogue of direct relevance to this study and the context of the workplace specifically, namely:

- Emotional expression
- Social bonding
- Cognitive development
- Constructive competition

This project aimed to highlight whether students perceived that the LEGO® SERIOUS PLAY® method enhanced their capacity for story making for storytelling. Left hemisphere thinking is responsible for higher order thinking such as analysis, synthesis and integration. As new knowledge and experiences are acquired the left hemisphereunpacks them and facilitates
meaning making of them in the real world. In essence, the process of play and the LEGO®
SERIOUS PLAY® method produced a micro Community of Practice and the brain built
interventions or emotional wellbeing, which had the capacity to build resilience in learners as
they progress. This is of particular importance to a profession such as nursing where resilience
in healthcare practice is of fundamental significance to reduction of the general attrition of the
nursing workforce. This has obvious relevance to the workplace and the establishment of
professional identity both on individual and collective levels.

Emergent Themes were consistent with the seminal theories of Mezirow (1991).
His work provided clear articulation of how adults learn predominantly by attributing meaning
to experience provides an overview of the dynamics of transformative learning, also of direct
relevance to learning and workplace reflexivity, the most salient of which were:

1. Raising Aspiration via Metaphorical Climbing
There are built expressions of metaphorical climbing and aspiration in relation to opportunity;
particularly in relation to aspiration and forward thinking:
Processes and iterative stages of knowing in the process of the acquisition of knowledge were
also apparent, with students stating that they regarded learning as a series of interconnected
steps rather than one leap between established points:

‘Each day I got to climb higher and higher and I want to relate
this to the transitional period where very slowly one way where
as opposed to critical analysis and critical things. I don’t just see
one thing, I see different things, I don’t just see it as one way
from A-Z, I see A, B, C, D, E and F and I want to feel like Neil
Armstrong when he reached the moon and put a flag there – then
he has ‘arrived’ – I think ‘I’ve arrived’ too! (Student A)

2. The Relative Intentionality of Learning
Student B highlighted the significance of critical reflexivity and how this influenced the capacity
for ‘meaning making’ via the LEGO® SERIOUS PLAY® method, saying,

‘It brought another meaning to learning, representing what we are
thinking about, it helped me to link the abstract to the practical
and theoretical – it made another thought come into my mind and
my inspiration sometimes came from the box itself.’ (Student B)

2. Symbolism and Representation
Framing self and holism were of significance to the processes of symbolism and
representation in the context of acknowledging and valuing the transformational impact of
the LEGO® SERIOUS PLAY® method, for example Student C said,

‘Each block gets the meaning you want it to have – I used glass as
transparency. The words/discourse aids communication playing and ad
expression – it brings abstract thinking to reality’ (Student C)

In a more metaphorical way of thinking about the process, Student D added,

‘I enjoyed teacher based learning, where we are ‘empty vessels’
– I enjoy student based learning where the teacher comes down
from the ladder and shares ideas and where we are no longer
empty vessels.’ (Student D)
3. Epistemic Cognition in the Context of Authenticity and Individualised Work

The LEGO® SERIOUS PLAY® method played a distinct role in the development of epistemic cognition for students who engaged in the study. Moshiman (2014) had previously noted that epistemology as the branch of philosophy is concerned with knowledge, especially its narrative aspects and thus the truth and justification of beliefs. The truth of this was apparent in this study too. In this sense epistemic cognition is a subset of cognition, concerning knowledge about knowledge. The normative nature of knowledge, fundamental nature of truth and justification are central to reasoning and this is apparent in the data collected from this study. This provided a broad backdrop for the examination of dual processing and cognitive development – moving from objectification to subjectification to rationalism in a two stage process. This basically recontextualised knowledge as we know it via the LEGO® SERIOUS PLAY® method and for this study provided a platform by which the two could be differentiated in terms of the contribution of each to the knowledge base.

It should also be noted, that in this context, the theoretical account of epistemic cognition and its development is only to be understood developmentally, within the context of the researchers’ knowledge and the influences they draw from it. Piaget’s (1951) developmental epistemology which highlights rationality and links it explicitly with the concept of progress, provides a useful perspective on the co-ordination of empirical (psychological) and normative (philosophical) approaches to epistemology. From this perspective epistemic cognition is very definitely a subset of metacognition within the larger whole of cognition.

This was expressed best by Student E, who stated,

‘It is awakening my cognitive learning, it was weird but… I was surprised, it was making me think fast and my cognition was being activated.’ (Student E)

Guy Claxton (2015) makes the observation that “the fact we are fundamentally doers means we are also inveterate makers”, a statement borne out by the findings of this study.

The process of learning is seen as a transformative action both personally and professionally, where facets of constructionism and constructivism could be seen in action. Since the notion of grasping concepts implies the metaphorical use of the hands, it is possible to elaborate on this to enhance relevance to work based contexts and settings. The hands are what we manipulate the world with but perhaps more significantly what we construct an inner lifeworld with, the very basis of critical introspection in critical reflective practice and personal philosophising as demonstrated by Student F, who said,

‘Mine is more a philosophy of mine that helps keep me going. I know, in this life, be it in education or wherever you find yourself you wait to self-actualise you have to be positive; you have to have a torch of positivity. The projects represent ups and downs in life where I become one step close to holding onto what I can achieve. I might be that the next step takes you to where you want to be. Learning is not something that you say ‘I am through with it’” (Student F)

The process of LEGO® SERIOUS PLAY® offered a means of demonstrating a theoretical extension of seminal work in relation to cultural and situational specificity (Piaget 1951). Cognition and action are irretrievably linked on a psychological level and it is here that the developmental psychology of social consciousness is interconnected. Constructivism and constructionism as outlined by Piaget (1951) states that human intelligence grows from the
interaction of the mind with the hand. The manipulation of objects, the construction of knowledge in the mind implies that such a vocational profession as nursing necessitates the assumption that by physically interacting with people, nurses also identify and engage epistemic cognition in practice (Moshman, 2014). Social interaction between the students mediates collective meaning making. How cognition and action converge is a process at the heart of the social level of learning. The craft of manipulating the LEGO® SERIOUS PLAY® bricks was clearly a means of mental stimulation which in effect led to transformative learning. Not only does it structure cognitive activity for students it can be used as a mechanism of facilitating critical introspection as practice for nursing students (Cavaliero, 2015).

