Emergent Professional Learning (EPL)

Positioning emergent professional learning as a catalyst for meaning making in agile work praxis

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Supervisor: Professor P H Du Toit

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Declaration of Originality

I, the undersigned, declare that the work contained in this dissertation is my own original work and that it has not previously, in its entirety or part, submitted for a degree to any other university. All material contained in this dissertation has been duly acknowledged.

Henk Viljoen

1 July 2021

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Ethics Statement

The author, whose name appears on the title page of this thesis, has obtained, for the research described in this work, the applicable research ethics approval. The author declares that he has observed the ethical standards required in terms of the University of Pretoria's Code of ethics for researchers and the Policy guidelines for responsible research.

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Abstract

The COVID-19 pandemic of 2020 added new urgency to the evolution of a knowledge landscape rethink. Knowledge creators, consumers and facilitators had to function in an unfamiliar, complex and challenging context. The realisation that contemporary knowledge formation, actuality and continuation were fast becoming obsolete required learning institutions to reinvent the rubrics of knowledge creation, which requires a radical change in the knowledge economy characterised by enablement, organic co-construction, fluidity and new meaning making in a future of Agile operation and education facilitation.

This thesis explores one of the myriad challenges faced by contemporary knowledge organisations. Novel views of meaning making lead to a proposed model that could serve as a catalyst for Emergent Professional Learning (EPL). EPL is positioned in the discipline of learning facilitation with the intent to propagate a new thinking methodology regarding the establishment of sustainable, progressive knowledge commodities. It establishes a full-fledged, integrated co-constructive approach that presents itself living within a broadly established knowledge base framework that aim to identify new creative and encouraging initiatives within the transforming knowledge creation structures of postmodern knowledge organisations. This study is founded on an transdisciplinary epistemological research method that will explore theorems that may enable EPL.

This research challenge evokes fresh and challenging grand narratives as the researcher attempts to use and deploy a variety of epistemologically grounded research methodologies. According to Leibold, Probst and Gibbert (2015), it has become progressively clear to the researcher that South Africa's economic crisis and political climate is not conducive to curriculum development and design sustainability. Additionally, the present pandemic has an impact on and demands the creation of enhanced Agile learning.

As such, the researcher purposefully builds on and refers to Leipold *et al.'s* seminal work on meaning making and knowledge transfer in order to establish a formal epistemological foundation for addressing the complexities of South African emergent professional learning challenges in the pursuit of Agile practice.

It is argued that new forms of human capital are now needed to manifest the intellectual capacity through mobilising the facilitation of knowledge generating catalysts, envisioning the possibility of creating antifragile EPL attributes. It is proposed that knowledge-driven institutions are urged to identify new leadership characteristics to yield and reconstruct these innovative meaning making solutions into knowledge activities, thereby positioning environments that allow socialising, transfer and construction of the future landscape of learning facilitation. The research results indicate that the ideal solution for future knowledge-driven institutions would be one where leadership understands the paramount importance of knowledge and then nurtures its source: the knowledge worker.

The new role for leadership is that of coaches and facilitators who invite knowledge workers to co-define the knowledge intent of the organisation and who encourage co-operation through multi-lateral communication and codetermination. The collaborative relationship between the knowledge worker and leadership is therefore crucial to establish formal communities of practice.

It is pivotal for organisations to position and foster these formal knowledge communities as a the process of continuous reinvention and enable the meaning making shifts that are essential to drive new EPL. Formal knowledge-sharing establishments should facilitate progressive mindsets aligned to encourage psychological responsibility, ownership and custodianship of new meaning making, where all role players are inextricably interlinked on an integral scale, rapidly changing the future workspace within an ecological thinking framework.

These insights prompted the formulation of a EPL framework that transcends the traditional knowledge establishment criterion through the application of intellective influencers, complemented by the inclusion and merging of human ontogeny (M1-3). The actualisation and application of the newly composed EPL framework positions itself as a malleable, principle-based approach that could render knowledge creation designs uniquely crafted to stimulate the exploration of future meaning making.

New ways must be found to meet future educational challenges and modes of facilitating learning that could support the content designer to deal with new, unprecedented conditions – "Liquid Modernity" – and to position EPL so as to establish Liquid Modernity as a pan disciplinary insight for the next generation of academic curriculum development and design (Caldwell and Henry, 2020; Bouman, 2013).

This thesis endeavours to offer an alternative vision of sensemaking regarding the future, where knowledge transfer organisations can apply EPL as an alternative tool for co-designing the learning curriculum. This will require transformational leaders who are willing to search for new ways to anticipate the future of knowledge design.

Key Terms

Agile

Antifragility

Emergent professional learning

Ethnography

Knowledge creation

Knowledge workers

Learning theories

Meaning making

Sense making entities

Transformational leadership

Way of work

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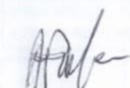Fax. +27 12 654 4855

DECLARATION OF EDITING

This is to certify that on 23/11/2020 I completed a language edit on the dissertation

Emergent Professional Learning (EPL)

Positioning Emergent Professional Learning as a catalyst for Meaning Making in Agile work praxis

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Abbreviations

ACOP	Agile community of practice
B. Tech	Bachelor of technology
BA	Business analyst
BTS	Momentum retail business and technology solutions department
COP	Community of practice
DevOps	Development operations
EPL	Emergent professional learning
LCT	Legitimate code theory
PCAR	Participative co-constructive action research
PDCA	Plan, do, check, act
SAFe	Scaled agile framework
SE	Sense making entities
VUCA	Volatility, uncertainty, complexity, ambiguity
WOW	Way of work

Glossary

Agile maturity	Refers to the SEs' Agile ability regarding way of work, speed to market delivery, efficacy of output, team culture, technical capabilities and decision making.
Antifragility	Antifragility is a property of systems in which they increase in capability to thrive because of stressors, shocks, volatility, noise, mistakes, faults, attacks, or failures (Taleb, 2012).
Ba	"Ba" can be thought of as a shared space for emerging relationships. This space can be physical (e.g. office, dispersed business space), virtual (e.g. email, teleconference), mental (e.g. shared experiences, ideas, ideals) or any combination of them. Ba provides a platform for advancing individual and/or collective knowledge (Nonaka, 2008).
Bodhi artisans	Sanskrit and Pāli: "awakening," "enlightenment", in Buddhism, the final enlightenment. In context of EPL those in seek of new knowledge as measure of self-actualisation (Anālayo, 2021).
Co-constructors	Indicates that all participants, by self-selection of being present knowingly or unknowingly contribute in enlarging the body of knowledge.
DevOps	DevOps is a term that refers to a group of practices for integrating software development and information technology

	operations. It aims to shorten the time of the systems development life cycle and to produce high-quality software on a continual basis. DevOps is a component of Agile software development as several of the features of DevOps originated in the Agile methodology (Tengstrand, Tomaszewski, Borg and Jabangwe, 2021).
DevSecOps	DevSecOps is a technique for managing information technology security from a "everyone is accountable for security" perspective. It includes incorporating security concepts into an organisation's DevOps workflow. The objective is to include security into all phases of the software development lifecycle (Tengstrand, *et al.,* 2021).
Emergent professional learning.	In this research refers to new, unexpected insights of meaning making created that could be utilised as sense making agent future professional workplace transformations and progression.
Fourth-generation metaknowledge creation	Refers to the characteristics, formation and development of knowledge. The creation of new knowledge with particular focus on the leader's influence and culture created. First -generation knowledge creation refers to an autocratic command and control system where Fourth-generation refers to an open for a for knowledge sharing, and autonomy.
Kanban	Kanban is a framework for implementing agile in software development practices.

	This requires real-time capacity communication and complete transparency of activities. A visual representation of work items on a Kanban board enables team members to view the status of any piece of work at any time (Agile Alliance, 2018; Leopold, 2017).
Knowledge creation	Refers to the formation of new notions and concepts. This occurs through interactions between explicit and tacit knowledge.
LCT	Legitimate code theory – transcends, extends and integrates insights to offer a framework for research and practice that overcomes segmentalising (Maton, Hood, and Shay, 2015).
Lean coffee	A Lean coffee is a semi formal meeting in which participants choose the topics they want to discuss, vote for the topics and then discuss according to the most voted topics during a limited time period. The group decides to continue or switch to the next topic dependant on a "yay/nay" re-vote for continuation (Cooper and Sommer, 2016).
Living theory	Living Educational Theory (Living Theory) approach focuses attention on the experiences and implications of living values that carry hope for the flourishing of humanity (McNiff, 2014).
Meaning making	The process of transforming information toward a more deep understanding that could be disseminated, networked, and applied (McTighe and Silver, 2020).

Nomadic theory	Nomadic theory is the application of fundamental data collecting principles such as singularity and multiplicity, interdependence, and interconnection. Nomadic subjects and theories construct and actualise an assemblage that emphasises movement and mobility at the center of thought (Briadotti, 2011; Flint, 2020).
PDCA	Deming quality model used in business for the control and continual improvement of processes and products. Plan, do, check, act cycle (Verna, 2020).
Postmodern	Postmodernism in this research context accentuates the criticality of knowledge in all of its manifestations–from the everyday life experience of distinct social communities and appreciates the to the more abstract artistic, intellectual, and scholarly ventures–indicating the transformations that affect the production, dissemination, and consumption of new knowledge (Boyne and Rattansi, 2017; Sani, Ekowati, Wekke and Idris, 2018).
Progressive	In this research Progressive implies, being enlightened, forward-looking, dynamic and modern.
SAFe	The Scaled agile framework is a set of organisation and workflow patterns intended to guide enterprises in scaling lean and agile practices (Tengstrand, Tomaszewski, Borg, and Jabangwe, 2021).

Scrum	Scrum is a subset of Agile. It is a lightweight process framework providing value delivery in iterative cadence (Leopold, 2017).
SE	Sense making Entities-knowledge workers, organisations, learning institutions that actively pursue new knowledge creation, the interpretation, socialisation and co-construction of new meaning.
SECI model	The SECI model of knowledge dimensions is a model of knowledge creation that explains how tacit and explicit knowledge are converted into organisational knowledge (Nonaka, 2017).
Sense making	This term refers to knowledge workers within the organisation who obtain insight via framing, analysing, and comprehending multi-layered and complicated challenges, particularly those relevant to sustainable change. This value-based social process of organisational sense making enables the formulation of collective action (Seidel, Chandra Kruse, Székely, Gau and Stieger, 2018).
Transformational leadership	Transformational leadership is a leadership theory in which a leader collaborates with teams to identify opportunities for improvement, develops a vision to guide the change through inspiration, and then executes the change in collaboration with committed members of that group (Bass and

	Riggio, 2006; Majeed and Jamshed, 2021; Reza, 2019).
Transformative Leadership	Leadership and governance that incorporates an integrative theory of ethical stewardship that can assist professionals more effectively accomplishing efficiencies, establishing stakeholder commitment and trust, and generating valuable synergies (Shields, 2017, 2020).
WOW	Way of work–in this study refers to the method of undertaking daily functions and the methodologies applied in completion of tasks.

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A life of survival isn't uncommon to humanity.

It's the norm.

But the economic and social progress that we've been making over the past few centuries hasn't

been only about survival.

It's about opening new doors.

To focus less on mere survival, and more on finding new meaning.

Rami Malek (2020)

Introduction

"Some things benefit from shocks; they thrive and grow when exposed to volatility, randomness, disorder, stressors and love, adventure, risk, and uncertainty,"

Taleb, 2012

In today's world, highly improbable and unpredictable events underlie almost everything in our emerging future. We live in unprecedented times with few or no answers or insight. This research endeavour intends to explore this uncertainty, not only to survive, to just about make it, but also to provide insight into new meaning making modalities of this Agile professional workplace landscape. Covid 19 has increased uncertainty, unambiguity and tenure in the world of knowledge creation (Forsyth, 2020; Hadar, Ergas, Alper and Ariav, 2020) which is directly influencing the current transitional economic environment and generating dynamics where decision-making is reaching a critical tipping point.

This unprecedented, new landscape has created an urgent need for all SEs' (sense making entities) to rethink the world of meaning, as the current social and economic situation demands participative decision-making and knowledge embodiment within a psychological ownership perspective. Psychological responsibility, ownership and custodianship as co-constructive mechanisms for new meaning making inextricably interlink all role players as inhabitants on an integral scale (Wilber, 2018). A vision of inclusivity and ecological self-writing (Foucault in Paras, 2020) to collectively anticipate a new future is envisioned (Scott, 2015; Nielsen, 2020). This notion is supported by current research, which produces evidence that a new methodology of learning and education is now required (McFarland, Hussar, Wang, Zhang, Wang, Rathbun, Barmer, Cataldi and Mann, 2018; Robinson, 2018) to facilitate novel mindsets aligned to a rapidly changing future of work amidst an ecological thinking framework (Bolman and Deal, 2017; Kelly, Ryan, Altmann and Stelzner, 2018). For complementary insight, refer to Annexure A1: the Babylonian Epic of Creation.

At present, contemporary twenty-first-century sense making entities (SEs), viz. companies, knowledge workers, creators and bodhi artisans, the craftsmen of knowledge and learning – those who are mindful and conscious – are obliged to function in a dynamic and demanding unfamiliar chaotic climate (Meadows, Meadows and Randers, 1992; Robinson, 2018; Teece, Pisano and

Shuen, 1997). These SEs are facing increased turbulence (Adler, 2017; Read, 2020), complexity and chaos (Davenport, 2010; Hadar *et al.*, 2020; Porter, 1989; 2011), which – in its extreme form – is categorised as hypercompetition (Briggs and Peat, 1989; D'aveni, 2010; Denning, 2018). Hypercomplexity and ultra-competitiveness necessitate renegotiation of a proactive approach and understanding that embrace the transcendence of traditional learning (Sharma and Kodali, 2018; Selgert, 2020; Snowden, 2006). This novel approach is aligned with a global "new think" (Taleb, 2012). The global new think can lead to an integral and intentional emerging journey which eliminates contemporary learning facilitation (Robinson, 2018) and facilitates a collective canvas for new meaning making theorems as proposed by Spaull and Jansen (2019), especially in the understanding of the present, with the possibility of crafting new future possibilities (Park, 2016).

In this state of chaos, in which no cause-and-effect relationships are perceivable and where crisis management trumps sensibility and rationale, a distinctive discernment is required (Snowden, 2006). Here a new way of thinking has become an imperative. The urgency of transforming the perceptions of contemporary economics (Barney, 2014; Teece *et al.,* 1997) and of challenging ingrained leadership and existing wisdom (Braunerhjelm, Ding and Thulin, 2018; Steyn, 2008; Fornasiero and Zangiacomi, 2013) in this super environmental complexity has become more acute than ever before (Seeletso, 2015), as witness the current Covid-19 pandemic.

Denoting the present volatile, uncertain, complex and ambiguous ("VUCA") world (Hameed and Sharma, 2020; Lemoine, Hackett and Richardson, 2017), professional work environments, we need to promote new meaning making processes. These essential, novel EPL outcomes constitute a "much more reliable source from which possible prosperous future worlds can be created" (Seeletso, 2015). Uncertainty is increasing in the world of knowledge creation, and this is directly influencing the current transitional economic environment and generating dynamics where decision making is reaching a tipping point (Sharma and Kodali, 2018; Nielsen, 2020).

Nevertheless, uncertainty and even chaos should not be seen only as a threat (Arussy, 2018; Kurtz and Snowden, 2003). The persona of antifragility is beyond the resilient or robust (Equihua, Aldama, Gershenson, López-Corona, Munguía, Pérez-Maqueo and Ramírez-Carrillo, 2020; Ilieva, Anguelov and Nikolov, 2018; French 2013): the resilient resists shocks and stays the same, but the antifragile improves and flourishes. This research is an investigation of how to navigate the unseen, the opaque and inexplicable chaos (Reed and Lister, 2014) that surrounds us and to turn meaning making into a journey for Emergent Professional Learning (EPL).

During these EPL new meaning making transition periods, SEs realise how unpredictable the future can become and how ill-equipped and unprepared they can be to find sustainable and mostly ecological solutions for the future (Grewal, Roggeveen, Sisodia and Nordfält, 2017; Robinson, 2018). I initiate these integral transformation processes and observe them from the position of an intimate observer within a living theory approach (Braidotti, 2011; Vaughan, 2019; Whitehead, 2012).

What intrigued me as a business coach and as an observer of transformational processes was the culmination of unexpected learnings which surfaced in these anomalous times (Bolman and Deal, 2015; Dhir, 2019) and the ascendancy thereof in the professional Agile workplace (Li and Holsapple, 2018). This observation of emergent meaning making is to be examined as investment of parrhesia (Foucault in Rorty, 2017; Paras, 2020) as this discourse could inspire that praxis of self-transformation from which possibilities of social transformation could emerge.

Bauman (2013) alludes to the sentiment of "The Society of the Spectacle", (Debord, 2012), stating that we now find ourselves in an "interregnum" – a time in which the old work practices and the traditional ways of thinking, acquired or inherited, are no longer appropriate for the present *conditio humana.* That being said, innovative ways of alleviating future challenges and practices better adapted to new environments have not yet been conceived (Hadar *et al.*, 2020; Nielsen, 2020; Robinson, 2018).

Hence the dire need for "Liquid Modernity" (Bauman, 2013), the urgency and imperative of this research study presented as Agility in the Professional Workplace and the positioning of new meaning making as a building block for Emergent Professional Learning (EPL), where the growing conviction is that change is the only constant and uncertainty is the only certainty.

EPIC 1

Setting the scene for Emergent Professional Learning (EPL) as meaning making praxis in the professional Agile workplace

1.1 Opening statement: Being me

"Honour the noise in your head. Make the work you believe you were born to make. Create things you can visualize but haven't seen yet. Do it without regard for critics, the market or the math of it all. It's your handiwork."

Godin, 2020

In the following passage I present a critical theorem approach to this exploratory research journey as it informs and details important aspects regarding me, the researcher, and provides the foundation and objectives of new meaning making in a postmodern (Arussy, 2018; Sani *et al.*, 2018) world .

I am in partial agreement with Hill (2011:13) in stating that "TRULY, 'thoughts are things,' and powerful things at that, when they are mixed with definiteness of purpose, persistence, and a BURNING DESIRE…" These elements, I believe, are a prerequisite in the journey of self-actualisation. I further believe that with these prerequisites for "success" in place, a further key element is the ability to adapt. Deming (in Steele, Hovsepian and Schomer, 2010) emphasises this attribute by suggesting that it is not necessary to change, as survival is not mandatory. Bronowski (1973:9) accentuates the uniqueness of man by stating that "among the multitude of animals which scamper, fly, burrow and swim around us, man is the only one who is not locked into his environment. His imagination, his reason, his emotional subtlety and creativity, make it possible for him not to accept the environment but to change it…" – in essence, to be agile and at peace with oneself and one's reality of life.

The problem statement of this research is the question why co-initiation and the creation of new meaning making are important, and this will be elaborated to support its relevance. For complementary insights, refer to [Annexure Epic 1-1.1 Multimedia contribution "EPL–the Why"](#).