The impact of the LEGO® SERIOUS PLAY® method in this instance was to make thought and action converge in the context of learning and teaching, as implied by the statements of the three Students (G, H and I) below,

‘It let me see that teachers are not the only source of knowledge, I learn things through groups, games not just support from the teachers’
(Student G)

‘I recognised that there were different ways by which I learned. The learning outcomes were a little bit more simplified and I realised that by clearly linking my learning outcomes to applied practice there was real scaffolding. The interactive class is the real facilitator – I can get anything I want from the internet, Building is something which is great and this approach lets me be more of who I want to be’
(Student H)

‘It isn’t just important what you are learning you need to be happy about what you are learning too’
(Student I)

Specific questions were very vivid real and immediate in the process. The temporality of reflective practice was significant consideration in making conclusions from the study. It could be an issue with current readily accepted models of reflection such as Schöns (1983) or Dewey (1933). The LEGO® SERIOUS PLAY® method appeared to offer an authentic approach with the impact of immediacy in thinking in relation to space and temporality, which is consistent with the findings of Finlay and Gough (2008). This approach adds a third dimension to working with metaphors which successfully evolved story telling but were limited in their capacity to advocate the articulation of meaning making as a collective group representing specific signature pedagogy. This was particularly evident in the comments of Students J and K,

‘I used the metaphor of peeling an onion and used it as a social object – the LEGO® SERIOUS PLAY® method meant that I could progress and visualise the things that are within my reach. It brings abstract things into reality by connecting metaphorical stories.

My model represents myself and the University. I started looking at myself from the outside in, started looking at my anxiety and who do I see? I looked at the issues of safety, scaffolding ideas, gradual move to confidence.’ (Student J)
Initially when I came to this country to start my BSc (Hons) top Up, it was like moving around offices one by one and it was not ideal for what I’m doing. ‘If you look at my model, it is like there is no moving forward, it’s not moving backwards just going around, around and around. I couldn’t figure out what is happening but due to the lecturers, I was able to pick up good things, like doing good referencing. I have to remove the two wheels from the model, you can see that actually I can move forward and even though I’m moving backward at times that is why I have someone here I can relate to and advise me on what to do and pull me up again.’ (Student K)

Table 1: Transformative Learning as Embodied Recursive Enactment

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<tr>
<th>THE SERIOUS METHOD Systems</th>
<th>LEGO® SERIOUS PLAY® Impact</th>
<th>Physiological (Experience built through Manipulation)</th>
<th>Psychological (Learning Built through Construction)</th>
<th>Social (Meaning Built through Discursive Interaction)</th>
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<td><strong>Learner Identity</strong></td>
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<td>'As the bricks clicked together I could feel and see my story as real and tangible. I could feel who I was as a learner’</td>
<td>'I definitely wouldn’t have thought about such a thing of significance without using the bricks, even choosing them had an impact on my thinking processes and it took me that step further ….'</td>
<td>'Without chatting with my peers, my story would have been lost in my own thinking process, talking brought it to life for me…’</td>
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<td></td>
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<td>(Student L)</td>
<td>(Student M)</td>
<td>(Student N)</td>
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<td><strong>Aspirational Identity</strong></td>
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<td>'I began to feel the physical sensations of concern over who I will be one day…'</td>
<td>I learned more through the LSP method than I would have done had I just mind mapped my future onto paper… it changed my perspective totally, which shocked me!’</td>
<td>I realised my value and that was humbling and something subconscious… I don’t know why, but it changed my perception of who I was for the better…’</td>
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<td></td>
<td></td>
<td>(Student G)</td>
<td>(Student A)</td>
<td>(Student D)</td>
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**Conclusion**

Primary data collection from postgraduate nursing students revealed themes of direct relevance to the adoption of specific learning and teaching methodologies. This has wider implications for work based learning, in that pedagogic practice for the workplace ought to provide an opportunity for personal transformation, which enhances both reflective and reflexive practice and processes. Without exception, students in the cohort concluded that the approach had a positive impact on their potential to increase their hand-mind dynamic. This has implications for the adoption of philosophical approaches to teaching and learning as well as their
methodological execution in learning and teaching practice. Students could recognise that the approach ‘awakened’ their capacity to think, engage and trigger deep rather than surface approaches to learning and the inherent value of epistemic cognition to this process. It was possible to understand the relationship between meaning making as perceived by students and their identity as learners and students were capable of expressing acknowledgement of the impact of the LEGO® SERIOUS PLAY® method in practice. Within curricula it has to be acknowledged that use of the LEGO® SERIOUS PLAY® method necessitates the time and investment in training instructors in order to guide and facilitate a contextual framework conducive to the integration of the facilitation process. This raises important considerations for the integration of the LEGO® SERIOUS PLAY® method within the context of different signature pedagogies and also work based contexts and settings. Nursing practice necessitates critical reflexive practice which ensures learning from experience in a profession where the use of hands in care is never refuted. As such there are direct parallels to accessing epistemic cognition and metaphorically and literally ‘grasping’ knowledge from practice so that it can be consolidated internally for integration back into practice again. There is however, no evidence from this specific study to suggest that technical psychomotor skill domain learning can be enhanced by the use of the LEGO® SERIOUS PLAY® method. This is in contrast to those signature pedagogies with a high focus on the overlap between cognitive and affective domain learning, which it can be academically debated are inseparable. Therefore its potential use cannot be underestimated at this stage of exploration of the study. The significance of using the study to explore the use of the LEGO® SERIOUS PLAY® method with a predominantly Nigerian cohort, cannot be underestimated. Nigerian culture is rooted in metaphorical storytelling and the study revealed the evident capacity that these students had for story making for storytelling, which may well have informed their capacity to engage in the process. The LEGO® SERIOUS PLAY® method proved a valuable means of transcending language and discourse when students explored their deep understanding and enjoyment of their own learning identities and their individual aspirations. From this perspective the value of social constructivist approaches, of which social constructionism is evident to pedagogic practice. Within group dynamics, the approach successfully contributed to social bonding, constructive competition. Emotional expression and cognate development from this perspective contributes directly to the body of knowledge dealing with how meaning making attributed to experience can provide an overview of the dynamics of transformative learning. The development of resilience via critical reflexivity and introspection is of significance to nursing practice and to how this might be formalised in work based practice. The approaches with this group of students provided as a means of facilitating higher order thinking necessary for students using the LEGO® SERIOUS PLAY® method to recognise their coping mechanisms and indeed the capacity of the brain for building emotional wellbeing when using the LEGO® SERIOUS PLAY® method as they progress and develop as creative learners. This was achieved by developing a micro community of practice where emotional unwrapping and deconstruction of knowledge through social and collective sharing of experience. This shared collective meant that students could engage directly in facilitating the expression of how human individualities contribute to share collective aims, values and experiences in specific signature pedagogy. It has direct relevance to how descriptions of what are real are made. It has a direct relevance to how descriptions of what is real are made. The findings of the study from this particular cohort of students are consistent with the work of Papert who first acknowledged imagination is linked unconsciously with cultural and linguistic consciousness where meaning is split into describing, creating and challenging or questioning existing approaches offers a means of moving forward and influencing future pedagogic practice. In facilitation of learning and progression there is much published evidence to suggest that the significance of epistemic cognition to learning and teaching is grossly underestimated, particularly in relation to the concept of deep learning and how best students and employees can potentially be motivated to engage at this cognitive level. Theoretically, reflection and self-
awareness contribute to students’ capacity to function at a metacognitive level and as part of the process undergo truly authentic transformative learning. On an epistemological level this is directly dependent on students’ capacity not only to acknowledge their pre-existing knowledge base but also their acknowledgement of how knowledge is socially constructed. How knowledge is interpreted during the process of transformative learning hinges on their capacity for both epistemic cognition and self-awareness. Academic learning at postgraduate level (doctoral level in particular) hinges on the capacity of students to develop a pragmatic and working knowledge of what acknowledging their epistemic cognition entails. This has important implications for those members of the work based learning community who wish to integrate everyday reflection on praxis into their ongoing processes of lifelong learning and perhaps most importantly their critical reflexive practice.

Ethical Approval for the Study
In accordance with institutional protocol, ethical approval from the University of Sunderland was obtained prior to commencement to all stages of this study.

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References


‘Understanding the Building of Professional Identities with the LEGO® SERIOUS PLAY® Method Using Situational Mapping and Analysis’

Abstract

Aim – The purpose of this pedagogical study was to explore the notion that social constructionist approaches to learning, that building with the hands provides, is a ‘technique that leverages the potential of the hand-mind dynamic’ as historically reported in the extant published literature.

Methods – The use of the LEGO® SERIOUS PLAY® (LSP) method in the context of transformative learning in Higher Education was used to drive a Situational Analysis with sixteen postgraduate nursing students, from African learning contexts. This methodological approach was to specifically explore their identity as learners and then to facilitate processes of critical introspection on social constructivist learning opportunities.

Findings – Students perceived LSP permitted a deeper level of critical introspection on their transformative learning journeys than alternative approaches such as written discourse or extended narratives could have provided. They also perceived that a major benefit of using the LSP method was that it enabled them to understand and articulate their stories more easily than if they verbally reported them first.

Conclusion – LSP was perceived as an effective vehicle for the facilitation of reflection and self-awareness, which consequently contribute to students’ capacities to function at a metacognitive level. This has the potential to contribute to authentic transformative learning. Academic learning at postgraduate level hinged on the capacity of students to develop a pragmatic and working knowledge of what acknowledging their epistemic cognition entailed.

Keywords: LEGO® SERIOUS PLAY® (LSP), Situational Analysis, Epistemic Cognition, Metacognition, Critical Introspection
'Understanding the Building of Professional Identities with the LEGO® SERIOUS PLAY® Method Using Situational Mapping and Analysis'

Introduction
The seminal work of Bürgi, Jacobs and Roos' (2005) demonstrated how iterative and recursive learning necessitates a deep engagement with both psychological and physical processes. They advocated that the hand / brain relationship is pivotal to the facilitation of all learning and that the process of extending individual epistemic cognition fuels capacity for authenticity and innovation in the context of the workplace (Wilson, 2010).

The impact of this on the capacity of students to make meaning of experience highlights the deeply important link between the hand and the brain, particularly in those instances where students move into vocational professions such as nursing and the healthcare sciences. Using the hands to care, in the context of this evidence, brings a whole new dimension to the notion of practical competence in the nursing profession. The link between the hand/brain is designated a primal component of human physiology, not only a means of manipulating the human world of reciprocal feedback and data but the demonstration of the profound interconnection of the hand and the brain on a physiological basis and psychological basis (Claxton, 2015). The hands in the development of cognition have been largely ignored in the context of Higher Education in the UK to date and methods advocating exploration of the concept such as LSP offer a means of addressing a potentially valuable mechanism in the process of learning.

Developing and enhancing practice in the context of the work place hinges on pedagogy in the sense that all work based activity depends upon the formative education of employees, which can then be transferred to different contexts, settings and situation. The formulation of professional identity is largely dependent on the culture and climate of work beyond this initial learning. This paper provides an insight into a fundamentally different methodological approach to enabling and facilitating staff in the establishment of story making for storytelling. This can become an integrated and fundamental part of critical reflexivity, stemming from everyday reflection on work based practice, which combined with these cultures and contexts can determine both the professional identity of signature pedagogies and academic disciplines such as nursing and frame the individual professional identities of staff working within these professions. In terms of facilitating capacity for change and engendering a sense of organisational belonging, pedagogy has a fundamental role to play, not only in making transformational education possible but also in facilitating staff as they bridge the theory-praxis gap in real world settings.