As scenarios emerge, the challenge could be either to acquiesce in uncertainty or to find a balance that creates a completely new and different syntax called meaning making. This necessitates a further exploration of the influences and prominence of different intelligences (De Boer, Du Toit and Bothma, 2015; Zhar, 2012). Foucault (in Kelly, 2017) remarks that the Greeks were interested in the "art of life" (tekhnê tou bio), where the notion of self-writing is explicitly described as an exercise of subjection and subjectification. Rorty (2017) quotes Foucault's observation that although self-writing as an exercise of freedom offers no guarantees, the vision of a clear contribution to the individualisation and the self-constitution of new meaning making as building block for emergent professional learning is entrusted and conferred (Drummon, 2003; Kelly, 2017; Olssen, 2005; Rorty, 2017).

1.2 Orientation

1.2.1 The rationale of underscoring new meaning making as investment

The principles of scientific management (Kearney, 2018) were introduced, developed and institutionalised mainly by F.W. Taylor (Reid and Sanders, 2015; Taylor, 1967), who promoted and entrenched large-scale manufacturing. Industrialisation and mass production were made possible through assembly-line factories, where the emphasis was on gaining maximum efficiency from both machine and worker (Renzulli, 2016; Steyn, 2008).

According to Gephart (1996), as well as Bolman and Deal (2017), the present corporate management hierarchy could be directly attributed to the institutional strategy and approach to modernism, which is believed to have culminated as result of the industrial revolution from 1820. Structural authority, micromanagement practices and rigid command characterised this industrial era. Present management activities need a fundamental cultural change to that of a compassionate leading model which is described in this postmodern debate (Bolman and Deal, 2017; Boyne and Rattansi, 2017; Newton, 2019).

In today's growing knowledge Ecosystem (Apgar, Mustonen, Lovera and Lovera, 2016; (Braunerhjelm, Ding and Thulin, 2018), where organisations are compelled to function in a demanding and complex global milieu, structural discontinuity, the need for transformational leadership (Bolman and Deal, 2017; Jankowski, 2020; Reza, 2019), are required in fostering new

knowledge competencies. I subscribe to the notion that current postmodern knowledge management and culture should promote the multiplicity of subjective statements revealing the degradation of absolute authority, as this is sufficiently descriptive to facilitate new meaning making in today's professional capacity as a more realistic alternative (Adriaenssen, Johannessen and Johannessen, 2017; Bauman, 2013; Casey, 2002).

In support of the urgency in new meaning making establishment Leipold *et al.,* (2015) accompanied with Durst and Edvardsson (2012) positions the grounding for this study by proffering that in an increasingly globalised environment, the SE's sustainability is contingent on their wisdom, which is the product of their information acquirement, knowledge structures, their knowledge abilities, and interactions. Leibold *et al.* (2015) further denotes the fundamental impacts of the global knowledge economy and the emergence of a new era of "fitness and survival" (Leibold *et al.*, 2015:15) by proactively embracing the following "six major" (Leibold *et al.*, 2015: 16) knowledge dynamics:

1. From Information to knowledge and wisdom
2. From Bureaucracies to networks
3. From Training/development to learning facilitation
4. From Local/national to transnational/global and meta-national collaboration
5. From competitive to collaborative learning
6. From single connectedness to multi connectivity to bio-corporate systems in relationships among individuals, organisations and nature.

As an educational strategist, I illustrate the importance of new meaning creation by thoroughly exploring and incorporating knowledge creations and agile maturity as transformational catalysts for supporting Leibold *et al.'s* six strategic knowledge drivers. This is accomplished by introducing EPL and its supporting pillars (see Figure 1.1-EPL and its supporting pillars) as the framework for this research investment.

This study invests in a possible approach to the problem of designing the creativity-active and cognition-enriched learning environment that are intended for education of professionals capable of producing knowledge, their materialising and integrating into life of the society. This research is based on generativity (Keyhani and Hastings, 2021; Nonaka and Nishihara, 2015) in prompting creation of new knowledge, and its potential socio-economic application (Leibold *et al.*, 2015;

Nonaka, 2017). The data collection for this study includes triangulation and a multimodal living theory explorative approach.

1.3 Research methods–A meaning making coalescence framework discussion

The epistemic access provides different perspectives, tested theorems, and case studies that easily transfer into the foundational pillars and affords the researcher epistemic access, as demonstrated in this emergent learning journey.

The researcher will purposefully establish, sustain, and integrate authenticity through systematic, in-depth fieldwork that results in high-quality data and conscientious data analysis with an eye toward issues of the inquirer's credibility, which is dependent on learning and experience to self-refer to a particular philosophical belief in the value of this inquest within a fundament appreciation of naturalistic inquiry and holistic thinking. In qualitative inquiry, triangulation entails eliciting and analysing multiple perspectives, utilising diverse data sources, and, during analysis, leveraging alternative frameworks for the elements that determine credibility, systematic, in-depth fieldwork that yields high-quality data, and skilled interviewing.

This multimethodological approach is an empirical investigation that delves into a contemporary phenomenon and its real-world environment, particularly when the boundaries between phenomenon and context are obscured and the investigator has limited influence over events. This investigation can establish a holistic in-depth examination of the knowledge transferal nature, historical context, physical environment, and other institutional and political contextual elements. A multimodal method is further used to provide the gravitas for and ground this study, providing the researcher with a clear view of the issues that organisations face and a directional positioning of possible assistance and future value propositions

The researcher draws on a variety of sources of evidence, with data coverage required in a triangulating way, and also benefits from the earlier formulation of theoretical propositions to guide data gathering and analysis (Lessem and Schieffer, 2016).

The six pillars form an essential foundation of this research study (see 2.4 – Research layout and demarcation). The six pillars underpin two dimensions (Knowledge creation and Agile maturity)

that demarcates the scope of this study. These six pillars provide a framework for gathering qualitative and quantitative data and its presentation and discussion.

To demonstrate the urgency of establishing new meaning-making institutions, Leibold *et al*., (2015), in collaboration with Grimsdottir, Edvardsson and Durst (2019), establish the foundation for this study by stating that in an increasingly globalised environment, the SE's sustainability is contingent on their wisdom, which is the product of their information acquisition, knowledge structures, and knowledge abilities. Leibold *et al.* (2015) elaborate on the fundamental impacts of the global knowledge economy and the emergence of a new era of "fitness and survival" (Leibold et al., 2015:15) by embracing the following "six major" (Leibold *et al*., 2015:16) strategic knowledge levers, referring to the pillars as information to knowledge and wisdom, moving from bureaucracies to networking. From training/development to facilitation of learning, and from local/national collaboration to transnational/global and meta-national collaboration.

The researcher suggests that driving single-to-multi-connectedness to bio-corporate systems interlinking individuals and bio-organisations by exploring Agile EPL creations as transformational catalysts for integration of this research investment, towards advancing Leibold *'s* six strategic knowledge drivers and their potential socio-economic application (Leibold *et al*., 2015; Nonaka, 2017).

This methodology is significant because it substantiates an interchangeable empirical investigation into an urgent current solution in its real-world context, particularly when the boundaries between the pandemic and the context of how people and livelihoods are directly impacted are obscured. The researcher is cognisant of the fact that the pandemic and its resultant diverse confluence on the economics of education has created a distinctive crisis in which there are diverse variables and living theory where the data particularly supports the notions and recommendations toward the new world of work where an inclusive educational and social transformation journey is imperative.

The research challenge echoes novel, demanding worlds where the researcher endeavoured to apply and deploy grounded literature. The multiple case studies serve as a foundational reference that positions itself pertinently as an influencer on the process and journey of meaning making. This work also provides a new, radical epistemology of practice in the field of action research, inspired by participatory experience ontology and personal learning pedagogy. The level of engagement of SEs and their perspectives on meaning making experience illustrate the value of a

living theory perspective to action research in integrating Boyer's perspective as a way of enhancing the standard of learning (Walton, 2011; McNiff, 2014).

The epistemic access I am applying in this study is underwritten by:

Agile Alliance (Agile), Amabile, T.M (creativity and innovation), Braidotti, R. (nomadic theory), Davenport, T.H (knowledge management), Drucker (knowledge management), Foucault (social theory), Leipold *et al.* (Learning facilitation), Kolb (experiential learning), Nonaka and Nishihara (Knowledge creating frameworks), Malinverni, *et al.* (meaning making), McNiff (action research), Nonaka (knowledge creation), Snowden (chaos and complexity), Taleb (antifragility), Whitehead, J (living educational theories).

1.4 Applicability of this study as a "real world" contribution

This research is an investment in a socio-co-constructivist approach to meaning making as a recommendation for the professional Agile work environment.

1.4.a Exploring real challenges and experiences

It explores the **real challenges and experiences** faced by postmodern SEs to understand future value propositions to unlock creative ability, development and transfer of new meaning within organisations, thereby generating alternative combinations of knowledge that could suffice as new found strategic carriers. This research focuses on extending meta-knowledge empowerment discovery and assessment (Anon, 2003; Chen, Ellis and Holsapple, 2018; Dalkir, 2017; Duguid, 2005).

Real life case studies start with the Momentum (BTS) way of work, 2013 (see multimedia [Annexure Epic 1-Complementary meaning making, 1.2 Momentum Way of Work](#)) and end with the Momentum Metropolitan Ltd Service Centre "Working Better Together" transformation in 2020. Personal reflections on all case studies aimed to answer the question "How do I improve what I am doing?" (McNiff and Whitehead, 2011) in order to facilitate an improving practice that generates meaning making as living theory, enabling the facilitation of true emergent professional learning (Whitehead, 2009).

1.4.b A socio-constructivist endeavour

This strategy of knowledge inclusivity is a collective appeal in which the researcher presents, and subsequently requests global leaders of education to engage proactively with, the process of inclusive knowledge development (Mann, 2018; Northouse, 2010; Vilakati, 2016) and to continue the search for solutions for a new world of Agile application as ethos in the professional workplace (Dhir, 2019; Snowden and Boone, 2007; Von Krogh, Nonaka and Rechsteiner, 2012).

1.4.c Agile in context

The appearance of Agile methods has been initiated with the most noticeable change particular to software process thinking (Segue Technologies, 2017), but Agile ideation regarding the concept of incremental iterative design and development initiated in the early 1970's (Abbas, Gravell, and Wills, 2008; Agile Alliance, 2018). Studies and reviews have been conducted about Agile methods which ascribe their emergence as a reaction against the traditional methods offering an alternative that embraces facilitation of welcoming change, customer involvement, attaining outcomes for real life solutions in a co constructive (Agile Alliance 2018; Kaltenecker 2019) emergent fashion.

This study is grounded on and applies Agile principles (Agile Alliance 2018; Anderson and Carmichael, 2016; Kocaj, 2018) in a manner that I believe could aid in the development of a new flanged perspective on the design and development of learning facilitation.

1.5 Axiological outcome of this study envisioned

The core of this research is the proposition of a co-constructed catalyst as a meaning making framework that fosters the relationship between the individual's creative meaning making journey, explorations, environments and findings as a congruent artefact of unexpected knowledge-creating awareness. It is envisioned that the proposed EPL dimensions and pillars (see Figure 1.1-EPL Dimensions and pillars) could facilitate the exploration, productivity and a managerial effectiveness ethos within Agile professions and further support sustainable knowledge creation,

flow facilitation and meaning making structures (Zakaria, Amelinckx and Wilemon, 2004; Saint-Onge, 2005; Nonaka and Nishihara, 2018).

I believe that for SEs not only to survive, but to prosper in the VUCA dynamics (Arussy, 2018; Hadar *et al,* 2020) of the modern workplace (Bennett and Lemoine, 2014, Bolman and Deal, 2015), they should extensively rely on the knowledge worker as a building block. This notion of knowledge as a strategic advantage, which traditionally centres on the inclusion of knowledge workers, knowledge creation, establishment, socialisation and gain, has reached its maturity and usefulness. I propose fostering growth as an artefact of EPL (Emergent Professional Learning) through meaning making processes as a novel sharing narrative of the knowledge economy in the present uncertain times.

The contemporary SE environment is examined, with specific attention to the Agile work praxis. One of the four fundamental principles (Davis, 2013) in introducing Agile as work praxis is a continuous incremental improvement (Leopold, 2017; Li and Holsapple, 2018; Mc Kinsey, 2018), which serves as the catalyst for this exploration of the question (as a familiar narrative) **"How do we make new meaning and learn holistically in professional Agile work environments?"**

As noted, being mindful of challenges and opportunities necessitates understanding of new, unanticipated meaning making, the importance of new meaning making discoveries and of the need for them in the modern professional workplace.

1.6 Audience of the study-The SE

The twenty-first century sense making entities are the benefactors of this study. This encompasses (but is not limited to) companies, knowledge workers, creators and bodhi artisans, who are the craftsmen of new knowledge and meaning making in a complex, challenging and unfamiliar environment.

The guiding compass in this research is a social co-constructive approach, where all are contributing participants (Damsa and Ludvigsen, 2016) with me as conductor (Scott, 2015; Schwarz, Prusak, Swidan, Livny, Gal, Segal, 2018), facilitator and observer. Traditional

approaches are transcended, metamorphosed and presented for inclusion and for co-construction in this new meaning making investment.

Collaboration is essential to establish a platform for the collective voices of all SEs. They again reiterate the importance and relevance of co-determination as an ecological solution that will be vital to address the increased frequency of unprecedented challenges such as COVID-19. Co-determination should lead to diverse actionable structures that promote participative leadership, where accountability and psychological ownership drive the collective goals of a renewed vision of antifragility, resilience and efficiency in facing unpredictable challenges through new meaning making.

To accomplish this, I as knowledge strategist (Dyer and Dyer, 2017; Finkelstein and Hambrick, 1996; Scott, 2015) have shared my concerns regarding the current state of new meaning making involving inclusive diverse leadership teams and knowledge workers representing diverse SE leadership structures.

1.7 Research outlay and demarcation

EPL serves as catalyst for this research demarcation (see Figure 1.1-EPL Dimensions and pillars, the Writer, 2017) for new meaning making.

Knowledge creation and Agile maturity can become positioned to manifest as dimensions to be explored and invested in this EPL study.

As an EPL research investment, the potential complementary essence of the two dimensions (Knowledge creation and Agile maturity) are:

1. Founded on my real-life experiences as a business architect and a working career as life work (spanning 33 years) as an Agile consultant that serves as a gateway to this meaning making journey.

2. Grounded in supporting the six strategic knowledge transitional levers as proffered by Leibold *et al.*, (2015). Please see 1.2.1 The rationale of underscoring new meaning making as investment.
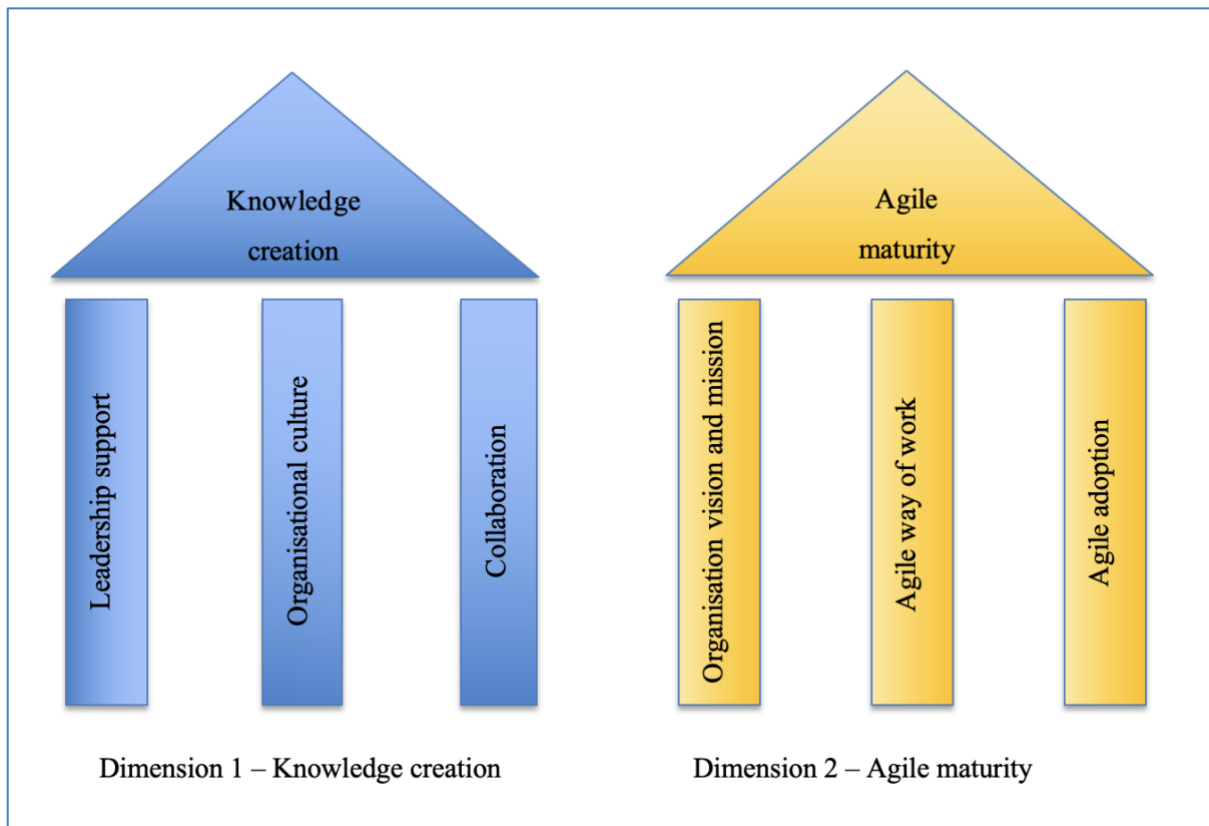
Figure 1.1-EPL dimensions and supporting pillars (The Writer, 2017).

Nonaka (2018) describes knowledge creation as the act of making individual knowledge available, amplifying it in social contexts, and selectively linking the newly created knowledge to the institution's existing knowledge. Von Krogh, Nonaka, and Rechsteiner (2012) augments this notion, and Dhir (2019) extends this definition to include the continuous transmission, synthesis, and conversion of multiple forms of knowledge as knowledge consumers practice, interact, and learn. Reflecting on the 2013 BTS Agile transformation program, my experience as an Agile coach, and interactions with members of the South African and International Agile community of practice, it became clear that the position of leadership, the organisation's culture, and collaboration are critical to successful knowledge creation. Kindly refer to Figure 1.2b-The Research Journey and Annexure Epic 1-1.2-Multimedia contribution-Momentum Way of Work.

Throughout the BTS Agile transformation program, unexpected new learnings and insights were gained, prompting the concept of emergent professional learning (EPL) for this research

investment. Not only did we accept Agile as a mode of operation, but we also implemented the program according to Agile principles and practices. The three most critical indicators for delivering Agile transformation programs that emerged were the institution's Agile vision and mission, how Agile is integrated into and applied in day-to-day operations, and thirdly, the longevity of Agile sustainment; these, I believe, are the defining characteristics of Agile maturity.

In re-iteration this EPL research investment incorporates, embodies and explores in the following two dimensions:

- Knowledge creation
- Agile maturity

Each dimension is supported and reinforced by three pillars. In the context of this research the pillars exemplify the augmentation and support to strengthen each dimension. These two sets of three pillars form the base for defining the scope of this research study.

As noted, EPL in professional work environments are explored to search for effects and interrelationships between the two dimensions of Knowledge creation and Agile maturity. The supporting factors underscoring SE Knowledge creation (dimension one) include:

Knowledge generation, establishment and positioning which is augmented by the following three supporting pillars in addressing Leibold *et al.'s* (2015*)* following three strategic knowledge drivers. See table 1.1 – EPL dimensions and pillars linkage with Leibold *et al.*, (2015).