The Notion of ‘Serious Play’ and Key Operational Definitions
It is important to delineate between constructionism and constructivism since the two hold specific relevance for this study, yet often appear to be used interchangeably. For the purposes of this article, constructionism refers to the educational method based on Constructivist Learning Theory. The conceptual foundation of ‘serious play’ combines ideas from constructionism (Piaget 1951) and its subsequent version (Harel and Papert’s Complex Adaptive System Theory (1991) which was evaluated by Holland (1996) in terms of application to management and organisational infrastructure. In contrast to research of relevance to its original implementation in corporate business and management contexts, this study applied the concept of ‘serious play’ to learning and teaching in postgraduate level nursing (a contextually and situationally different environment). The process of the LEGO® SERIOUS PLAY® method was chosen for its specific capacity to engage students in deeper reflection and collective constructionist dialogue. In common with other adult play backdrops, LEGO® SERIOUS PLAY® method can be operationally defined as ‘play’ for the purposes of this study since it involves the imaginary, it is limited in time and space and is structured by rules (James, 2015).
Kestly (2014) provided a valuable insight into the interpersonal neurology of play, examining the subcortical motivational systems in the brain. LEGO® powerfully influences the decision making processes and fundamental behaviours that are regulated in higher brain regions. She also highlighted the notion of ‘thinking with your fingers’, where the physical processes of creation facilitate reflection which is such an integral part of the profession/vocation of any practising nurse. The interrelationship between psychology and neuroscience, cognitive processes such as learning and memory are strongly influenced by the way we use our bodies to interact with the world (Claxton, 2015). The term emergence is the hallmark of connection with right mode processing of the brain, which attends to what is happening ‘in this moment’ within the emerging flow of new experience. When added to our already active left mode this is actually the zone of creativity, which is of direct significance to the LEGO® SERIOUS PLAY® method. In turn, planning the right mode in the lead is pivotal in allowing what has not yet been thought to emerge via our hands and gives natural integration of the brain, for something never before imagined. The process of play is temporal and most specifically specific to a moment in time. It also permits the notion of ‘flow’ where emotionally escapism, excitement, and social connection can flourish unhindered. It has been established that neural change is supported when we are in safe connection with others (Wilson, 2010).

The LEGO® SERIOUS PLAY® method has become a receptacle for individuality and the acknowledgement of the value of individual thought processes. Thoughts meanings and emotions are not just held within people, rather they exist between human individualities as part of wider collective aims, values and experiences (Kristiansen and Rasmussen, 2014; Schulz and Geithner, 2014).

It is important to consider on a philosophical level how descriptions of what is real are made. Husserl’s reluctance and resistance to apply hard science to psychology was rooted in his concern that 4 purposes of adult play are especially relevant and these can be applied specifically to the LEGO® SERIOUS PLAY® method:

1) Social Bonding
2) Emotional Expression
3) Cognitive Development
4) Constructive Competition.

Historically the capacity of adults to play is driven by affective knowledge of that it of which they might wish to communicate (Sandoval, 2014). The logical conclusion is that play provides a natural setting in which a voluntary or unconscious therapeutic or cathartic experience can take place (Frick, Tardini and Cantoni, 2013; Gauntlett, 2014). Prior to this study students had already used metaphor as a mechanism of embodying abstract concepts on a cognitive level that permitted rational and objective decision making to be made (Hayes, 2015).

Introducing the Student Cohort
MSc Nursing students at the University of Sunderland undertake a Teaching Learning and Leadership module in order to gain experience of transformative learning processes of direct relevance to nurse education in Higher Education. The University attracts a large Nigerian contingent, which is reflected in the study, although this paper does not focus on either internationalisation or decolonisation of the curriculum at all and this participant cohort, could equally have been with any student cohort make-up in terms of nationality / ethnic background. Since the students do have shared initial experiences of the Nigerian education system though, we though it important to make this explicit. Within the module they are given practical teaching experience and have the opportunity to be critically introspective regarding their own contribution to nurse education specifically and nursing education generally. The programme offers no vocational accreditation in relation to potential employment in the UK and the majority...
of students return to their international origins to become clinical or academic nursing lecturers, or to clinical managerial appointments. A major challenge of teaching transformative education to international students is delivering the concept of authenticity effectively. Since authenticity lies at the heart of effective leadership and management capability, this has clear resonance for the context of the workplace, where professionalism is characterised by acceptance of change and a capacity to contribute to a positive, aspirational workforce. The degree of self-awareness that students are facilitated in developing is pivotal to the notion of authenticity. This self-awareness emanates from the degree of critical introspection that enables students to contextualise and frame their existing knowledge in what they already know and more importantly what they don’t. This approach links explicitly to the philosophy of Social Constructivism, from which constructionist methods originate (Burr, 2015). The assumption that pre-existing knowledge is something to be built upon, following its acknowledgement via the process of experiential learning, drives the capacity students have to make meaning of their existing knowledge and provides routes to methodological approaches that support the creation, rather than the consumption of new knowledge. This focus of their education on the programme provides students with an important opportunity not only to ensure academic attainment but to embrace and encourage the notion of their role as partners in learning, both individually and as a collective group. This pedagogical project was both additive and supplantive in that the approach adopted was designed to increase awareness of the need to make meaning of experience and not just to absorb it. Enhancing student knowledge and comprehension of how meaning can be made and more importantly articulated was pivotal to the development of students’ ability in story making before they progressed to storytelling (Jenkins, 2014).

These issues are of direct relevance to the workplace. In terms of being able to identify as a reflective and more importantly critically reflexive practitioner in the workplace, the active deconstruction of experience is a pivotal process. Where mid-career professionals choose to undertake Professional Doctorate study, this has particular resonance when challenging long held pre-suppositions and assumptions is a foundational part of establishing, framing and articulating professional identity.

**Aims of the Study**

The aims of the study were threefold:

1. To explore the notion that social constructionist approaches to learning and making meaning that the LEGO® SERIOUS PLAY® method provides is actually effective in increasing the potential of the hand-mind dynamic seminally reported by Bürgi, Jacobs and Roos (2005).
2. To provide evidence of the impact of the LEGO® SERIOUS PLAY® method to the context of pedagogic practice for postgraduate nursing students.
3. To offer an insight into and illuminate the experience of an individual cohort of postgraduate nursing students for whom the LEGO® SERIOUS PLAY® method was used as a pilot study in an attempt to awaken individual epistemic cognition. This is of direct relevance to work based pedagogic practice and serves as a specific window into one specific approach.

**Background Literature**

Wider debates reveal a European tendency to reach fundamentally wrong conclusions about African students in relation to their epistemic cognitive capacity (Klineberg, 2019). Masters level study is significant in terms of its relevance to how international MSc Nursing students learn. A main focus of postgraduate level study is to enhance student capacity for higher order thinking and within nursing practice particularly to raise their ability to make clinical decisions with a high
degree of professional autonomy, upon their employment, which is automatically associated in UK culture with systematic thinking, justification and rationality (Lomer, Papatsiba and Naidoo, 2018). Generally speaking, African language and culture, in particular, is also far removed from rationality and scientific logic, in terms of expression or articulation, as evidenced by the recent work of Szilagyi (2014). This project provided a platform by which cultural implications of language could be transcended via the integration of a social constructionist and constructivist philosophies.

The Potential Impact on Nurse Professional Identity

Rasmussen et al (2018) highlighted that factors influencing RNs' perceptions of their professional identity were synthesized into three categories: the self, the role, and the context with consequently poor alignment of these categories leading to stress, tension, and uncertainty affecting work-force retention. Continuing Professional Development (CPD) aligned to these areas is absolutely imperative in relation to how the professional identity of nurses is built and sustained, so Lego Serious Play offers one potential mechanism of facilitating this in practice. These approaches are all part of widening understanding of factors impacting on such things as career longevity and how CPD can impact upon this. Other projects reflecting the same outcomes have been conducted, albeit in different ecological contexts by Browne et al (2018) and Hoeve, Jansen and Roodbol (2014).

The concept of professional identity in health care is a global issue and one which in relation to current methodological approaches ought to be highlighted as an area of focus for health professions pedagogy. Whilst our research was undertaken in the UK with a Nigerian cohort of students, this study offers the potential for the development of professional identity to be integrated into practice based approaches to education, training and employment in the context of transformative education methodologies. What ought to be remembered in relation to work based praxis, is that whilst education as an academic discipline is a social science, so too are the fundamental relationships that shape the wholesale cultures and contexts of the workplace.

Methods

The sixteen students were invited to attend a LEGO® SERIOUS PLAY® (THE LEGO® SERIOUS PLAY® method) session. Sampling was entirely purposive and all students who were taking part in the module were included in the research study on a voluntary basis. A precursor to the session had been another research project where students used visual metaphors to express their personal learning journey through their academic studies (Hayes, 2015). The students were each seated in a group of 8 fellow students from their cohorts and throughout the workshop were invited to engage in activities which were introduced to them via a series of prompts and instructions. At the beginning of each new activity during the workshop, students received preparatory information in relation to what each element of building entailed. All students consented to photography and audio-recording and prior to the session to ensure informed consent about participation in the session; students were introduced to the concept of the LEGO® SERIOUS PLAY® method and the structure of the four stage process it entails, namely:

- Question
- Build
- Share
- Reflect

Upon completion of the workshops we provided each of the two groups of eight students with a focus group forum where students could provide their reflections of using the technique.
Core instructions from the LEGO® SERIOUS PLAY® method were used to drive the activity in each workshop. Instructions were divided into two distinct parts (Part A and Part B).

**Part A: Using the LEGO® SERIOUS PLAY® Method Starter Kit**

1. Initial warm up exercise which entailed passing an ambiguously shaped single piece of LEGO® around the group and asking each student what they perceived it to be named in terms of their preferred use of language. The group then undertook a discussion of how meaning is individually ascribed to objects in terms of epistemic cognition and processes of social constructivism.

Students then progressed to:

2. Metaphor Construction where they were given a basic LEGO® instruction booklet and the opportunity to build a model from the choice within it. This was allocated a time slot of 15 minutes where students could familiarise themselves with the process of building. Following this, they were given an additional 2 minutes to choose extra building bricks and adapt the model so that it represented ‘Something that represented them when they first arrived at University in the UK’. They were then allocated a minute each to verbally share their individual versions of this and to explain what the bricks represented to the rest of the group. The purpose of this was to maximise their confidence in their first experiences of building and articulating their thoughts about the physical metaphor they had built.

**Part B: Using the Landscape and Identity LEGO® SERIOUS PLAY® Method Kit**

1. Students were then requested to build a new model of their ‘Learner Identity’ detailing the characteristics and qualities they felt they possessed. This task was allocated a 15 minute time slot and then they were allocated a further 3 minutes to articulate the meaning of the object they had constructed.

2. Students then built a model of their ‘Aspirational Identity/Future Self’ where they could articulate through the building of a physical metaphor of the qualities they wished to have. They were given 3 minutes to explain their metaphors to the group.

3. Upon completion of these sessions we then audio-recorded student reflections on using the LEGO® SERIOUS PLAY® method kit in terms of how it aided their mechanisms of reflection and self-expression.

**Focus Groups as a Mechanism of Capturing Group Dialogic Feedback**

The two focus groups were provided a means of using interaction amongst the student cohort to access information that would otherwise not emerge with alternative possible mechanisms of evaluation such as semi-structured interviews (Stewart and Shamdasani, 2014; Sinatra, Kienhues, and Hofer, 2014)). This method also allowed ongoing checks of content validity as exactly what participants offered in terms of focused discussion could be confirmed, reinforced, refuted or contradicted within the two small group settings.