EPL dimensions and pillars addressing linkage with Leibold *et al.*			
	No.	**Pillars**	**Leibold *et al.***
Dimension 1 Knowledge creation	1.	Leadership support	From Local/national to transnational/global and meta-national collaboration
	2.	Organisational culture	From Bureaucracies to networks

	3.	Collaboration	From competitive to collaborative learning
Dimension 2 Agile maturity	1.	SE Agile mission and vision	Training/development to learning facilitation
	2.	Agile way of work	From Information to knowledge and wisdom
	3.	Agile adoption journey	From single connectedness to multi connectivity to bio-corporate systems in relationships among individuals, organisations and nature.

Table 1.1–EPL dimensions and pillars linkage with Leibold *et al.* (2015).

Dimension 1-Knowledge creation

I believe that the creation of new knowledge can be viewed as a panacea for economic and development expansion. In my experience as a business consultant, the development of new knowledge has the potential to elevate the SE efficiency, productivity, competitiveness, profitability, agility, and business performance. I am further to believe that the positive spin-off effect of newly generated knowledge could be amplified when the knowledge is gained through novel and unexpected insights.

Pillar 1.–Leadership support, from local/national to transnational/global and meta-national collaboration

Chapman, Spear, Ngai and Chan (2020), Dhir (2019) concur with Ventura (2018) in underscoring the leaderships catalytic function in facilitating the SE's global positioning. Toendepi (2017) contributes in noting that leadership capability should be extended to inspire all in attaining their potential. Amankwaa, Gyensare and Susomrith (2019) supports Reza (2019) and further extends on the notion of leadership support with emphasis on transformational leadership that positively

relates to job autonomy, affective commitment, supportive management and innovative work behaviour (Bolman and Deal, 2017; Jankowski, 2020; Reza, 2019).

Pillar 2.–Organisational culture, from Bureaucracies to networks

Auernhammer and Hall (2014), Nonaka (2000) and Tharp (2012) denotes that a SE culture shift is required as an imperative in establishing collaborative knowledge creating fora. Various authors, Damşa and Ludvigsen (2016), Dhir (2019), Nguyen and Chau, (2017) denote the notion that leadership and culture facilitate, promote and endorse the collective meaning making-intent that drives SEs towards competitive advantage.

Pillar 3.–Collaboration, from competitive to collaborative learning

Leibold *et al.* (2015), Siemens (2014),Von Krogh *et al.* (2012) and Tiwana (2002) are prominent in advocating the notion of collaboration and co-construction as paradigm for collaborative learning in new meaning making. Hadar *et al.* (2020) with Kelly, Ryan, Altmann, and Stelzner (2018) concur with Nonaka and Nishihara (2018) in stating that it should be an imperative for leadership to make new, open, co-constructive meaning making efforts to embrace the necessary radical, innovative approach of new meaning making.

Dimension 2.–Agile maturity

In characterising Agile through direct comparison as to what non-Agile is in relation to Agile. Kaltnecker (2018) and Agile Alliance (2018) expresses Agile as a system of methods, regard and think designed to minimise the cost of change, especially in a context where important facts emerge, or where we could be obliged to adapt to important uncontrolled factors. A non-Agile methodology is referred to as a system (Anderson, 2018; Agile Alliance, 2018) that aspires to achieve efficiency by anticipating, controlling, or eliminating variables to eliminate the need for changes and associated costs of changing. I confide to describing Agile maturity as the journey to progression, instillment, practice and domicile of Agile values. Each of the following three Agile maturity pillars elucidates and presents an Agile proposition in support of Leibold *et al.'s*, (2015) remaining three strategic levers.

Pillar 1.–SE mission and structure, training/development to learning facilitation

As an Agile requirement, the SE leadership endorsement and support are regarded as crucial in the process of developing new meaning making, as it depicts leadership's vision, strategic intent and the SE's execution towards training, development to learning facilitation.

The notion that SE leadership enable, encourage, and promote the collective meaning-making intention that propels SEs toward competitive advantage (Barney, 2014; Bass and Avolio, 1994; Pasher and Ronen, 2011; Malhotra, 2005; Nguyen and Chau, 2017). The theory might imply that when SE leadership adheres to strategic objectives, it progresses the aspects of a post-modern learning society which could leverage creative knowledge sharing (Zahra, 2015; Nonaka and Nishihara, 2018)

Pillar 2.–Agile way of work, from information to knowledge and wisdom

The Agile value of "Start where you are… Start with what you know" (Anderson and Carmichael, 2016:17) may drive the second pillar of Agile adoption toward knowledge conversion that transforms tacit information into explicit knowledge through a process. Nonaka (2017) and Nonaka and Nishihara (2018) illuminates the process through four distinctive interdependent processes. Firstly, conversion from tacit to explicit knowledge involves a socialisation process. Secondly, tacit knowledge is made explicit through the externalisation process, thirdly, explicit knowledge is converted to tacit knowledge, and fourthly, implicit knowledge becomes explicit during the internalisation process (Powel and Snellman, 2004; Robinson, 2018).

I combine the entanglement of clinical SE systems approach with co-constructive meaning-making as knowledge creative creation by expressing that these new novel work of meaning-making praxis could introduce a migration in transcendence of tacit knowledge to new meaning making and wisdom.

Pillar 3.-Agile adoption journey, from single connectedness to multi connectivity to bio-corporate systems in relationships among individuals, organisations and nature.

Agile Alliance (2018) supported by Wester (2018) indicate that the SE Agile adoption maturity (Kaltenecker, 2019) can be thought of as a trifold framework that aims to foster synergy development between the person (knowledge worker), process (learning mechanisms), and platform components (learning enablement structures). This framework that offers a unique value contribution through the introduction of multifaceted capabilities that can be positioned to the advantage of a SE competitive strategic advantage (Aithal, 2016; Grant, 2016; Nguyen and Chau, 2017).

As the SE fundamental function is to create, disseminate, and disseminate new forms of meaning (Adriaenssen *et al.*, 2017; Davenport and Prusak, 2012; Wester, 2018). This is especially relevant in communities of practice that exhibit a commitment to fostering informal, semi-structured learning, skill sharing, and inspiration through the creation of new meaning (Wenger, 2011; Egan and Jaye, 2009). Thornhill (2006) infuse an organic "continual growth and evolution perspective" into these knowledge-fostering communities by stating that they should be "living networks" (Thornhill, 2006:693), resulting in the formation of repositories encompassing meaning making, knowledge creation, and innovation (Li and Holsapple, 2018). When these live fora are functioning optimally, they should (as a benefit) improve SE performance and competitive intelligence (Wenger, 2011; Wenger, McDermott and Snyder, 2002).

The six pillars as a whole could demonstrate the following characterisation:

- The six pillars constitute the gravitas and foundation of this research, which is based on my experience and professional career as a medical technologist in the eighties and progressed to business analysis, management, education and coaching as a profession.
- An interdisciplinary exploration and synthesis of meaning making as a holistic embodiment of new learning.
- The new EPL awareness could lead to novel theorem development.
- The six pillars are inextricably linked to the objectives and research sub-questions, which also form the basis of the questionnaires, interviews, Lean coffees and focus group interviews.
- The pillars are thematic perceptions that had been deconstructed in finding the future positioning of EPL as sustainable rent for meaning making as an EPL building block.

1.8 Background to this study-a journey

This section describes the background, development and thought process of this study –its genesis, the proposal (its multiple submissions) and its redistilled essence. The historical overview is presented by a timeline from which the research enquiry was extracted. See figure 1.1: Research journey.
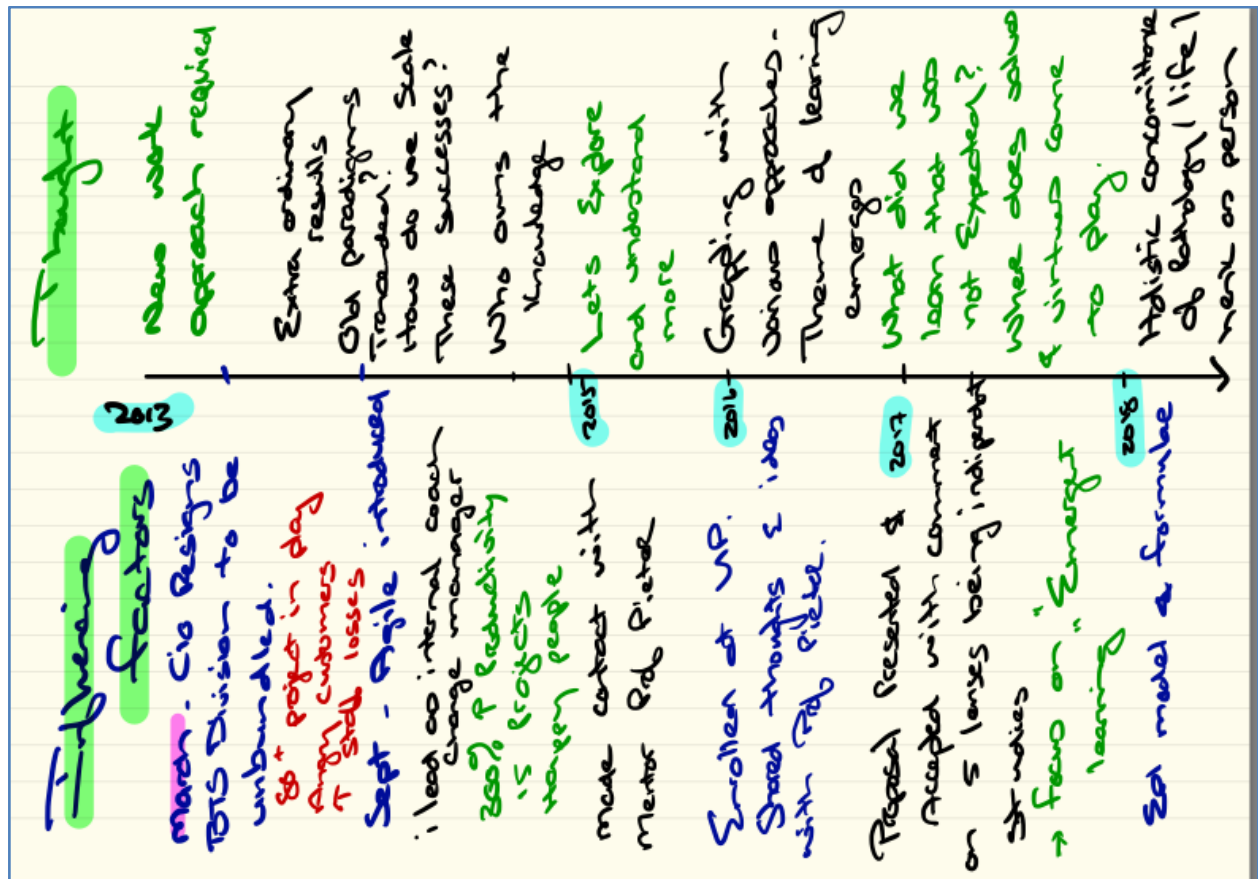
Figure 1.2a-Research journey-An event timeline for EPL as a research study-hand drawn (The Writer, 2019).

EPL Research journey 2013 – 2018

March 2013

Influencing Factors

CIO resigns BTS division to be unbundled:

- 80+ projects in play
- High staff turn around
- Angry customers

Thought

A new approach to how work is being performed is required

September 2013

Influencing Factors

Agile as way of work is introduced

I lead as internal change manager/Agile coach
Results:

- 15 projects in play
- 300% increase in productivity
- Happy people

Thought

- Extra ordinary results.
- Old work paradigms transcended
- How do we scale these successes?

October 2015

Influencing Factors

I contacted Prof. du Toit

Thought

- Let us explore and understand more on how we learn
- What did we learn that was not anticipated?
- How do we make meaning of this?

February 2016

Influencing Factors

I enrolled at the University of Pretoria.
Thoughts and ideas were shared with Prof. Du Toit

Thought

I was grappling with various approaches to the theme of emergent learning in the professional workplace

June 2017

Influencing Factors

- Research proposal presented
- Proposal was accepted
- Comment was that the five lenses could be independent studies

Thought

- What did we learn that was not expected?
- Where does values and virtues come into play?

2018

Influencing Factors

- Focus on emergent learning
- EPL framework and formula presented

Thought

This research is a holistic concomitance of life and me as person.

Figure 1.2b-Research journey–An event timeline for EPL as a research study–digital (The Writer, 2019).

The intention of this research was to explore the constructs of Agile learning through five lenses that inspire a framework for secondary research questions (see Annexure Epic 1-1.3-Multimedia contribution, 2017). The first title was "Exploring a knowledge-creating ecology within an Agile work praxis: a case study".

As shown in research proposal submission comments, (Annexure Epic 1-1.3-Research proposal comments) Professor Wasserman, HoD of Department of Humanities Education, Faculty of Education, University of Pretoria (proposal defence committee evaluator) recommended that each of the five lenses could be dissociated and serve as autonomous, independent studies. This is reflected Figure 1.2-Research journey-An event timeline establishing EPL as a research study.

This research exploration and investment was to search for relationships between new meaning making, knowledge creation and emergent professional learning for the modern Agile workplace with the expected outcome of SE emergent knowledge progression.

Constructs of new meaning making as a building block for knowledge creation and learning, with specific attention to learnings not expected, construed or envisioned, were attended to and encapsulated as "emergent".

Agile professional work environments are explored to search for effects and interrelationships between the two dimensions of Knowledge creation and Agile maturity. The supporting factors underscoring SE Knowledge creation (dimension one) include:
• Leadership's demeanour and its effect on knowledge creation
• Culture and climate regarding knowledge creation
• Collaboration-from competitive to collaborative learning

The three pillars reinforcing Agile maturity (dimension two) include:
• SE Agile mission and structure
• Agile way of work
• Maturity of organisations in their Agile adoption journey

The outcomes, in conjunction with emergent learnings (mobilising commitments), are presented as foundation for answering research question 2: "Why should Agile maturity become part of the future of curriculum design and development grand narrative?"

1.9 A business acumen view (rationale of this study-a business perspective)

The successes of the Toyota Motor Corporation achieved in the 1980s–1990s established the company as the showcase of successes achieved with the Agile work praxis. Compared to Western automakers' no less extraordinary issues, the spectacular achievements propelled Toyota from a single industry curiosity to a world-class automotive concept, development and manufacturing model (Iyer, Seshadri and Vasher, 2009; Liker and Convis, 2012).

In today's knowledge landscape and new knowledge economy (Von Krogh and Roos, 1998; Khalil and Marouf, 2017) characterised by global competition and intense cost pressures, a novel approach to corporate business is deemed essential. Future-proof readiness refers not only to organisational survival, but lays a foundation for sustainable future success.

The adoption of Agile as a work praxis in South Africa's corporate workplace has been limited predominantly to the function of technology enablement, i.e. business and software architecture and development. Momentum Metropolitan International Holdings has embarked on numerous different Agile journeys, with various degrees of success and failure. This research study deals with the South African context. Momentum Metropolitan Ltd. serves as holding company for the following five companies: Ayris, Guard Risk, Metropolitan, Momentum and Multiply, all of which have their head offices in SA. Although branded as five separate entities, co-location is prevalent within the five companies, as real estate is communal and conjointly shared. Refer to Annexure Epic1, 1.4-Momentum Metropolitan Ltd. Holdings Ownership structure.

1.10 Why me and why this study–a scholarly self-reflection

At the age of 33, I realised that medical technology had reached its limits. While studying for a BTech degree in clinical pathology, I was introduced to laboratory management as a subject. This prompted me to complete an MBA degree, which opened the prospect of a career change. My initial appointment was that of a business analyst tasked with "making processes work better". This application and function I found exciting, and I completed two major re-engineering projects, one for the Chronic Illness Division and the other a refurbishment of the Forensics Department.

In 2007 I was granted the opportunity to attend the PGCHE (Postgraduate Certificate in Higher Education) programme at the University of Pretoria. For me the emphasis was on the valuable practice of an in-depth, constructivist reflection (Van der Watt, 2008; Brew, 2010) on Herrmann's whole brain concepts (De Boer, Du Toit, Scheepers and Bothma, 2013) and the realisation of a wider expectancy as a learning leader.

My career as a business analyst evolved into that of a business architect, programme manager and finally to that of a business coach. I was privileged and fortunate to have Klaus Leopold (founder and managing director of LEAN Ability) and Siegfried Kaltenecker (founder and CEO of Loop

Organisation) as Agile coaches; as a result, my career turned into Agile coaching. The inclusivity of the process focus implied paying equal attention to the inclusion of people and platforms (architecture). I was fortunate to be part of the leadership team piloting Agile work practice in the Momentum Retail Business and Technology Solutions (BTS) department, instilling the notion of a wholesome, holistic way of work transformation (see [Annexure Epic1-1.5 Multimedia as a testimonial](#)).

As a self-styled title "Chief Happiness Officer", I am grateful for the possibility to tutor, support and practice the scholarship (Brew, 2010) of Agile practice throughout Momentum Metropolitan Holdings Ltd.

1.11 Objectives, composition, layout and format of the dissertation

1.11.1 Research objectives

Being tasked to instil Agile as the novel way of work (WOW) within Momentum Metropolitan Ltd., I am fortunate to experience various Agile adoption maturity levels within the organisation. Agile as WOW has been implemented in Momentum Metropolitan Ltd. divisions with various rates of success, success being measured as continual application of and adherence to Agile virtues and practices.

An intriguing observation for me was the different levels of the readiness for and rate of Agile adoption and learnings gained and the variance between a learning-rich milieu and emergent learnings gained, especially as regards the realisation of unexpected insights. These unexpected meaning making learnings are the essence of this research objective, which is to improve understanding of how such (emergent) learnings are acquired in Agile professional working environments.

This study strives to explore and provision insight to these unexpected new insights by addressing the following two objectives:

1. To transcend meaning and epitomise sensemaking.
2. To propose a new emergent curricular formation?

An EPL framework is presented (Figure 1.1-EPL dimensions and supporting pillars) as a basis for discussion of the research sub questions, namely:

1. How should knowledge creation methodology adapt to the new world of work?

2. Why should Agile maturity become part of the future of curriculum design and development grand narrative?

Both questions are based on and represent the empirical consequence of the six pillars that emerged from my career, time, learnings and experience gained in the professional workplace. These pillars can be described as follows:

- The six pillars construct the framework and foundation of this research investment.
- They are the culmination of experience as a researcher and as a professional learner.
- They are inextricably linked to the objectives of this exploratory research and form the basis of the questionnaire and focus group interviews.
- They are thematic perceptions to be deconstructed in exploring the future possibility of EPL as actuators of new meaning making journeys.

The full spectrum of data gathering in this study makes the six pillars pivotal, as both research questions will be interpreted and evaluated by applying and investigating them. I therefore present an introductory overview explaining their relationship and position in the EPL framework.

The pillars constitute building blocks for the two dimensions of knowledge creation and Agile maturity in the EPL framework. Each of the two dimensions is underpinned by and constructed by means of three pillars. The dimensions under scrutiny are:

The three pillars reinforcing knowledge creation (dimension one) include:
1. Leadership's demeanour and its effect on knowledge creation
2. Culture and climate regarding knowledge creation

3. Collaboration-from competitive to collaborative learning

The three pillars reinforcing Agile maturity (dimension two) include:

1. SE Agile mission and structure
2. Agile way of work
3. Maturity of organisations in their Agile adoption journey

1.12 EPL, a proposed dimension for catalysing meaning making in professional Agile work environments

The rationale of and motivation for this EPL research are presented in a multimedia video (see Annexure Epic 1-1.6 EPL: The introduction). This exploratory discussion of making sense of the literature is further facilitated, structured and discussed. in Figure 1.3, including the rationale of serving as a substrate of EPL in establishing a sharing narrative for the knowledge economy.

The objective of the EPL dimensions and pillars are:

- to position itself as a possible catalyst in enabling new meaning making discussions, and
- to further, as a basis for improvement, discussions pertaining the formulation and crafting of new meaning making.

Rothman's (2017), Steege, Glick-Smith and Breen (2017) and Mack and Khare's (2016) academic contributions underscore the dynamics of order in meaning making, which is perpetuated as a (constant) force from a state of chaos. This process of making meaning from perceived chaos is the substrate in the provision of a holistic EPL representation, which should then include my cognitive, personal and spiritual dimensions as a lifelong student.

See Annexure Epic 1-1.7 EPL Genesis and construction for clarification of the following three personal dimensions, which are incorporated in the genesis and construction of EPL. These dimensions are:

- Natural sciences–As a haematologist, it came naturally for me to propose similarities between EPL and the biosciences. The incorporation of bioscience components underscores and accentuates the holistic exhibition of personal effort in this EPL research study. An extraneous reason for including aspects of physical sciences was to promote understanding and to position EPL as a "living organism". The bio-attributes signify longevity, sustainability and metamorphosis through adaptation to changing environmental factors. Particular attention is given to the permeability phenomena of EPL as an osmotic attribute. These biological, evolutionary characteristics distinguish EPL from the clinical, cognitive restrictive discourse traditionally associated with literature/scholarly reviews.

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- Quantum mechanics – As an extension of the natural sciences, quantum magnetics, friction and movement (which have been of keen interest to me as a lifelong learner, hobbyist and Agile coach) present veracious similarities to EPL. Quantum magnetics describes and aggregates Agile principles as a natural occurrence in addressing conservation, consumption and expenditure of energy, be it natural, mental or spiritual in nature. The interrelationship between EPL and quantum magnetics is codified upon the spontaneous natural movement which enables dedicated focus progression as a capability of SEs.

- Social sciences that accentuate EPL as a building block for the betterment of the individual, community and society. EPL necessitates and intensifies meaning making as an artefact of visibility and clarification of any discourse that encourages transcendence of archaic predefined "man-made thinking." EPL further adduces critical thinking, knowledge creation and social connectedness that surpass the boundaries of strategic/creative thinking by embracing operational and critical exposure of co-constructive learning experiences in the Agile professional workplace. A preponderance of meaning making is depicted as the product of knowledge creation in an Agile professional environment, supported by the constants of time and virtue. The latter (time and virtues) offer a departure framework and foundational consistency in the way of work approach to the establishment of a new professional learning ecology within Agile work praxis.

This culmination of interdisciplinary subject matter and trans-disciplinary discourse positions this research to transcend the mechanical singularity of traditional investigative approach, by contributing as multifocal lens of objectivity, as a holistic reflection of my personal and professional investment.

Meaning making components in themselves construe the meaning making process of EPL, which is a means of continuous improvement of personal, social and communal dimensions in itself. The inquiry initiates with an examination of EPL as meaning making catalyst. Elements, attributes and uniqueness of biosciences demarcate the composition of the EPL dimensions, which is elaborated upon as an introduction to the process of making meaning of the literature process. The dimensions with particular inclusion of Agile, the composition, moving parts and facets position EPL as a bio permeable, living organism with quantum magnetic movement capabilities.

1.13 Application of Agile terminology as a modernistic research composition structure

As this research deals with Agile as a way of work, the Agile work breakdown terminology is adapted and applied to the composition, structure and format of this dissertation. Refer to Figure 1.3.-Agile breakdown terminology.

Agile Breakdown Terminology

High Complexity

SAGA – Research Title

EPIC – Chapter Title

FEATURES – Header 1

WORK ITEMS – Header 2

Size

Effort

Detail Think
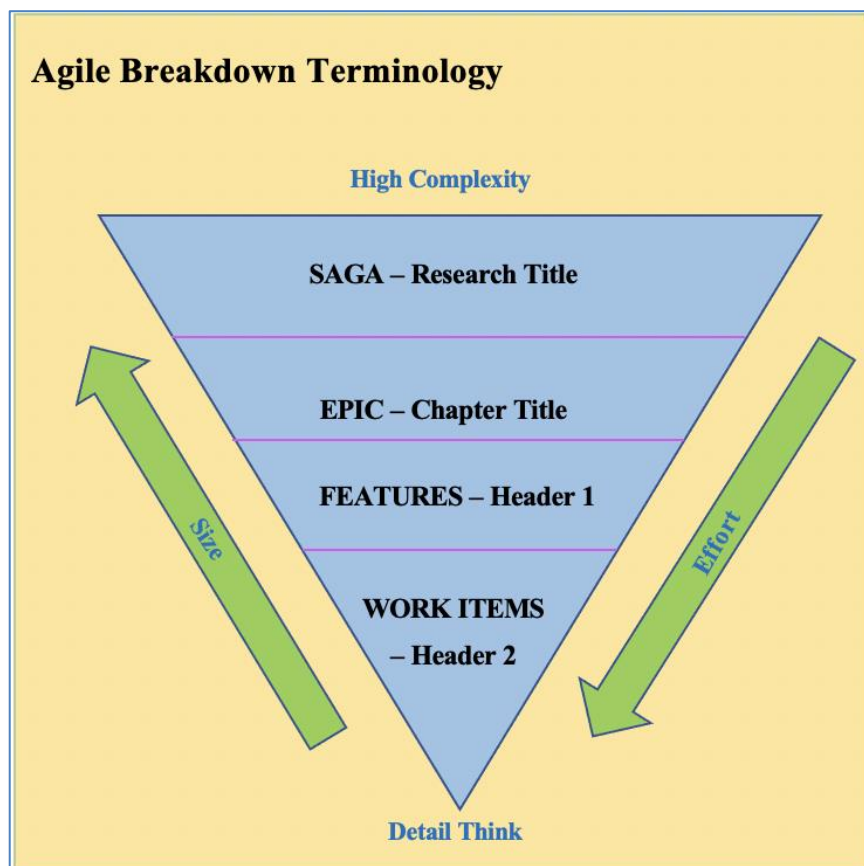
Figure 1.3-Agile breakdown terminology (The Writer, 2018).

In Agile terminology, according to Ross-Hall (2011), a saga is more than a new term to characterise epics. A saga appreciates a more careful approach, one that is more connected with the process than with the destination. In this research context, I include saga syntax not as a basis for understanding work to be delivered, but as a substantial personal anecdote that explains "how, within a time frame of years, the research strategy unfolds and how everyone contributes". The purpose of the saga is to encapsulate and embody the span of this PhD study.

"Epics", in my application to the structure of the dissertation, refers to "BIG item ideas" that display attributes corresponding to chapters and indicate a central division describing a major

theme of the research study. Epics start with a title that reflects the essence of that division in the dissertation.

A feature is a building block of an epic and is a second-level headline. Second-level headlines are words or phrases that introduce a theme or idea as a piece of content and thus organise the theme into smaller components (Nichol, 2019).

Work items represent subheadings that augment and deconstruct the central argument ("features") as key concepts with a visual level of importance (Sophia Learning, 2015).

1.14 Research layout and format

In Epic 1, the focus is on how we as sense making entities (SEs) make new meaning in the professional Agile workplace. The boundaries for inclusion of new meaning making and EPL as outcome are set within the two dimensions of Emergent Professional Learning (EPL).

This construct of EPL elements and subsets (pillars) is visualised that further serves as a structure for Epic 2, Making meaning from the literature. Study context is described; the objective and sub questions are stated clearly. Context is afforded to position the research intentions and convey a perspective of proposition and significance.

Epic 2 also presents insight gained from the literature on new meaning making as the foundation of this research. The epistemological gravitas enables a grounding theorem that scrutinises the EPL dimensions, the supportive meaning making pillars and variables accessed. The theoretical constructs form the central body of this study, which explores meaning making, the role of SEs and Agile as a way of work to construct EPL initiatives as new economic practice. The literature seeks to clarify the rationale for this research inquiry that is grounded on validated literature published within relevant research domains by global knowledge strategists, scholars and academics. The interpretation of the literature review is related to the goals of the research by presenting ideas and guidance on potential recommendations. Scholarly discourses are considered as a point of departure and invite narrative regarding knowledge creation as a meaning making building block that underscores EPL within organisations today and attempts to investigate future potential.

Epic 3 introduces a triangulated research design and concept and illustrates the research methodology, including data sampling, processing and interpretation. The data collection practices, including discourse in the focus group are introduced both as context and explanation.

The Multi-modal study has included an experiential test method approach for the survey employed, and non-directive ethnographic contributions that include Lean Coffee sessions, retrospective sessions, word cloud application and semi-structured interviews. Partially and non-directive interviews complimented by Lean Coffee sessions substantiate the qualitative data contribution. These have been used to establish baseline data for formulating conclusions in the final phase of the study.

Epic 4 presents the research results. A twofold data construct is rendered that includes a hierarchical decomposition of the pillars accompanied by the quantitative substantiation of variables derived from the quantitative analysis.

In Epic 5, the findings and a critical discussion of the theoretical perspectives are submitted, and it is demonstrated how meaning making as a building block of EPL concurs with the theoretical discussions presented in Epic 2.

Epic 5 introduces Epic 6, Proposes and focuses on future solutions and offers suggestions for further examination. A transformed, progressed new meaning making insight with possible recommendations, observations and insights is presented that offers an innovative educational contribution and describes the development and design of progressive educational curricula.

Figures 1.4 and 1.5 are exhibited as hand drawn graphical interpretations illustrating the research actions, milestones and outcomes performed. In Agile meaning making fashion the hand drawn illustrations facilitate the flexibility to accommodate alterations and new insights in this multimodal experiential research journey.

The layout of the research report is illustrated in Figure 1.4, augmented with a research flow description in Figure 1.5 below. Figures 1.4 and 1.5 are visual depictions of this research initiation, planning, progression and execution. The EPL research report (Figure 1.4 – EPL research report layout) illustrates the architecture, arrangement and composition of this research. The research format constituting of Epics, their purpose, intent and stage of research journey are represented in

coherence with activities (red line) performed. Figure 1.5 the EPL research flow, is a hand drawn narrative encasing the elements and actions performed depicted in Figure 1.4.
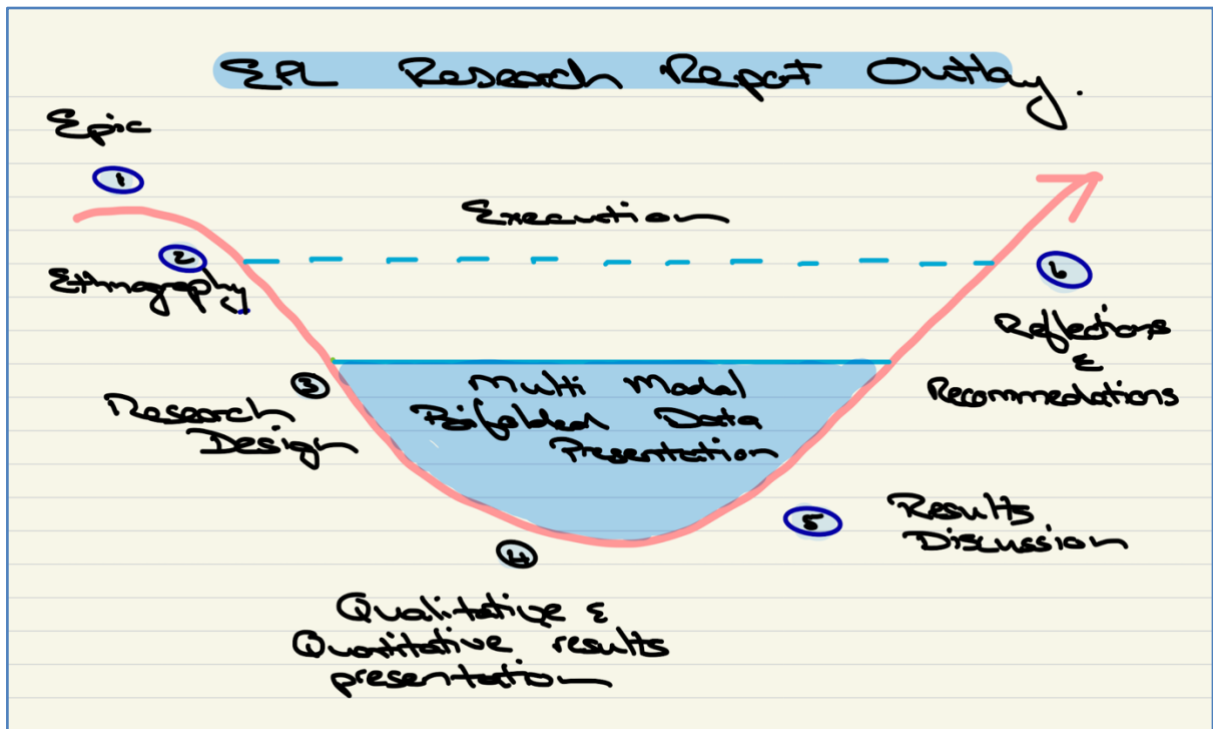
Figure 1.4a–EPL research report layout–hand drawn (The Writer, 2017).
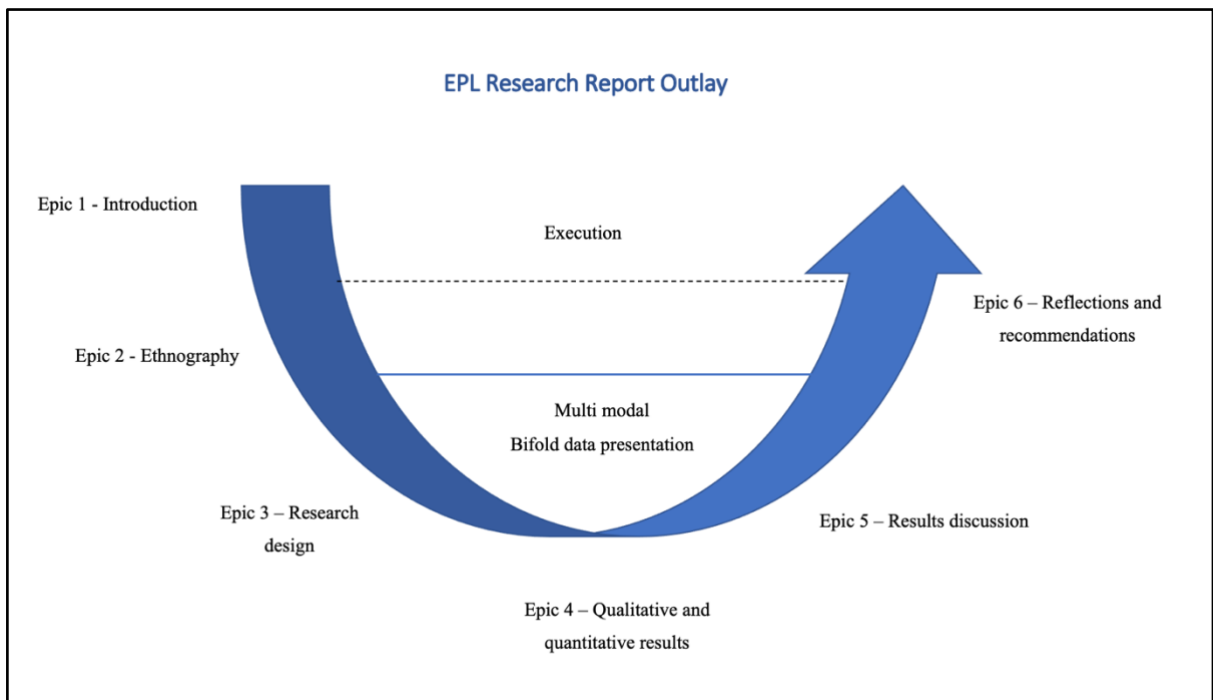
Figure 1.4b–EPL research report layout–digital (The Writer, 2017).
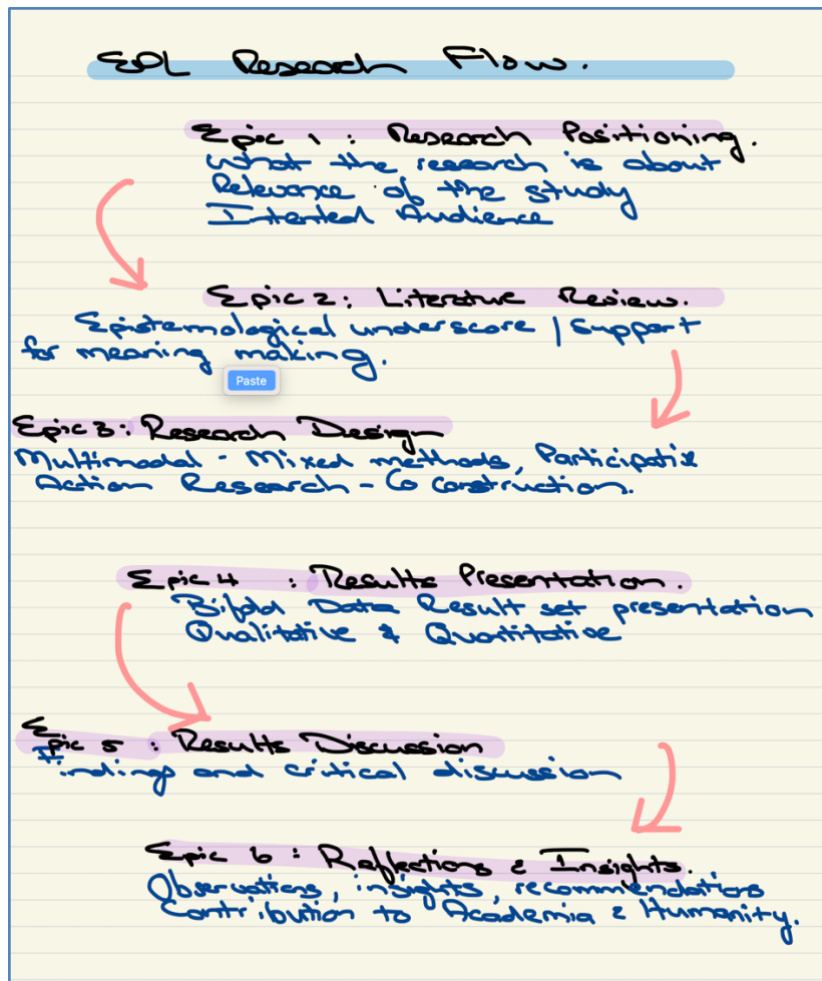
Figure 1.5a–EPL research flow–hand drawn (The Writer, 2018).