Since one of the researchers was familiar with both of the groups, it was anticipated that having a relaxed atmosphere within a focus group setting would also encourage students to have fun as they shared their stories, which would help the flow of discussion and build trust between the student cohort. The researchers worked together to act as moderators and most significantly time managers, who could encourage students, where necessary to stay focused on the topic so that a high degree of useful information could be obtained. A nonthreatening and non-judgemental/evaluative environment was assured through the use of student centred
teaching in the weeks preceding the LEGO® SERIOUS PLAY® method with international postgraduate nursing students. The aim of this was to create an environment where students in the cohort felt able to freely express themselves without being overly concerned as to whether the rest of the group agreed with the opinions they proffered.

Data Analysis
The use of Situational Mapping (Clarke and Friese, 2007) enabled new and inductive categories to be established and subsequent modifications of these to be made, as advocated by Gunnarsson, Linell and Nordberg, 2014). In this sense it was not only analytically provocative as a method, it could be coupled with memoing produced at the end of each mapping session to note any new insights or to emphasise where there were evident shifts in direction. This permitted the degree of flexibility needed to examine the individual perceptions of students and the potential variation in interpreting them from the researchers’ perspectives. The process also addressed the notion of ‘analytic paralysis’ in the data analysis phase, by moving beyond truth and justification of each student’s perception to a point of epistemology (Freedman, 1983). This was significant to the study as epistemic cognition was something that the LEGO® SERIOUS PLAY® method had facilitated students in accessing. At a methodological level the researchers were research instruments in this study and situational analysis allowed acknowledgement and recognition of this process (Forgas and Williams, 2014). The embedded aspect of working with this group of students on a weekly basis meant there could effectively be no ‘tabular rasa’ stance for them in the context of the data analysis phase. The process became a mechanism of establishing core assumptions, and acknowledging the potential for their ‘intellectual wallpaper’ to frame their inductive interpretation. This phenomenon is explained by Rink as being a place where background tacit assumptions can open subconsciously and heavily influence processes of interpretation (Rink, 2008). Bias is not an issue in that the positional stance of the researchers is made from the outset – they are in fact an integral part of the research process, and as such are an embedded part of the knowledge creation process. This eliminates the need for the consideration of bias, since this interpretivist approach remains faithful to its epistemological origins. From this perspective Situational Analysis allowed the systematisation of very subjective standpoints on behalf of the researchers and the possibility of a downstream decision of content for final themes from the data analysis phase of the research (Charmaz, 2014). Since the LEGO® SERIOUS PLAY® method transcends discourse, the process acted as a simplification strategy for plotting positions articulated and not articulated through discourse, which is outlined in Figure 1 (below).
Findings and Discussion

As observers of the session the findings of the session it was evident that the LEGO® SERIOUS PLAY® method kit had served to aid students in ‘finding a voice’ to articulate their metaphorical story making. The building process had provided an authentic mechanism by which students could articulate meaning through three dimensional modelling. This aided the level of authenticity that students were able to articulate in comparison to written discourse and the overall atmosphere felt more open and creative, more playful and responsive. This is consistent with the work of Augoustinos, Walker and Donaghue (2014).

Roos and Victor (1999) outlined four elements of direct relevance to collective shared dialogue of direct relevance to this study and the context of the workplace specifically, namely:

- Emotional expression
- Social bonding
- Cognitive development
- Constructive competition

This project aimed to highlight whether students perceived that the LEGO® SERIOUS PLAY® method enhanced their capacity for story making for storytelling. Left hemisphere thinking is responsible for higher order thinking such as analysis, synthesis and integration. As new knowledge and experiences are acquired the left hemisphere unpacks them and facilitates

Figure 1: Messy Situational Map of Postgraduate Students’ Perceptions of the LEGO® SERIOUS PLAY® Method
meaning making of them in the real world. In essence, the process of play and the LEGO® SERIOUS PLAY® method produced a micro Community of Practice and the brain built interventions or emotional wellbeing, which had the capacity to build resilience in learners as they progress. This is of particular importance to a profession such as nursing where resilience in healthcare practice is of fundamental significance to reduction of the general attrition of the nursing workforce. This has obvious relevance to the workplace and the establishment of professional identity both on individual and collective levels.

Emergent Themes were consistent with the seminal theories of Mezirow (1991). His work provided clear articulation of how adults learn predominantly by attributing meaning to experience provides an overview of the dynamics of transformative learning, also of direct relevance to learning and workplace reflexivity, the most salient of which were:

1. Raising Aspiration via Metaphorical Climbing
There are built expressions of metaphorical climbing and aspiration in relation to opportunity; particularly in relation to aspiration and forward thinking:
Processes and iterative stages of knowing in the process of the acquisition of knowledge were also apparent, with students stating that they regarded learning as a series of interconnected steps rather than one leap between established points:

‘Each day I got to climb higher and higher and I want to relate this to the transitional period where very slowly one way where as opposed to critical analysis and critical things. I don’t just see one thing, I see different things, I don’t just see it as one way from A-Z, I see A, B, C, D, E and F and I want to feel like Neil Armstrong when he reached the moon and put a flag there – then he has ’arrived’ – I think ’I’ve arrived’ too! (Student A)

2. The Relative Intentionality of Learning
Student B highlighted the significance of critical reflexivity and how this influenced the capacity for ’meaning making’ via the LEGO® SERIOUS PLAY® method, saying,

‘It brought another meaning to learning, representing what we are thinking about, it helped me to link the abstract to the practical and theoretical – it made another thought come into my mind and my inspiration sometimes came from the box itself.’ (Student B)

2. Symbolism and Representation
Framing self and holism were of significance to the processes of symbolism and representation in the context of acknowledging and valuing the transformational impact of the LEGO® SERIOUS PLAY® method, for example Student C said,

‘Each block gets the meaning you want it to have – I used glass as transparency. The words/discourse aids communication playing and ad expression – it brings abstract thinking to reality’ (Student C)