EPL Research Flow

Epic 1 - Research positioning

- What the research is about
- Relevance of the study
- Intended audience

Epic 2 – Literature review

- Epistemological underscore / support for meaning making

Epic 3 – Research design

- Multimodal – mixed methods.
- Participative action research
- Co-construction

Epic 4 – Results presentation

- Bifold data result presentation
- Qualitative and quantitative

Epic 5 – Results discussion

- Findings and critical discussion

Epic 6 – Reflections and insights

- Observations, insights, recommendations
- Contribution to academia and humanity

Figure 1.5b–EPL research flow–digital (The Writer, 2018).

1.15 Conclusion

The general orientation and investigative research objective are formulated and discussed in Epic 1. Furthermore, a postmodern narrative is introduced in search of new meaning making as a building block of EPL and a conceptualisation of the newly connected, disruptive VUCA landscape. The rationale for proposing EPL dimensions as a catalyst for dissection, analysis and amendment is discussed. The research layout, flow, format and objectives are introduced. The process of distilling a sound, grounded research objective is described in the form of a personal reflection on investment in this research. The need for this study is emphasised because there have been little and insufficient research done in the in the field of emergent learning creation in professional workplaces which subscribe to Agile as a blueprint for "way of work".

The co-constructive arrangement is complemented with an anticipated structure and format to address what this research is about, the rationale of the study, the intended audience, and the usefulness of EPL in the real world.

I requested diverse knowledge workers, knowledge practitioners, strategic leaders and management role players to collaborate on a future vision to address the current unforeseen burning platforms, such as Covid-19.

This collective transformational co-constructive engagement was intended to produce a sustainable future meaning making strategy. This research is particularly significant in the study of the future working climate, which includes how learning will happen and presents an innovative educational lens for examining the grand narrative of progressive educational curriculum design and development.

EPIC 2

Making meaning from the literature

The following narrative explores and reviews relevant literature and critically appraises the theory of meaning making as encapsulated in the EPL dimensions. This body of literature on EPL in the postmodern workplace and meaning making as a professional learning mechanism establishes a foundation for this exploration of new learning.

The researcher proposes driving single-to-multi-connectedness to bio-corporate systems interconnecting individuals and bio-organisations by investigating Agile EPL creations as transformational catalysts for integration of this research investment, with the goal of advancing Leibold *et al.'s* six strategic knowledge drivers (Leibold *et al.,* 2015; Nonaka, 2017). This single-to-multi-connectedness approach is of significance as it substantiates an adaptable empirical research into a pressing contemporary problem in its real-world setting, even more so when the borders between the pandemic and the context of how people and livelihoods are directly impacted are muddled. The researcher is aware that the pandemic and its diverse confluence on the economics of education have created a unique crisis in which there are numerous variables and living theory, and where the data overwhelmingly supports the notions and recommendations for a new world of work in which an inclusive educational and social transformation journey is imperative.

Meaning making could be defined as a process of interpretation of situations, events, objects or discourses in a comparative framework (Malinverni, Maya, Schaper and Pares, 2017; 2018; Nonaka and Nishihara, 2018) of previous experiences in human knowledge gain (Knight, Paroutis and Heracleous, 2018). Depiction, juxtaposition and salience are prominent visual mechanisms that serve as agitators in underpinning strategic meaning making initiatives (Philippe, Souchet, Lameras, Petridis, Caporal, Coldeboeuf and Duzan, 2020; Shannon-Baker, 2016); however it is becoming increasingly common in comprehensive meaning making endeavours to combine an array of different meanings, spaces, processes and strategies into a global perspective (Blikstein and Worsley, 2016; Firmansyah, 2018; Ramachandram and Taylor, 2017). This provision of multimodality as a meaning making phenomenon could be an emergent learning progression,

especially when employed in highly interactive and immersive learning environments, a true embodiment of EPL.

Meaning making is the process whereby people construct, understand or make sense of life events, relationships and the self (Vygotsky in Mahn, 2012).

In viewing EPL as a novel inductor for future professional meaning making, I align myself with the view of the children's novelist Nina Bawden, who in an interview of her 1975 novel, The Peppermint Pig, said the following about purpose:

"I like stirring the pot-I think it's part of my duty, to shake people up a bit-make them look at things in a different way" (Bawden, 1974).

Likewise, I offer an alternative lens of self-determined objectivity as an approach to the EPL accession in countering Pavlovian predisposition (see Annexure Epic 2.1-The EPL Accession, multimedia).

EPL aspires to propose and position an alternative to the curricula-structured rubrics of responder learning conditioning, specifically in the context of knowledge creation. EPL further strives to encourage autonomy, creative learning environments, collaboration, and co-construction of unanticipated new ideas with an emphasis on personal transformation.

The EPL dimensions as enabler of meaning making focuses the literature review on the dimensions of knowledge creation and Agile maturity for the epistemological scrutiny. The rationale underscoring the scrutiny of the literature review is to enable focus, depth and purposeful contribution to the body of knowledge.

Agile as a way of work in the professional workplace is positioned as an introduction (see Annexure Epic 2-2.2 Welcome 2 Agile–multimedia).

2.1 Preparation for immersing oneself in the EPL journey – A two-dimensional meaning making construct

"If you would be a real seeker after truth, it is necessary that at least once in your life, you doubt, as far as possible."

Extract from Descartes, R (1647) translated from Meditations on First Philosophy.

In a rebellious response to all that is known, all that is prescribed and industrialised, I embarked on a quest for "those things that can be called into doubt" (Descartes and Torrey, 1892). My critical approach follows Descartes's statement to take nothing for granted in the determination to achieve secure and reliable knowledge (Descartes, 2013: vii). The projection is based on the grounds of dedication, preference, foundationalism and the search for absolute truth by returning home (Agile principles) to solitude and awareness of continuous improvement.

Contrary to Randolph's (2009) primary purpose for doing a literature review is, "to demonstrate the author's knowledge about a particular field of study" (Randolph, 2009:2), I align myself more with the views of Gall, Borg and Gall (1996), Hart (1998) and Ritz, Brewer and Neumann (2016) in constructing the literary contribution to self-discovery. The self-discovery journey is underscored by the gain of methodological insights (Hart, 2018; Perry and Vandenabeele, 2015; Xiao and Watson, 2019), relationships and ideas (Hart, 1998; 2018). These insights, relationships and ideas formulate a set of results as an artefact that is encapsulated in a "legitimate and publishable scholarly document" (LeCompte, Klinger, Campbell and Menke, 2003:124; Hart 2018). Further benefits of this journey of self-discovery are the discovery and elucidation of influencing factors pertinent to EPL formation.

This research journey has a comprehensive thematic structure (Booth, Sutton and Papaioannou, 2016; Torraco, 2016; Xiao and Watson, 2019), which offers the benefit of latitude (Hart, 2018; Xiao and Watson, 2019) to cover in detail the complexities of EPL as a research study. This integrative scholarly review further uncovers new knowledge towards:

- the desideratum and rationale that necessitates EPL as an artefact of meaning making mechanisms, and
- the scope of the existing body of professional learning knowledge.

A further aim of this research is to elucidate the inclusivity and exclusivity of EPL meaning making characteristics. These knowns and unknowns are part of the genesis of EPL as a meaning making mechanism. Perlustration of EPL horisons is based on virtue critique, robust conversations and construed revelations.

Specific attention is devoted to new meaning making in mature Agile professional workplaces, as this contributes to the construction of EPL bases for innovative professional learning.

2.1.1 EPL-An approach to meaning making journeys

As mentioned earlier, the approach to this research is based on Descartes's rationalism in the hope of catching a glimpse of "all the knowledge that we may need for the conduct of life" (Descartes, 1961) through "individual experience (Smith, 2016; Kolb, Boyatzis and Mainemelis, 2001) and reason, rather than authority and tradition" (Miller and Miller, 1982; Moon, 2004; Kolb and Kolb, 2017) so as to enable a "clean slate" departure. The "clean slate" departure as the theoretical authority is endorsed by Champy (2018:5) and is the starting point of this meaning making journey. The meaning making journey furthermore provides an adaptive roadmap for positioning the facilitation of new meaning making and presents an innovative approach that is underscored by literature to achieve a sound academic gravitas.

In addition, this approach facilitates the six pillars (which augment two EPL dimensions, that of Knowledge creation and Agile) as an opportunity to analyse of EPL barriers to co-constructive meaning making propositions. Further outcomes of this inquisition could include:

- the co-critique of the proposed EPL meaning making dimensions as a foundation for further discourse;
- the development of an evolved EPL framework as an artefact of the implementation of meaning making mechanisms;
- the availability and application of a symbiotic and co-constructive EPL community of practice; and
- the anticipation of EPL futuristic positioning when required in global meaning making processes.

2.2 Meaning making–a burning platform

"The world is ever-changing and what constitutes a successful adaptation to the environment at one time is certain to represent an unsuccessful adaptation later. Thus, extinction is part of evolution and is the fate of every species sooner or later."

Martin and Klein, 1984

For SEs in the new connection economy to achieve a high level of success, it is essential to enhancing the capabilities of meaning making, knowledge creation and productivity. Without meaning making that is internally generated, produced and acquired internally via humanistic psychology, willingness and productive re-engineering, meaning making cannot be achieved (Amabile and Pratt, 2016). I concur with Steyn (2008), Steger, Owens and Park (2015) in underscoring Amabile and Pratt's vision that meaning making as a building block for EPL should become an essential part of the strategic mindset of the SE. – not only to survive, but to flourish in a VUCA world.

Researchers over the past few decades have widely discussed the rising crisis of the sustainability of 21st century modern society on earth: it is now clear that humankind as a whole has reached, or at best is rapidly approaching, its limits to growth, as Donella Meadows warned 18 years ago (Meadows *et al.,* 1992). Twenty-first century meaning making entities (SE), viz. companies, knowledge workers, creators and bodhi artisans, are obliged to function, in a complex, difficult and unfamiliar circumstance.

This macrocosmic context is transformed by internationalisation, progression and innovative applications of meaning making, learning and hyper competition (Steyn, 2008; Potrafke, 2015), tenders a notion of personal actualisation (Foucault in Kelly, 2017; Hall 2001; Obstfeld, 2015). Postmodern SEs should successfully activate discourse from diverse audiences and immense contributions as co-constructive building blocks for intensive EPL embarkation.

The acceleration of globalisation and rapid technological evolution contribute to increased unpredictability and instability (Huxley, 2007; Sharma and Kodali, 2018; Leopold, 2017), and the emergence of global markets is forcing SEs to adapt to a new competitive economic landscape

(Mella, 2008; Taleb and Douady, 2013) in order to respond to challenging requirements with increased responsiveness and flexibility (Aven, 2015; Fornasiero and Zangiacomi, 2013). SEs are under sustained pressure with the expectation from shareholders and customers to embrace the latest processes, technologies and leadership theories in order to gain or sustain competitive advantage (Drucker, 2018; Archer and Bowker, 1995; Wilber, 2018).

While SEs have realised this urgency by constructing sustainability agendas, professional learning results remain poor compared with the required transcendence at individual, industrial and societal levels. The economy is characterised by rapid, unpredictable change (Dhir, 2019; Mack and Khare, 2016), unlike traditionally managed entities, which stagnate while a new global order is emerging (Grantham, Ware and Williamson, 2007).

It becomes progressively more apparent that we, the industrial-age behemoths (Hadar *et al.,* 2020; Martin and Klein, 1984), are incapable of governing our SEs and societies sustainably. I believe that the rapid, model-shattering adaptations most SEs have been exposed to must still be dealt with by contemporary leadership, which has been unwilling and unable to adapt to the challenges presented. The traditional professional learning models are failing, and no one seems to know what to do.

Kaltenecker (2019) alludes to a spectre of self-regulation, where SEs position themselves to be agile, sensitive and responsive when navigating the "volatile, uncertain, complex and ambiguous" (VUCA) landscape (Lemoine *et al.*, 2017). The apogee in surmounting VUCA circumstance is where SEs are led by employees, work effort is distributed and decision-making authorities are decentralised. Bennett and Lemoine (2014) concur with Mack and Khare (2016) that within this challenging VUCA world, it is imperative for leadership to make new, open, co-constructive meaning making efforts to embrace the necessary radical, innovative approach of EPL (Hadar *et al.,* 2020). Here knowledge-trading organisations should adopt a new leadership paradigm (Bolman and Deal, 2015; Elkington *et al.*, 2017) encapsulating multiple intelligences (Cloete and Du Toit, 2013; Elkington, Steege *et al.*, 2017) engaging in innovative sustainable EPL capabilities.

The world in which SEs function today is becoming more dynamic than ever before, and significant shifts in technology, business, economic and social environment present many opportunities (Davenport, 2010). The VUCA climate also poses many challenges (Bolman and Deal, 2015) to SEs striving to navigate and thrive in the midst of significant knowledge landscape

change. Conventional meaning making processes are discarded and other mechanisms are introduced, powered by emerging innovations that alter the way employees produce in such a new knowledge environment (DiLeillo and Houghton, 2004).

I, "as a finder of fact", agree that SE transformational methodologies, i.e. LEAN practices and principles, business process re-engineering endeavours, Agile interventions and the institution of Kanban fundamentals should drive EPL innovation. This pioneering, innovative work praxis requires the introduction of systems for meaning making and learning (Deming, 1986; Steyn, 2008). In such a challenging environment, SEs should look forward to executing their meaning making processes in such a manner as to maximise EPL efficiency, effectiveness and efficacy (Holstius 1989; Tikkanen, Kujala and Artto, 2007; Vergidis, Turner, Alechnovic and Tiwari, 2015).

To improve and transform EPL process capabilities, SEs are required to move from internal information integration to information exchange with auxiliary SEs. Such co-operative collaboration, which manifests as co-constructive outcomes, I consider a prerequisite for EPL establishment as novel SE navigation and realignment for surviving a neoteric VUCA world (Mack and Khare, 2016; Potrafke, 2015).

Epic 2 – Making meaning from the literature focuses on the dimensions of knowledge creation and Agile maturity. Both dimensions are deconstructed with explicit attention to their three augmenting pillars. This narrative then concludes with EPL as the indispensable end state, which is a prerequisite for SEs' professional workplace methodology.

Agile as a way of work in the professional workplace is positioned as an introduction (see Annexure Epic 2-2. in Welcome to Agile).

The broad concept of Agile, which should encapsulate fluidity, responsiveness, being (pro)active and being mindful regarding energy spent incorporates effort inputs with an absolute focus on value creation. This Agile standard, could serve as innovative approach in navigating and realigning oneself in this VUCA world.

2.3 Describing Agile as a modern EPL meaning making approach

Agile Alliance (2018) defines Agile strategies by comparing it with what are non-Agile strategies. Segue Technologies (2017), Kaltenecker (2019) and Agile Alliance (2018) express Agile as "a system of strategies, designed to minimise the cost of change, especially in a context where important facts emerge late in a project, or where we are obliged to adapt to important uncontrolled factors". A non-Agile methodology is referred to as a strategy (Anderson, 2010; Agile Alliance 2018) that aspires to achieve efficiency by anticipating, controlling or eliminating variables to eliminate the need for changes and their costs.

The adoption of Agile as a meaning making praxis has yielded various degrees of returns in the professional workplace (Douglass, 2015; Goodpasture, 2016). Segue Technologies (2017) emphasises specific benefits of introducing Agile approach as an exemplar in meaning making journeys (see Figure 2.1-Agile meaning making journeys).
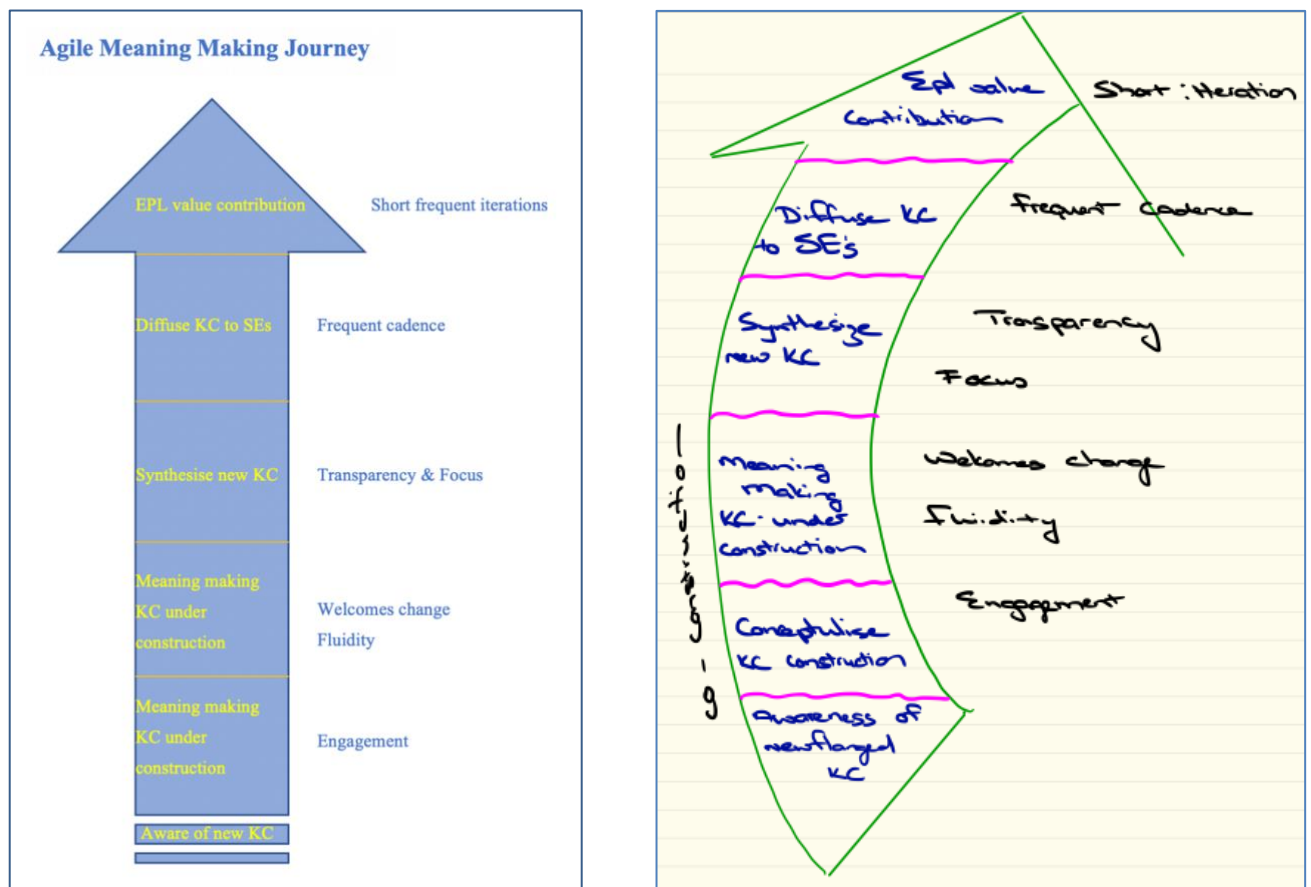
Figure 2.1–Agile meaning making journey (adapted from Segue Technologies, 2017; Agile Alliance, 2018; Kaltenecker, 2019).

Figure 2.1, the Agile meaning making journey initiated and evolved in construction that is depicted by inclusion of the hand written accompaniment.

Segue Technologies (2017) presupposes that if various other ways of work initiatives are applied to software development, significant outcomes could result in a need to revise the planning, funding and operating activities. These preceding elements of the SE development lifecycle (McNamara, Vaaler and Devers, 2003; Cockburn, 2002) could delay progress or/and inflate costs. With Agile transformative induction management (Agile Alliance, 2018; Goodpasture, 2016) a different outcome is expected (Anderson and Carmichael, 2016; Burrows, 2014) and even embraced (Agile Alliance, 2018; Kocaj, 2018; Wester, 2018). Authorities on Agile transformation (Beck, Beedle, Van Bennekum, Cockburn, Cunningham, Fowler, Grenning, Highsmith, Hunt, Jeffries and Kern, 2001) note that this new way of work should be accommodated and form an integral aspect of the SE lifecycle (Anderson and Carmichael, 2016; Beck *et al.*, 2001; Kocaj, 2018).

I propose that SEs should reinvent themselves through innovative Agile-induced, meaning making journeys. These meaning making endeavours require radical learning enablement transformation as postmodern forecast on a knowledge economy that leverages the velocity and imminent essence of knowledge exchanges (Arussy, 2018; Boyne and Rattansi, 2017).

Dwivedi *et al.,* (2020) notes Agile transformative advantages and questions corporate sustainability, which emerged as a precondition for EPL as a 'business case' (Dyllick and Hockerts, 2002; Baumgartner, 2009; Linnenluecke, Russel and Griffiths, 2012). Steyn (2006) recognises CS as a professional learning imperative and suggests that a new cognitive architectural syntax should be derived from acute awareness and continuity of knowledge creation (Steyn, 2006). This notion is supported by Senge (2008) and Davenport and Kirby (2016), who reinforce the impression that knowledge creation, sustainment and proliferation could be a distinct advantage in the knowledge economy and thus contribute as a building block for EPL (Senge, 2008; Steyn, 2006; Davenport and Kirby, 2016).

2.4–Dimension-Knowledge creation as a vehicle for meaning making

Knowledge should continually be renewed by ceaseless effort if it is not to be lost. It resembles a statue of marble which stands in the desert and is continually threatened with burial by the shifting sand.

Albert Einstein (Gardner, 1993)

2.4.1 – Knowledge–An investment in meaning making

The Protagoras, like several of the dialogues of Plato, was narrated by Socrates, who described a conversation which had taken place between himself and the great sophist at the house of Callias (Pater, 2019).

The dialogue commences with a request on the part of Hippocrates that Socrates would introduce him to the celebrated teacher Protagoras. Socrates, after explaining the purpose of their visit to Protagoras, asks the question what he (Protagoras) will make of Hippocrates. Protagoras answers, "That he will make him a better and a wiser man." Socrates then prompts him for a more precise answer: "But in what will he be better?". Protagoras replies, "That he will teach him prudence in the sciences or knowledge of human life" (Plato, 2018:23).

Excellent attempts have been made to define knowledge. Socrates applied a dialectic approach to extracting knowledge from the soul (Lawhead, 2014; Pater, 2019); Plato, under the influence of Socrates (Lawhead, 2014), postulated that our bodies are counterproductive in the process of acquiring knowledge and deceive the soul when it tries to learn the truth. Plato further described knowledge as justified true belief (Gardner, 1993; Pater, 2019). This definition is now thought by some analytic philosophers to be problematic, resulting from what are referred to as "the Gettier problems", where knowledge is positioned as a proposition of justified true belief (Gettier, 1963). Nonaka (2018), Steyn (2008) and Hansen (2002) construe knowledge as structured information for problem resolution and decision-making. Nonaka (2018) alludes to the organic nature of knowledge, stating that in traditional Western epistemology (the theory of knowledge) knowledge is defined as "justified true belief." This statement characterises knowledge as an entity that is absolute, static and nonhuman, but this fails to address the relative, dynamic and humanistic dimensions of meaning making (Nonaka, 2018). Knowledge should be regarded as context-specific and relational (Habermas, 2015); it exudes dynamic capabilities, as it is dynamically

created in social interactions. Knowledge is also humanistic, and it has both an active and subjective nature that could elude in stating that Knowledge is the accumulation of social and intellectual property assets acquired through dynamic meaning making-processes believed to be "true" for a given purpose and time. (Hansen, 2002; Nonaka, 2018).

2.4.2 Knowledge creation–Knowledge productivity and management an artefact of meaning making action

The conversion of information converts tacit knowledge through four interdependent pathways into explicit knowledge, according to Takeuchi and Nonaka (1986): firstly, the conversion from tacit into explicit knowledge requires a new phase of meaning making socialisation. Secondly, tacit knowledge is communicated directly through the externalisation meaning making process; thirdly, explicit knowledge is transformed into tacit knowledge and fourthly, implicit knowledge during the internalisation process becomes explicit (Dalkir, 2005; Powel and Snellman, 2004).

The most difficult transformations are those of a tacit nature that turn explicit knowledge (externalisation) and explicit knowledge into tacit knowledge (internalisation). Reuse and exchange of information is encouraged by knowledge socialisation, which is founded on its individual level and upwards through constructivist communities of new meaning through interaction (Dalkir, 2005; Takeuchi and Nonaka, 1986, Davenport and Kirby, 2016). The fluidity of information, as delineated by post-modernists (Pasher and Ronen 2011), requires custodianship underpinned by meaning making apprenticeship to continually update organisational EPL progression (Steyn, 2006; Nonaka, 2018).

The SEs' ongoing process of meaning making development (Garvey and Williamson, 2002; Bodendorf and Lorenz, 2017), embodies dissemination and creative embodiment of small learning narratives and the sequential learning phases that could ensure the instantaneous utilisation of knowledge conversion from tacit to explicit information (Malhotra, 2005).

It only applies when transitioned knowledge is socialised to a skill that becomes useful and imposing (Saint-Onge, 2005). Conversion of implicit into explicit knowledge contributes to a strategic benefit as leadership evolves (Dalkir, 2005). Tacit meaning making is personal,

demanding and firmly ingrained in the knowledge worker's individual experiences, values and emotions (Auernhammer, 2014; Hacker, Bodendorf and Lorenz, 2017). Analytical and cognitive knowledge creative parameters should be employed with synergy, integrity and dignity (Zahra, 2015, Nonaka, 2018).

An SE's knowledge base should not be limited to existing formal frameworks with confined potential that are prescribed in terms of knowledge workers' skills and qualifications, though an informal component is present that is informal and very often taken for granted (Williamson, 2002; Hacker, Bodendorf and Lorenz, 2017; Nonaka and Nishihara, 2018).

2.4.3 Knowledge management–A glimpse of sustainable future rent

Knowledge management is an ancient phenomenon (Anon, 2003; Chen *et al.*, 2018) that has arisen since time immemorial, where the priesthood and traditional leaders became living repositories of distilled wisdom for their communities' preservation and continuity (Steyn, 2006; Viitala, 2018). Humans have always found ways to share knowledge and build on earlier experience so as to eliminate costly redundancy and avoid repeating the same inappropriate action. New technology has extended the time, delivery, depth, breadth and reach of knowledge capture (Dalkir, 2017; Firmansyah, 2018), sharing and dissemination through creativity and continuous innovation, where information technology enable the systematic leveraging of knowledge (Kanter, 1997; mann, 2018; Tiwana, 2002; Zahra, 2015). The contemporary knowledge worker, within the learning organisation, creates continuity from past experiences (Tobin, 1998; Lewis, 2015; Dalkir, 2017) stored in the organisation's memory systems, where transformational leadership navigates the new expertise (Bolman and Deal, 2017; Majeed and Jamshed, 2021; Viitala, 2018).

Knowledge management discipline is considered in its growth cycle's third generation (Dalkir, 2017; Mousavizadeh, Ryan, Harden and Windsor, 2015; Pasher and Ronen, 2011). The first generation based on intelligence and information development (Damşa and Ludvigsen, 2016; Romero and Ventura, 2013). The information explosion generated vast reproduced information repositories, the primary product being raw or semi-processed data (Jackson, Hih and Denisi, 2015). SE leadership's conundrum was how to use and translate this data into an inventory of intrinsic value and tangible net assets (Viitala, 2018). This first generation process (one of three) was marked by standardisation and benchmarking of knowledge use as information (French, 2013;

Dalkir, 2005, 2017; Paras, 2020). The second wave of knowledge management theory focused on human capital and explicit knowledge socialisation within organisational application context (Dalkir, 2017, Von Krogh, 2012; Nonaka, Toyama and Konno, 2000; Jiang, Flores, Leelawong, and Manz, 2016). At this stage, contemporary management efforts emphasised exploiting individual intellectual property to mitigate the prominence of individual effort. (Mousavizadeh, Ryan, Harden and Windsor, 2015; Rorty, 2017).

Third generation knowledge transfer has generated innovation and creativity as key components of the knowledge development cycle (Li and Holsapple, 2018; Mousavizadeh *et al.*, 2015). The first and second generations concentrated on rising intellectual capital's relative weight (Dalkir, 2005, 2017; Adriaenssen *et al.*, 2017; Leibold *et al.*, 2015) third-generation knowledge management articulated knowledge networks and a continuous information innovation drive in organisations (Romero and Ventura, 2013; Von Krogh, 2000).

Drucker (2018) and Edvinsson (2002) define an invisible economy, where the economy is considered a new reality and challenges relate to technological (Neba, 2016; Rooney, 2019) and psychological issues and the changing of existing economic laws. Fornasiero and Zangiacomi (2013) and Anon, (2003) argue that the new reality requires a radical new insight from radical new economists, where the diminishing return is transgressed to increase yield (Moon, Crane and Matten, 2013; Omari, Kaburi, Sew, 2015). The understanding of meaning making and how to achieve knowledge creation have changed and will continue to change (Omari *et al.,* 2015; Powel and Snellman, 2004).

2.5 SE learning creation culture and climate

The desired path for SEs in attaining a competitive CS is to expedite continuous professional learning in novel ways (Alavi and Leider, 2001; Dalkir, 2017; Mohrman, 2003; Senge, 2008). To this end, SEs should develop their professional learning capabilities (Davenport and Prusack, 2012; Jackson *et al.*,2015). Knowledge sharing as a SE value system seeks to transform accessible and traditional knowledge into innovation-based repositories in order to grow new value propositions for the future (Leonard-Barton *et al.,* 2015; Steyn, 2006).

Nonaka and Noboru (1998) and Nonaka (2017) note that SEs embracing traditional management models focus on how to control the meaning making process, flow and knowledge creation. This is echoed by Von Krogh *et al.*, (2012). In such models, knowledge workers are viewed as machines for information processing, which is described as a problem-solving activity (Nonaka, 2017; Read, 2020). Heinrich and Richter (2015), Leonard-Barton, Swap and Barton, (2015) and Paras (2020) elaborate on Nonaka's statement by concluding that proper solutions can only be achieved through a critical dependence on human cognitive and social abilities.

These transformed meaning making actions, knowledge creation and professional learning (Auerhammer and Hall, 2014; Lowell, Matson and Weiss, 2007; Martins and Martins, 2002), add value by elevating EPL in the knowledge hierarchy (Dalkir, 2017; Siemens, 2014) to a higher state of application (Stehr, 2015; Yi Chin Hsieh, 2016). Human capital contributions rely on SE leadership to promote and encourage experimental meaning making activities accompanied with knowledge generation and socialisation in a networked economy (Dalkir, 2015, 217; Kanter, 1997; Paras, 2020; Saint-Onge, 2005).

2.5.1   The co-constructive knowledge worker profile

These connected making custodians distilled outcomes as artefacts (Vermunt, 2011; Paras, 2020) and draw the conclusion that dialogic learning can be described as meaning making-centred underpinning of constructivism (Ball, 2013; Gravett 2005:41; Mazzocchi, 2013).

"Constructivist theories share some commonalities with behaviouristic and cognitive theories, for they focus on actively involving meaning-makers (knowledge workers) in learning experiences" (Davenport and Kirby, 2016:21). This collaborative notion is echoed by Turriago-Hoyos, Thoene and Arjoon (2016), Von Krogh *et al.* (2012) and Mazzocchi (2013). Augmenting the collaborative notion is the provision of structuring knowledge frameworks (Dalkir, 2017; Lamond, Huang and Wu, 2010), "with the result that these knowledge workers could extract maximum amounts of data" (Gravett, 2005:18-19). Authors Piaget (1976), Connell *et al.,* (2017) and Nonaka *et al.*, (2000) reiterate that meaning makers are expected to be individuals who can reason and interpret knowledge. If this is true for meaning makers, similar conditions apply to mentees regarding professional learning, where mentees are seen as learners. A constructivist viewpoint is that meaning making changes (Park, 2016:1235); here the idea that meaning making is built or socio-constructed (Nonaka *et al.*, 2000; Von Krogh *et al.*, 2012) refers to the fundamental assumption of

constructivism that knowledge workers actively construct knowledge as they shape and build mental frameworks to make meaning of their environment (Connell *et al.,* 2017; Krauss, 2005). In the context of my study, knowledge workers actively construct meaning as they shape and build frameworks (Drucker, 2018; Kurzynski, 2009) to make meaning of their SE practice and professional development. Various authors (Du Toit, 2018; Turriago-Hoyos, Thoene and Arjoon, 2016) argue that our meaning making activities construct reality and that people, as members of society, invent the properties of the world through meaning making excursions (Park, 2016; Riley and Park, 2014, Nonaka *et al.*, 2000; Nonaka and Nishihara, 2018).

Vygotsky's (1978) central relevance to socio-constructivism derives from his theories of language and thought and their mediation by society. He sees the process of knowing as disjunctive, involving the agency of other people and mediated by community and culture. These knowledge establishment theories emphasise the social context of learning through collaborative peer groups, apprenticeship and the social model that underpins the forming of knowledge frameworks (Gravett, 2005:18-19; Nonaka and Nishihara, 2018). When considering a constructivist theory, Nonaka *et al.,* (2018) believe that the professional development of meaning makers should focus on maximising human potential. Slabbert (1997:43) clarifies the concept as follows: "Maximising human potential is the process whereby the human being continually exceeds him-or herself in every possible way."

Mezirow (2003:58-59) links transformative learning to Habermas's (2015) instrumental and communicative learning. Mezirow points out that one should assess the legitimacy of claims through a process of "critical dialectical discourse" to analyse the claims and judge their legitimacy. Similarly, De Boer *et al.* (2015:67) mention that when one becomes aware of and revises and acts upon these new meaning making perceptions, there will be facilitation of learning in contrast to 'teaching'. These novel, connected socio-constructivist learning environments are driven by the understanding that decisions are based on rapidly altering foundations. New meaning making is continually being acquired, where the ability to recognise when new information alters the landscape based on decisions made yesterday is regarded as critical. Nonaka and Noboru (1998) describe these connected socio-constructivist learning environments as Ba (equivalent to "place" in English), a shared space for emerging relationships, where "space" can be physical, virtual or mental. Nonaka (2008) also notes that knowledge, unlike information, cannot be separated from the context, as it is embedded in Ba. Nonaka and Nishiguchi (Nonaka, 2018)

explore Ba nature as SE culture, which conditions social relationships among these meaning making units and hence has a determining influence on the scale and scope of knowledge creation. Knowledge creation implies the capacity for action in social life (Braunerhjelm *et al.,* 2018; Habermas, 2015). This implies that the realisation and implementation of knowledge are dependent upon the social, economic and intellectual context (Hacker, Bodendorf and Lorenz, 2017; Nonaka, 2017; Stehr, 2015). For these reasons, meaning making should be facilitated, interpreted and linked to local circumstances. Auernhammer and Hall (2014:158) alludes to the SE culture, which should support and enable the knowledge worker's experiential meaning making journey. Bollinger and Smith (2001:5), like Adriaenssen, Johannessen and Johannessen (2017), suggest that this behaviour values meaning making, which strengthens knowledge exchanges and socialisation (Cortada, 1998; Drucker, 2018). According to Ventura (2018:43-57) and Reyt and Wiesenfeld (2015), human relationships are an imperative to knowledge formation, the exchange and distribution thereof. Knowledge workers share their skills to build new knowledge repositories while they enhance their contribution to the learning SE (Adriaenssen *et al.*, 2017; Garvey and Williamson, 2002:181). Their primary goal is to create, distribute and extend new meaning making (Adriaenssen *et al.*, 2017; Davenport and Prusak, 2012:78). These communities of practice display the vision to implement platforms where informal, semi-structured learning, skill sharing and inspiration are advanced in new meaning making (Wenger, 2011; Egan and Jaye, 2009). Thornhill, (2006) infuse an organic "continual growth and evolvement perspective", (Wester, 2018:460) in noting that these knowledge-fostering communities should be "living networks" (Thornhill, 2006:693), wherefrom formation of repositories embracing meaning making, knowledge creation and innovation result. These living fora in the optimal state of the function should (as a benefit) enhance SE performance and competitive intelligence (Wenger *et al.*, 2002; Wenger, 2011). These opportunities towards making meaning embrace the creation of postmodern, insightful ideas (Amabile and Pratt, 2016; Auernhammer and Hall, 2014; Boyne and Rattansi, 2017), which are the nodes to new knowledge-based opportunities (Adriaenssen *et al.*, 2017; Antonakis, 2017).

The contemporary workplace requires a substantial progressive reform from conventional approach, leading to a significant cultural transition from traditional methods of knowledge production, which can best be portrayed as bureaucratic, autocratic and mechanical. This transformation foresees an SE that enables meaning making that can trigger innovation and creativity for knowledge development and exchange (Adriaenssen *et al.*, 2017; Thornhill, 2006).

Attempting to argue that the SE functions should be associated with a 'appropriate natural space for learning,' which is imperative if a sustainable knowledge creation advantage is to be achieved. Newfound and innovative ideas are indeed the portfolio of new prospects in the knowledge economy, and current management praxis should continuously challenge their meaning making communities of practice to search for broader imaginative learning horisons. This would yield the meaning making skills and abilities essential for enhanced knowledge success based on the individual and collaborative contribution

2.5.2 Meaning making character – An Agile journey

The most profound disputes in epistemology focus on concepts that are quite obviously ethical and often borrowed from a theoretical discourse (Zagzebski, 1996). With this in mind, I regard the knowledge worker and Agile as environmental meaning making mechanisms pivotal to this discussion. The rationale is based on reverse engineering the sustaining purpose of this research outcome, being the construction of lasting contributions to knowledge creation through meaning making to the benefit of a functioning knowledge society.

Drucker's theoretical framework (Turriago-Hoyos *et al.,* 2016) of knowledge workers is appropriate for describing meaning making as knowledge innovation, which by nature is a human action based on a profound moral character and significance (Drucker, 1999; Foucault in Paras, 2020; Mouton, Malan, Kimppa and Venter, 2015). This deduction is based on the social nature of human beings. Consequently, meaning making as an activity provides criteria for the discernment, orientation and "ultimate organisational foundations of social interaction" (Park 2016:1237), which underscores Drucker's virtues of the knowledge worker. Drucker notes that the main attributes are grounded in a stable and well-defined ethical and anthropological framework (Drucker in Kurzynski, 2009; Hacker, Bodendorf, and Lorenz, 2017). These virtues could arise from the need to achieve effectiveness and competitiveness in SEs and in society as a whole, which comprises both the individual and social outlooks (Drucker, 2018; Turriago-Hoyos *et al.,* 2016).