In a more metaphorical way of thinking about the process, Student D added,

‘I enjoyed teacher based learning, where we are ’empty vessels’ – I enjoy student based learning where the teacher comes down from the ladder and shares ideas and where we are no longer empty vessels.’ (Student D)
3. Epistemic Cognition in the Context of Authenticity and Individualised Work

The LEGO® SERIOUS PLAY® method played a distinct role in the development of epistemic cognition for students who engaged in the study. Moshiman (2014) had previously noted that epistemology as the branch of philosophy is concerned with knowledge, especially its narrative aspects and thus the truth and justification of beliefs. The truth of this was apparent in this study too. In this sense epistemic cognition is a subset of cognition, concerning knowledge about knowledge. The normative nature of knowledge, fundamental nature of truth and justification are central to reasoning and this is apparent in the data collected from this study. This provided a broad backdrop for the examination of dual processing and cognitive development – moving from objectification to subjectification to rationalism in a two stage process. This basically reconceptualised knowledge as we know it via the LEGO® SERIOUS PLAY® method and for this study provided a platform by which the two could be differentiated in terms of the contribution of each to the knowledge base.

It should also be noted, that in this context, the theoretical account of epistemic cognition and its development is only to be understood developmentally, within the context of the researchers’ knowledge and the influences they draw from it. Piaget’s (1951) developmental epistemology which highlights rationality and links it explicitly with the concept of progress, provides a useful perspective on the co-ordination of empirical (psychological) and normative (philosophical) approaches to epistemology. From this perspective epistemic cognition is very definitely a subset of metacognition within the larger whole of cognition.

This was expressed best by Student E, who stated,

‘It is awakening my cognitive learning, it was weird but… I was surprised, it was making me think fast and my cognition was being activated.’ (Student E)

Guy Claxton (2015) makes the observation that ‘the fact we are fundamentally doers means we are also inveterate makers’, a statement borne out by the findings of this study.

The process of learning is seen as a transformative action both personally and professionally, where facets of constructionism and constructivism could be seen in action. Since the notion of ‘grasping concepts’ implies the metaphorical use of the hands, it is possible to elaborate on this to enhance relevance to work based contexts and settings. The hands are what we manipulate the world with but perhaps more significantly what we construct an inner lifeworld with, the very basis of critical introspection in critical reflective practice and personal philosophising as demonstrated by Student F, who said,

‘Mine is more a philosophy of mine that helps keep me going. I know, in this life, be it in education or wherever you find yourself you wait to self-actualise you have to be positive; you have to have a torch of positivity. The projects represent ups and downs in life where I become one step close to holding onto what I can achieve. I might be that the next step takes you to where you want to be. Leaning is not something that you say ‘I am through with it” (Student F)

The process of LEGO® SERIOUS PLAY® offered a means of demonstrating a theoretical extension of seminal work in relation to cultural and situational specificity (Piaget 1951). Cognition and action are irretrievably linked on a psychological level and it is here that the developmental psychology of social consciousness is interconnected. Constructivism and constructionism as outlined by Piaget (1951) states that human intelligence grows from the
interaction of the mind with the hand. The manipulation of objects, the construction of knowledge in the mind implies that such a vocational profession as nursing necessitates the assumption that by physically interacting with people, nurses also identify and engage epistemic cognition in practice (Moshman, 2014). Social interaction between the students mediates collective meaning making. How cognition and action converge is a process at the heart of the social level of learning. The craft of manipulating the LEGO® SERIOUS PLAY® bricks was clearly a means of mental stimulation which in effect led to transformative learning. Not only does it structure cognitive activity for students it can be used as a mechanism of facilitating critical introspection as practice for nursing students (Cavaliero, 2015).

The impact of the LEGO® SERIOUS PLAY® method in this instance was to make thought and action converge in the context of learning and teaching, as implied by the statements of the three Students (G, H and I) below,

‘It let me see that teachers are not the only source of knowledge, I learn things through groups, games not just support from the teachers’
(Student G)

‘I recognised that there were different ways by which I learned. The learning outcomes were a little bit more simplified and I realised that by clearly linking my learning outcomes to applied practice there was real scaffolding. The interactive class is the real facilitator – I can get anything I want from the internet, Building is something which is great and this approach lets me be more of who I want to be’
(Student H)

‘It isn’t just important what you are learning you need to be happy about what you are learning too’
(Student I)

Specific questions were very vivid real and immediate in the process. The temporality of reflective practice was significant consideration in making conclusions from the study. It could be an issue with current readily accepted models of reflection such as Schön (1983) or Dewey (1933). The LEGO® SERIOUS PLAY® method appeared to offer an authentic approach with the impact of immediacy in thinking in relation to space and temporality, which is consistent with the findings of Finlay and Gough (2008). This approach adds a third dimension to working with metaphors which successfully evolved story telling but were limited in their capacity to advocate the articulation of meaning making as a collective group representing specific signature pedagogy. This was particularly evident in the comments of Students J and K,

‘I used the metaphor of peeling an onion and used it as a social object – the LEGO® SERIOUS PLAY® method meant that I could progress and visualise the things that are within my reach. It brings abstract things into reality by connecting metaphorical stories.
My model represents myself and the University. I started looking at myself from the outside in, started looking at my anxiety and who do I see? I looked at the issues of safety, scaffolding ideas, gradual move to confidence.’
(Student J)
Initially when I came to this country to start my BSc (Hons) top Up, it was like moving around offices one by one and it was not ideal for what I'm doing. ‘If you look at my model, it is like there is no moving forward, it’s not moving backwards just going around, around and around. I couldn’t figure out what is happening but due to the lecturers, I was able to pick up good things, like doing good referencing. I have to remove the two wheels from the model, you can see that actually I can move forward and even though I’m moving backward at times that is why I have someone here I can relate to and advise me on what to do and pull me up again.’ *(Student K)*