The complete fulfilment of meaning making by application of critical and creative thinking promotes the notion of accomplishment, underpinning the principle of the excellent standard guiding "the primary goal of human affairs concerning production, trade arrangements, political institutions, and social welfare" (Turriago-Hoyos *et al.,* 2016). I concur with Park (2016) that

fostering practical ways to develop knowledge workers' "intellectual virtues and moral character" (Park, 2016: 1238) in the professional workplace is a transformational leadership function (Majeed and Jamshed, 2021; Toendepi, 2017; Vilakati, 2016). Furthermore, implications for management education should be reflected upon to "harness the power of each unique reason to act in a virtuous manner" in the contemporary knowledge society (Park, 2016: 1240). As a case in point, Drucker (1967) insists that "effectiveness can be learned" over time via a process of repetition that is similar to other pedagogical processes (p.21).

We should also be aware that cultivating knowledge workers' virtues and moral character is fraught with difficulty, because each virtue has a corresponding vice by defect on the one hand and by excess on the other. This then represents a real challenge to both the development of virtuous behaviour in the workplace and to management education.

2.6 Knowledge creation–Knowledge productivity–Leadership and the knowledge worker

I argue that a new transformational leadership approach (Jankowski, 2020; Majeed and Jamshed, 2021) should direct SEs towards a strategy that facilitates fourth-generation metaknowledge creation, where the knowledge creator is autonomous. Future leadership should encourage and enhance meaning making action through interaction, co construction and exchanges, which should prompt a demand for a profound change in strategy, technologies, SE climate and culture (Martins and Nienaber, 2016; Zakaria *et al.*, 2004). I concur that leadership in contemporary SEs should further evolve to act as an enabler (Young, 2013) fostering open learning ecologies (Reed and Lister, 2014) where true knowledge sharing and creation (Howkins, 2010) can happen.

The notion that SE leadership and culture facilitate, promote and endorse the collective meaning making intent that drives SEs towards competitive advantage (Barney, 2014; Bass and Avolio, 1994; Pasher and Ronen, 2011; Malhotra, 2005; Nguyen and Chau, 2017). The notion could suggest that when SE leadership conforms with strategic goals, it progresses the aspects of a post-modern learning society which could leverage creative knowledge sharing (Antonakis and Day, 2017; Zahra, 2015; Nonaka and Nishihara, 2018). Discoveries of creative knowledge generation, exchange and socialisation support the economic and strategic framework of the progressive SE (Barney, 2014; Davenport and Prusak, 2012; Denning, 2018; Leibold *et al.,* 2015).

I conclude with the opinion that in the postmodern context, individual creativity and innovation could play an essential role in this paradigm shift from traditional leadership to one that promotes the socialisation of meaning making outcomes through internal and external meaning making dialogues. Transformational leadership (Bennett and Lemoine, 2014, Jankowski, 2020; Reza, 2019) could accomplish integration and total synergy via meaning making concomitance (Davis, 2013) and could introduce professional learning networks that constitute the building blocks of EPL (Drucker, 2018; Steyn, 2006; Young, 2013).

2.6.1 Transformational leadership required

Hughes *et al.* (1999) and Bolman and Deal (2017) define leadership as the provision of meaningful intent and purpose by generating SE engagement and empowering people to achieve a shared vision and strategic aim. This view has been expressed in synergetic principle by Dyer and Dyer (2017), Hameed and Sharma (2020) and Toendepi (2017). Ventura (2018) draws a clear distinction between management and leadership that is very applicable to this research, as I argue that the burden of patriarchal management practices emerged in industrial capitalism's modernist construct (Toendepi, 2017; Liker and Convis, 2012). In contrast, EPL as a product of new meaning making is described throughout this postmodern debate (DiLiello and Houghton 2004; Nonaka, 2008; Pasher and Ronen, 2011), where authority is disseminated in the SE and leadership reflects sufficiently to facilitate a more appropriate comprehension of the knowledge worker's contribution (Von Krogh, Roos and Kleine, 1998, Young, 2013). Within this postmodern context, the fluidity of knowledge and the immediacy of creative exchanges are the foundation for sustainable meaning making progression (Kezar and Holcombe, 2019; Nonaka, 2017; Von Krogh *et al.*, 2012).

Davenport and Kirby (2016) propose that management contributes to planning, budgeting, and tracking the actual impact of knowledge socialisation which is based on the organisational functional components (Adriaenssen *et al.*, 2017; Champy, 2018). Managerial efficiency applies to input and output processes, which is measured and positioned as effectiveness through conventional management systems (Hameed and Sharma, 2020; Liker and Convis, 2012). A change-focused leadership style (Dyer and Dyer, 2017) has been presented as a third dimension where the two-faceted view of conventional management models, focused on activities and individual orientations. The change ideology necessitates a leader who can construct a compelling vision, embrace innovative thoughts, communicate efficiently, promote teamwork, be responsive

and encourage strategic knowledge implementations (Leibold *et al.,* 2015). The typical management role is where the primary emphasis on the individual knowledge worker and the alignment of EPL transition. This model suggests that individual orientation is desired in scenarios where positive interdependence is to be maintained, in the creation of a favourable meaning making environment, and is therefore conducive to generating fresh ideas and constantly challenging one's personal beliefs (Viitala, 2018).

Leadership affirms the emerging meaning making imperatives by evolving SEs' as the primary catalyst of sustainable EPL progression (Tourish, 2014). This leadership act determines the course and future positioning of the contemporary organisation to navigate and address the demands of the modern knowledge society. It is considered important that the significance of EPL as future strategic intent is emphasised by leaders, who regard knowledge workers as key for success. These transformational leaders, have the capacity to inspire confidence and promote active knowledge exchange and socialisation of new meaning making (Jankowski, 2020; Majeed and Jamshed, 2021). Fry and Kriger (2009) with Reza (2019) postulate that for effective transformational leadership to manifest, "five levels of being should be utilised. These levels include mindfulness of:

- the physical world
- the world of images and imagination
- the level of the soul
- the level of the spirit
- the non-dual level, where leadership is based on "oneness" and "constant reconciliation of apparent opposites."

Mertz (2015) concurs with level five of the Fry and Kriger model by noting that human-centred leaders follow principles that matter (Mertz, 2015; Reza, 2019). I believe that human-centred leadership portrays a people-focused approach based on universal value systems such as the quest for personal self-transcendence and simultaneous service to others, regardless of their level of being. Ramachandram and Taylor (2017), Elkington *et al.,* (2017) note that meaning making promotes learning and that special attention is required for the SE to prosper in the knowledge economy. Dalkir (2017:53) underscores "special attention" by recognising the role of the transformational knowledge leader to include leadership in the meaning making process and coordinate knowledge created by socialisation (Senge (1990) argues that traditional SE leadership

is collective and highly individualistic, where leadership should advocate (as a cardinal imperative) meaning making and subsequent learning (Jankowski, 2020; Majeed and Jamshed, 2021; Reza, 2019). Senge, 1990; Steyn 2008; Tourish, 2014). Since the SE knowledge is created by people, in order to be a useful knowledge leader a more human-centred approach should be taken in the network economy (Takeuchi and Nonaka, 1986; Wiig, 1994).

Furthermore, leaders should include knowledge workers in the constructing the organisations mission, vision and strategic purpose (Dinh, Gardner, Meuser, Liden, and Hu, 2014). The knowledge workers' participation in SE philosophy and rationale gives them the autonomy to mould their knowledge roles within the SE context. The relationship between knowledge worker and leadership is therefore essential to the development of structured communities of practice. (Auernhammer and Hall, 2014; Nonaka, 2018). These as contrasted to unstructured transactions between knowledge workers, that are essential to the concept of continuous re-engineering and initiate shifts that are vital to driving the development of new knowledge (Saint-Onge, 2005; Antonakis, 2017; Martins and Martins, 2002).

I see leadership as an integral part of any SE meaning making journey by directing the organisation's vision (Elkington *et al.,* 2017; Leipold *et al.,* 2015). In developing new leadership skills in the knowledge economy (Bolman and Deal, 2017) the emphasis should be on welcoming the complexities of the future (Snowden, 2006) by demonstrating a vision that is focused on knowledge-building and meaning making transformations which should enable the deliverance of creative EPL landscapes (Howkins, 2010; Mann, 2018). Viitala (2018) unveiled knowledge leadership and suggested that there is a vast disparity between knowledge management and knowledge leadership because knowledge leadership relates to fostering ongoing growth and innovation (Chen *et al.*, 2018). Individuals are considered central in promoting community learning. The meaning making system is critical for achieving SE goals through continuous learning and innovation. I suggest that the presence of knowledge leadership is to enhance knowledge-building capacity by instilling responsibility for meaning making journeys, knowledge acquirement, exchange and commerce. Knowledge leadership translates into transformational leadership, as it promotes meaning making infrastructure and incentives to reuse new knowledge gain (Amabile and Pratt, 2016; Drucker, 2018, Reza, 2019).

Transformational leadership is described as coaching and promoting strategic knowledge resources, communicating explicitly to everyone in the organisation and synchronising highly

disaggregated entities (Adriaenssen *et al.,* 2017; Bass and Avolio, 1994; Leibold *et al.,* 2015). Transformational leadership is a product of leadership (Jankowski, 2020; Toendepi, 2017) incorporating the knowledge generating organisation and accelerating the process of innovative thinking and creativity (Barney, 2014). Transformational leadership roles include mentor and facilitator rather than controller functions (Antonakis, 2017; Majeed and Jamshed, 2021; Vilakati, 2016). The role of transformational leadership should include their societies' eternal challenge to explore new imaginative horisons (Bass and Riggio, 2006; Reza, 2019).

This meaning making should produce the skills and capabilities desired for enhanced effectiveness, based on the individual and collaborative innovative contributions. Parker, Holesgrove and Pathak (2016) underpinned by Dhir (2019) supports Toendepi (2017) designate this quality in the profile of "transformational leadership" as one who inspires all to metamorphose into attaining leadership potential. Bass (1994), Dwivedi *et al.* (2020) and (Jankowski, 2020) contributes a learning facilitator's vision, where such transformation requires a substantial investment in the professional development of meaning makers, enabling and mobilising all to act as mobilising agents for new meaning making in their professional development. I believe that transformational leadership transcends specific leadership classification boundaries and should embody an arrangement of postmodernist leadership capabilities in the adaptation as required (Champy, 2018; Mc Kinsey, 2018; Ventura, 2018).

Transformational leadership is described as a common characteristic of human-centred leadership which has become imperative, as I think conventional leadership in the postmodern arena has become obsolete (Barney, 2014; Champy, 2018). This leadership style requires a distinct approach to meaning making in the quest for knowledge creation with the rationale of progression to a modern knowledge-building landscape, in which a new leadership persona is demanded (Hughes, Ginnett and Churphy, 1999; Toendepi, 2017; Tourish, 2014). The transformational leader also navigates and advocates SE meaning making (Reza, 2019; Vilakati, 2016), this involves planning and deploying systems, channels and meaning -making relationships (Majeed and Jamshed, 2021). It also facilitates knowledge-building by identifying responsibilities, new opportunities, promoting the career growth of knowledge workers and developing knowledge forums (Bell, 2011; Nonaka, 2017; Wenger, 2011). It is also the leader's obligation to foster a SE culture that encourages tacit and explicit knowledge sharing and continuous SE learning (Martins and Nienaber, 2016). Kezar (2019) proposes that cultural transformation custodianship and relationship building attributes be included in the transformational leadership profile. Leadership supports the cross-SE practice

knowledge networks and acknowledges champions of knowledge as well as the sponsors of knowledge and furthers new meaning making excursions (Auernhammer and Hall, 2014; Bolman and Deal, 2017; Majeed and Jamshed, 2021; Reza, 2019; Wenger *et al.,* 2002).

The transforming leader considers knowledge workers to be essential to fostering the creation of knowledge which then inspires trust and cooperation (Majeed and Jamshed, 2021; Reza, 2019; Toendepi, 2017; Vilakati, 2016). I am of the opinion that transformational leadership transcends specific leadership classification boundaries and embodies an arrangement of postmodernist leadership capabilities in the adaptation as necessitated. It is ideally leadership quality that decides whether knowledge workers' skills, ability and engagement as innovative skill and creative ideation in the futuristic SE become expressed.

The driving forces of competitive significance in a new economic age should be promoted as transformational leadership, as future knowledge value is gained by intangible intellectual rent, not by tradeable tangible assets (Auernhammer and Hall, 2014; Reza, 2019; Toendepi, 2017). The concept of competitive meaning making advantage is described as an assessment strategy that offers a unique value contribution through the introduction of multifaceted capabilities that can be exploited to the advantage of a SE (Aithal, 2016; Grant, 2016; Nguyen and Chau, 2017).

For transformational leadership to be effective, eight primary attributes have been established (Viitala, 2018; Bolman and Deal, 2017). In the modern economic environment, the ability to guide meaning making processes and acknowledge the work of knowledge uncertainty is essential (Hislop, 2009; Jankowski, 2020; Selen, 2000). Transformational leaders should promote, encourage (Dalkir, 2017), create and enhance new learning (Majeed and Jamshed, 202; Siemens, 2014). Fullan (2014) and Nonaka (2018) contributes in framing transformational leadership attributes by stating that transformational leaders should intend to create and preserve credibility with knowledge workers. Reza (2019) furthers the conversation by noting that transformational leaders should be aware of the interconnectedness and association between processes, variation, context and human psychology. This is echoed by authors Majeed and Jamshed (2021) and Vilakati, (2016). Creating a coherent purpose, intent, course of action and emphasis on individuals and a SE with the ability to combine different meaning making construction strategies are important (Dinh *et al*., 2014; Takeuchi and Nonaka, 1986; Senge, 1990:346). The new transformational leader should be comfortable and confident in technology (Reyt and Wiesenfeld, 2015) and its role in enabling SEs' to accomplish and develop (Leibold *et*

al.; 2015; Young 2013). In the third generation of knowledge management, the primary driver of success for transformational leadership is the ability to foster strategic meaning making conversations and rendering the SE's purpose to create new knowledge (Dalkir, 2017; Nonaka *et al.,* 2000).

Transformational, "new leadership" should embark on a new SE meaning journey to adopt the required progressive, disruptive approaches needed in today's hyper-competitive knowledge economy (Jankowski, 2020; Reza, 2019). The suggested approach is where transformational leaders leverage the creative and disruptive capacity of knowledge workers through the creation of creative facets, namely fluidity and creation (Adriaenssen *et al*., 2017; Toendepi, 2017). This in turn, should propel the efficiency of knowledge, which should be an essential aspect of SE sustainable practices. This research indicates that leading SEs need to unravel the modern economy of meaning making by tapping into lived perceptions, imagination and instincts of the individual knowledge worker. The quest for transformational leadership is not only an answer to recent SE and subsequent calls (Antonakis, 2017) for more ethical leadership, but also a result of transformation, enablement and new quests in a global meaning making and professional learning landscape (Leipold *et al*., 2015; Toendepi, 2017; Dwivedi *et al.*, 2020).

SEs are required to cultivate and encourage leaders who understand that SE renewal and competitive readiness depend on the employee's willingness to meet potential challenges (Antonakis, 2017; Bolman and Deal, 2017; Dinh *et al.,* 2014) continuous change (Champy 2018), lifelong learning (Benson, 2002; Nonaka, 2018; Kezar and Holcombe, 2019) and ever-increasing competition (Amabile and Pratt, 2016; D'aveni, 2010; Godin, 2018; Senge, 1999). When transformational leadership is considered an ingrained capability, competitors cannot readily replicate nor duplicate the progressive leadership attribute (Reza, 2019; Vilakati, 2016), hence tacit knowledge establishment should be linked to the SE's collective knowledge architecture (Dalkir, 2017; Nonaka and Nishihara, 2018; Viitala, 2018).

Thus I concur with Du Toit (2018), who postulates that for transformational leadership being an agent of change is not enough, considering the demands of the 21st century, it requires meaning making as the creative agent of future knowledge sustainability. Transformational leaders should not manage knowledge, but apply it to the accomplishment of SE goals. They, the transformational

leader, immerse themselves, foster collaboration, negotiation, cultivate information exchange and facilitate collaborative co-creative processes for knowledge growth. Support for an inclusive culture is essential to build a platform for new meaning making, which will rely on the willingness and commitment of leadership to effectively promote meaning making experimentation and knowledge transfer. The inclusive transformation journey is also required to deal with the obstacles regarding collective decision-making. Leadership can also influence the current organisational culture, which can lead to the advancement of a transformation-driven value culture, and this should be synthesised with the strategic vision, future perspectives, purposefulness and the promotion of trust so as to achieve cultural readiness in EPL (Tharp, 2012; Toendepi, 2017).

2.7 Knowledge creation-Knowledge productivity–Innovation and creativity

2.7.1 Vacancy 1: Meaning making custodians required

As stated earlier, The SE that thrives in the new economic paradigm will rely on the ability of creative intelligence to apply its meaning making capability constructively (Steyn, 2008; Kanter, 1997; Mousavizadeh *et al.*, 2015). These SEs are further distinguished by a high level of knowledge expertise that adds value by producing, transmitting and adding new meaning making outcomes (Dalkir, 2017; Drucker, 2018; Zahra, 2015). These meaning making custodians, aka knowledge workers – interpreters and collaborators of meaning – and their converted, intellectual capital sharpen the cutting edge of new EPL establishment.

The knowledge worker is the co-creator within the SE, who applies generated knowledge as meaning making artefact (Reyt and Wiesenfeld, 2015) to be more productive intrinsically (self) and extrinsically (SE) (Adriaenssen *et al.,* 2017; Cortada, 1998; Turriago-Hoyos *et al.*, 2016). Knowledge worker activity includes accumulation, processing (meaning making) and the review of data and information (Saint-Onge, 2005; Hacker *et al.*, 2017). This process also includes the creative transformation of the knowledge product and its revolutionary distribution and creative commodification (Tobin, 1998; Davenport and Kirby, 2016; Snowden, 2006; Powell and Snellman, 2004). In enabling the knowledge worker, Heinrich and Richter (2015) propose consideration of the following five impact factors:

- **Autonomy:** Equality of options as to what to do when and the prospect of taking decisions of their own without consulting a multitude of managers and peers.
- **Competence:** The capacity to make educated choices, often necessary for problem-solving and creativity, with the assistance of collaborative learning.
- **Relatedness:** Parameters of employee commitment and engagement.
- **Variety:** Differentiation of activities during the day-to-day work of employees.
- **Protection:** To relieve anxiety and psychological surcharge.

The first three aspects can be consolidated into the principle of psychological empowerment (Dawkins, Martin, Scott and Sanderson, 2013) as reflected in the theory of self-determination, that portrays similar characteristics (Deci, Connell and Ryan, 1989; Jiang *et al.*, 2016). In the domain of empowerment, the fourth group (variety) fulfils a particularly important role in the sense of work (Auernhammer and Hall, 2014; Damşa and Ludvigsen, 2016). Hence I proffer that new meaning making is made possible by the knowledge worker's self-empowerment, protection, co-determination, constructiveness and psychological custodianship.

Inclusive new meaning making engages the diverse stakeholders who are encouraged to participate in order to collectively co-create and focus on new meaning making journeys. This generates accessible strategic EPL maps to reconstruct the current levels of knowledge transfer to promote inclusivity of strategy making and cements the implementation through formal communities of practice (Fornasiero and Zangiacomi, 2013; Leibold *et al.,* 2015; Ventura, 2018).