### Table 1: Transformative Learning as Embodied Recursive Enactment

<table>
<thead>
<tr>
<th>THE SERIOUS METHOD Systems</th>
<th>LEGO® SERIOUS PLAY® Impact</th>
<th>Physiological (Experience built through Manipulation)</th>
<th>Psychological (Learning Built through Construction)</th>
<th>Social (Meaning Built through Discursive Interaction)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learner Identity</strong></td>
<td></td>
<td>'As the bricks clicked together I could feel and see my story as real and tangible. I could feel who I was as a learner' <em>(Student L)</em></td>
<td>'I definitely wouldn’t have thought about such a thing of significance without using the bricks, even choosing them had an impact on my thinking processes and it took me that step further ....' <em>(Student M)</em></td>
<td>'Without chatting with my peers, my story would have been lost in my own thinking process, talking brought it to life for me…' <em>(Student N)</em></td>
</tr>
<tr>
<td><strong>Aspirational Identity</strong></td>
<td></td>
<td>'I began to feel the physical sensations of concern over who I will be one day…' <em>(Student G)</em></td>
<td>I learned more through the LSP method than I would have done had I just mind mapped my future onto paper… it changed my perspective totally, which shocked me!' <em>(Student A)</em></td>
<td>I realised my value and that was humbling and something subconscious… I don’t know why, but it changed my perception of who I was for the better…' <em>(Student D)</em></td>
</tr>
</tbody>
</table>

### Conclusion

Primary data collection from postgraduate nursing students revealed themes of direct relevance to the adoption of specific learning and teaching methodologies. This has wider implications for work based learning, in that pedagogic practice for the workplace ought to provide an opportunity for personal transformation, which enhances both reflective and reflexive practice and processes. Without exception, students in the cohort concluded that the approach had a positive impact on their potential to increase their hand-mind dynamic. This has implications for the adoption of philosophical approaches to teaching and learning as well as their
methodological execution in learning and teaching practice. Students could recognise that the approach ‘awakened’ their capacity to think, engage and trigger deep rather than surface approaches to learning and the inherent value of epistemic cognition to this process. It was possible to understand the relationship between meaning making as perceived by students and their identity as learners and students were capable of expressing acknowledgement of the impact of the LEGO® SERIOUS PLAY® method in practice. Within curricula it has to be acknowledged that use of the LEGO® SERIOUS PLAY® method necessitates the time and investment in training instructors in order to guide and facilitate a contextual framework conducive to the integration of the facilitation process. This raises important considerations for the integration of the LEGO® SERIOUS PLAY® method within the context of different signature pedagogies and also work based contexts and settings. Nursing practice necessitates critical reflexive practice which ensures learning from experience in a profession where the use of hands in care is never refuted. As such there are direct parallels to accessing epistemic cognition and metaphorically and literally ‘grasping’ knowledge from practice so that it can be consolidated internally for integration back into practice again. There is however, no evidence from this specific study to suggest that technical psychomotor skill domain learning can be enhanced by the use of the LEGO® SERIOUS PLAY® method. This is in contrast to those signature pedagogies with a high focus on the overlap between cognitive and affective domain learning, which it can be academically debated are inseparable. Therefore its potential use cannot be underestimated at this stage of exploration of the study. The significance of using the study to explore the use of the LEGO® SERIOUS PLAY® method with a predominantly Nigerian cohort, cannot be underestimated. Nigerian culture is rooted in metaphorical storytelling and the study revealed the evident capacity that these students had for story making for storytelling, which may well have informed their capacity to engage in the process. The LEGO® SERIOUS PLAY® method proved a valuable means of transcending language and discourse when students explored their deep understanding and enjoyment of their own learning identities and their individual aspirations. From this perspective the value of social constructivist approaches, of which social constructionism is evident to pedagogic practice. Within group dynamics, the approach successfully contributed to social bonding, constructive competition. Emotional expression and cognate development from this perspective contributes directly to the body of knowledge dealing with how meaning making attributed to experience can provide an overview of the dynamics of transformative learning.

The development of resilience via critical reflexivity and introspection is of significance to nursing practice and to how this might be formalised in work based practice. The approaches with this group of students provided as a means of facilitating higher order thinking necessary for students using the LEGO® SERIOUS PLAY® method to recognise their coping mechanisms and indeed the capacity of the brain for building emotional wellbeing when using the LEGO® SERIOUS PLAY® method as they progress and develop as creative learners. This was achieved by developing a micro community of practice where emotional unwrapping and deconstruction of knowledge through social and collective sharing of experience. This shared collective meant that students could engage directly in facilitating the expression of how human individualities contribute to share collective aims, values and experiences in specific signature pedagogy. It has direct relevance to how descriptions of what are real are made. It has a direct relevance to how descriptions of what is real are made. The findings of the study from this particular cohort of students are consistent with the work of Papert who first acknowledged imagination is linked unconsciously with cultural and linguistic consciousness where meaning is split into describing, creating and challenging or questioning existing approaches offers a means of moving forward and influencing future pedagogic practice. In facilitation of learning and progression there is much published evidence to suggest that the significance of epistemic cognition to learning and teaching is grossly underestimated, particularly in relation to the concept of deep learning and how best students and employees can potentially be motivated to engage at this cognitive level. Theoretically, reflection and self-
awareness contribute to students’ capacity to function at a metacognitive level and as part of
the process undergo truly authentic transformative learning. On an epistemological level this is
directly dependent on students’ capacity not only to acknowledge their pre-existing knowledge
base but also their acknowledgement of how knowledge is socially constructed. How
knowledge is interpreted during the process of transformative learning hinges on their capacity
for both epistemic cognition and self-awareness. Academic learning at postgraduate level
(doctoral level in particular) hinges on the capacity of students to develop a pragmatic and
working knowledge of what acknowledging their epistemic cognition entails. This has important
implications for those members of the work based learning community who wish to integrate
everyday reflection on praxis into their ongoing processes of lifelong learning and perhaps most
importantly their critical reflexive practice.

Ethical Approval for the Study
In accordance with institutional protocol, ethical approval from the University of Sunderland was
obtained prior to commencement to all stages of this study.

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