If all knowledge contributors take personal responsibility for their meaning making processes, a culture of inclusivity can be established within shared ownership and accountability. Progressive transformational leadership should remain committed to the voices of the knowledge workers to ensure personal development and self-actualisation (Jankowski, 2020).

The Agile knowledge creation model Encourages the relationship between individual innovation (Amabile and Pratt, 2016) and innovative consciousness (Gurteen, 1998; Heinrich and Richter, 2015). It is argued that the latter be constructed through initiatives and efforts to explore knowledge efficiency and leadership behaviour within organizations that promote sustainable knowledge transfer, enablement and architectures (Auernhammer and Hall, 2014; Li and Holsapple, 2018).
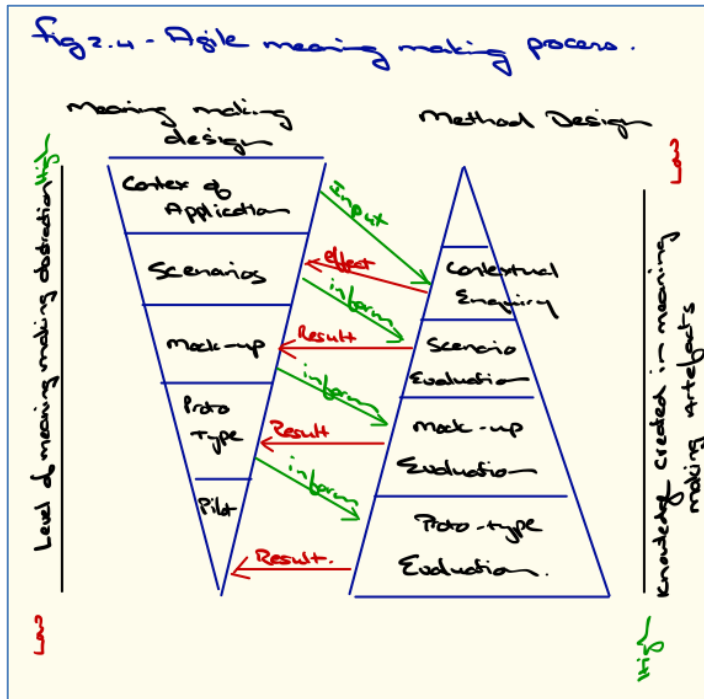
Figure 2.2a-The Agile meaning making process-hand drawn (adapted from Heinrich and Richter, 2015).
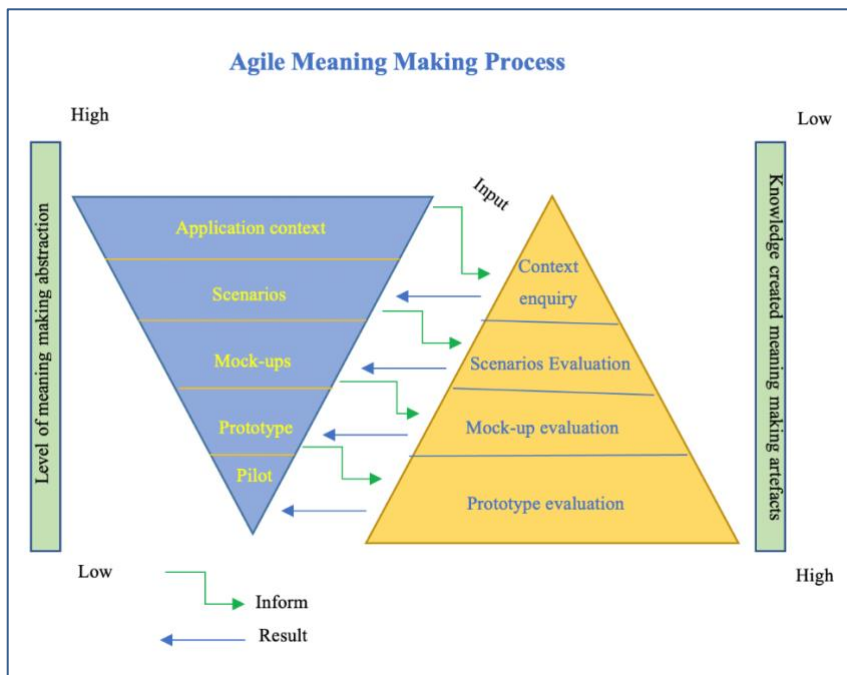

Figure 2.2b-The Agile meaning making process-digital (adapted from Heinrich and Richter, 2015).

Figure 2.2, the Agile meaning making process initiated and evolved in construction that is depicted by inclusion of the hand written accompaniment.

It should be considered that in true Agile fashion, the above-mentioned process model is generic and displays a "fit for purpose" meaning making approach accompanied by a lack of detailed procedures for specific situations. Such a "Plan Do Check Act" (PDCA) model approach (Deming in Buitron-Lopez, Viacava-Campos, Eyzaguirre-Munarriz and Raymundo-Ibañez, 2019; Demming and Edwards, 1982) resembles the Agile way of work, which could be adapted as the analysis of knowledge workers' needs progresses. This context-of-use (inform/result) approach should provide a decreasing level of abstraction, resulting in higher quality and frequency of meaning making artefacts "produced" (Aithal, 2016; Grant, 2016; Nguyen and Chau,2017; Rosson and Carroll, 2002).

These meaning making artefacts are solutions which are extracted from the innovative friction outcomes, rivalled between the revolutionary knowledge worker actions and contemporary organisational opportunity structures (Hacker *et al., 2017;* Takeuchi and Nonaka, 1986, Pasher and Ronen, 2011, Turriago-Hoyos *et al.,* 2016). EPL as a meaning making artefact is a strategic imperative with characteristics such as novel meaning making journeys that increase knowledge value realisation (Siemens, 2014; Nonaka, 2017; Nonaka and Nishihara, 2018). EPL can thus transcend the essence of traditional individual-focused creative knowledge propositions by establishing itself as a narrative for economic value (Drummond, 2003; Grant, 2016; Lyotard, 1999; Mousavizadeh, 2015).

I agree in principle with Nurunnabi (2017), Viitala, 2018 and Nguyen and Chau (2017) that the significance of knowledge work is generated mainly by the representation of thoughts or signifiers. This knowledge value creation occurs primarily in intellectual domains, however: This work is performed by knowledge transformation workers, who gain access to the knowledge economy through specific work, position and formal education (Knight *et al.*, 2018) and vary in type and specialisation throughout the meaning making process (Desouza and Awazu, 2005). Pasher and Ronen (2011), as well as Knight *et al.* (2018), highlight the reiterative occurrence of meaning making in the professional workplace. This praxis of meaning making that transforms knowledge productivity has been practised for as long as civilisation has existed, but has only recently ventured into the modern industry with its essential institutions (Aithal, 2016; Grant, 2016; Knight *et al.,* 2018; Porter, 1989). The collaborative endeavour of co-constructive inclusive meaning making is reliant on SE ethics, values and virtues and the promotive standing towards co-determination (Cooper and Sommer, 2016).

Inclusive transformation and change can be defined as a process that deals with the behavioural factors and adaptabilities that are necessary to produce an aligned culture. This could create unity and transparency in the labour context and can also be associated with the prerequisites of inclusive transformation. This can translate into co-determination, which deals with collective decision making and mutual coexistence, which can in turn promote inclusive economic determination. From an epistemological perspective, inclusive transformation is a radical organisational transformational methodology that embodies the strategic values and objectives as a collective organisational commitment (Tharp, 2012; Toendepi, 2017).

I am also of the view that the Siemens (2014) dialogue regarding theories of meaning making alludes to exploring the needs of the twenty-first-century professional learning requirements. These learning requirements, I argue, should be catalysed – bearing in mind that connectivism (as narrated) should not be confused with constructivism. Mezirow (2003) states that the concepts of "control" and "environment" are instrumental to the meaning making process (Reyt and Wiesenfeld, 2015), where communicative meaning making relates to communication (Ting-Toorney, 2005; Ventura, 2018) and how knowledge workers co-construct (Tourish, 2014; Turriago-Hoyos *et al.,* 2016).

Connectivism provides a platform of meaning making that acknowledges changes in humanistic culture where the meaning creation is no longer an institutional, individualistic practice (Bell, 2011; Siemens, 2014). How people behave and interact is modified as new methods, technologies and frameworks are used (Adriaenssen *et al.,* 2017; Nonaka and Nishihara, 2018). Connectivism provides insight into meaning making that adjudicates skills (Leonard-Barton *et al.,* 2015) and illuminates set tasks required for knowledge workers to flourish in a digital era (Drukker, 1999; Turriago-Hoyos *et al.*). Gravett (2005:41) defines dialogue as a "commutative educational relationship" characterised by dialogue that explores and cross-examines. Secondly, the dialogue analyses and endorses new insights. The dialogic process denotes cooperative inquiry through comments, questions, reflective observations, redirection and responses and forms an incessant developmental sequence. Fourthly, dialogue requires a commitment to nurturing engagement within the educational context. Lastly, a dialogue is characterised by interchange among professionals (knowledge workers) and is underpinned by mutual interest and respect for each other as meaning making custodians.

2.8 An alternative to the unprecedented current reality

For knowledge workers, I conclude that "chaos" is a dominant narrative, a new paradigm, where "allowing" chaos in its natural form presents patterns that could facilitate new meaning making.

Selgert (2020) quotes Snowden's definition of chaos as "a cryptic form of order" (p.4). Briggs and Peat (1989) define it as the disintegration of certainty, illustrated by complex configurations that at first contradict balance. With the exception of constructionists who maintain that knowledge workers aim to facilitate comprehension by carrying out creative pursuits, chaos announces that the meaning making exists (Calder, 1979).

Prigogine and Stengers (2018), like Bolman and Deal (2017), agree with Calder formulating chaos as a discipline and acknowledging the connection amongst all and everything. See Gleick's (2011) description of the butterfly effect in Annexure Epic 2-2.4Gleick's butterfly effect. The Cynefin framework, as explained by Snowden in Selgert (2020) and Stuart (2020), offers a taxonomy of chaos (Annexure Epic 2-2.5-Snowden's Cynefin model). I agree with Brown and Eisenhardt's (1997;1998) notion that this chaotic tension highlights the real challenge, which is a vulnerable and profoundly influential dependence on the initial conditions of meaning making processes and how we represent the interest of our understanding through emergent learning-creation journeys in attaining a future anticipated state of anti-fragility.

I conclude that the acronym VUCA can be reinterpreted to mitigate the current reality:

V-Vision of future state.

U-Unequivocal dedication, tenacity, willingness and ability to attain a future state.

C-Clarity of mandate, roles and responsibilities of the meaning making process in conjunction with artefact utilisation and application.

A-Agility, which includes mindset, virtues, values and belief systems as an approach to attain the envisioned future state.

2.9 Conclusion

Epic 2 set out the of theory of meaning making as epistemological gravitas contributing to the transformation and emergence of EPL as a novel learning design.

For the inclusive meaning making process to progress, specific human attributes are fundamental; these include the capability to induce progressive, creative and innovative co-constructive meaning making journeys. These imperative human attributes are examined, deliberated and portrayed as a classification of roles, attributes and responsibilities. The role of the knowledge worker, leadership and meaning making enablement features are recommended as enhanced levels of commitment.

The establishment of knowledge co-construction, productivity, dissemination and socialisation is scrutinised and proposed as the preferred alternative for navigating the burning platforms of current and unprecedented future. These new proposals are affirmed in a discourse on meaning making gnosis, meaning making as a new learning agitator and the provision of Agile as a meaning making journey that cultivates the connection between social imagination and innovative knowledge creation.

My rationale and thinking are based on meaning making attributes as being organic by nature, where the natural flow of knowledge creation is cultivated in "Ba" underscored and uncensored by transformational leadership. These living, self-organising, self-sustaining knowledge communities foster an equilibrium between SE pre-requisites and where knowledge workers aspire to be their very best, in the absence of "man-made" behaviour and thinking should enhance the congenial expression of emergent meaning making (Turriago-Hoyos *et al*., 2016:227).

Meaning making design

The dogmas of the quiet past sleep quietly beneath the turbulence of the present; and those who bestir that turbulence: the thinkers of today, the pioneers of tomorrow create new methodologies that affect us all.

Erthmer A. (Leedy and Ormond, 2001:155).

3.1 Precis

In the first two Epics the research questions are framed. These were extracted from observations and experiences that were accumulated and articulated within the framework of reality arising from global challenges that is prevalent in the meaning making landscape. This epic is an investment in the design and compilation of studies carried out to gain deeper understanding into research questions. The research seeks a general and integrated analysis of the complexities of new meaning making and its effect on EPL, that is founded on theoretical models within the limits of contemporary epistemology of meaning making praxis.

This epic further presents an synopsis of research problems, essential theories and relevant variations. This encompasses a summary of how I arrived at the conclusions generated from current propositions and perspectives. It also discusses the research approach and the research strategy (mixed methodology, which incorporated a foundation based on triangulation), the research design, a multimodal explorative methodology employing action research (AR), ethnographical insights, grounded theory (Firmansyah, 2018; Hart, 2018) and experiential learning. The research procedures followed used multiple methods to accomplish the goals of this research. The exploratory collection techniques (Jebb, Parrigon, and Woo, 2017) refer to the analysis units and the depiction of the experimental sample from which the research process is based, which underscores the novel attributes of meaning making as an EPL agitator (Xiao and Watson, 2019). See Figure 3.1-Exploratory meaning making.
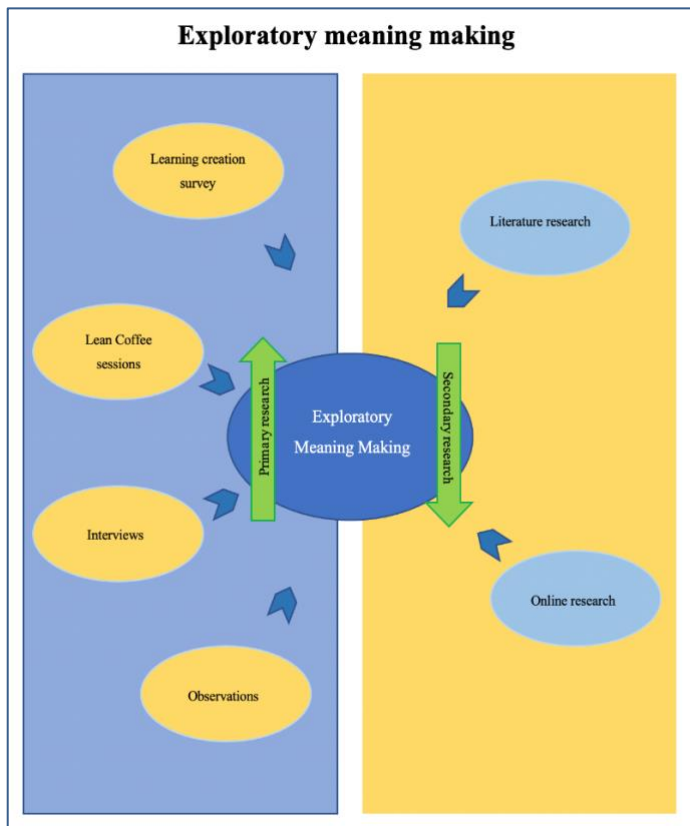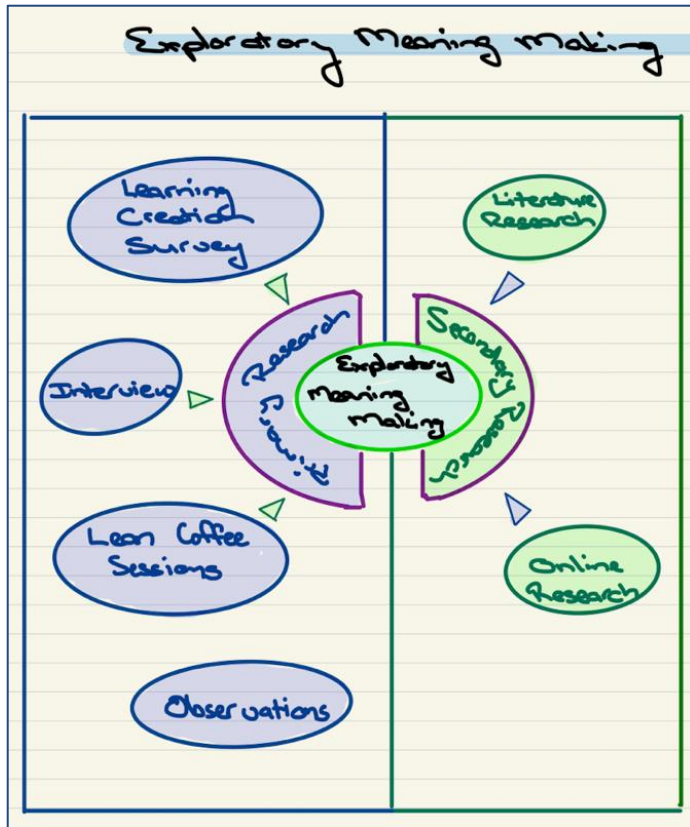
Figure 3.1-Exploratory meaning making (adapted from Question Pro, 2020).

Figure 3.1, Exploratory meaning making (adapted from Question Pro, 2020). initiated and evolved in construction that is depicted by inclusion of the hand written accompaniment. In addition, Epic 3 elaborates on the specifics of sampling procedures and offers an understanding on the processes for managing data which encompasses data generation and recording and analysis. Due consideration is rendered to prejudice, authenticity and reliability.

This study contributes to a more nuanced understanding and assessment of the possibilities that Agile may provide as a feasible approach for establishing a durable platform for collaborative meaning making from both a practical and theoretical perspective The researcher's objective is to ascertain which fundamental pillars may contribute to this journey by employing evidentiary sources such as documentation, archival materials, interviews, direct observations, and participant observation, and the data gathering tools incorporate procedures associated with each pillar (See Annexures Epic4-4.1-Learning creation survey; Epic 4-4.2-Survey Results and Annexure Epic 4 - 4.3-Themes obtained from survey). These are integrated with the literature and supported by a variety of sources of evidence, resulting in the convergence of theoretical principles that drive data analysis and collection into a triangulation landscape as a retrospective See Figure 5.5 Triangulation of collective data.

3.2 Overview of the research perspective

A triangulation methodology for data collection summarises and laminates the multi-modal research design, which also includes quantitative examination, qualitative discussions, thematic analysis, appreciative and participative enquiry and a living theory approach. I facilitated individual and focus group interviews in the form of Lean Coffee sessions with the identified sample group (Haegeman and Konnola, 2010; Vaughan, 2019; Whitehead, 2012).

This multimodal research methodology is designed specifically to explore the inclusive meaning making practice, and it examines the two dimensions in the EPL framework.

Dimension 1 is learning creation, which is further underpinned by the following three pillars:

P1 i-The role leadership portrays in support, advancement and vocation of learning in the professional workplace and its effect on knowledge creation.

P1 ii-The organisation's status as regards the creation, sustainment and promotion of a learning culture.

P1 iii-The significance, contribution and prominence of collaboration in new meaning making present in the professional workplace.

Dimension 2 is the Agile maturity of the organisation, which assesses the state of Agile as employed, positioned and envisioned in the organisation; it is underscored by the following three pillars:

P2 i-The significance of Agile portrayed in the mission, vision and structures present in the organisation.

P2 ii-The measure, application and execution of Agile as way of work methodology practised in the organisation as professional workplace.

P3 iii-The measure, standing, adoption and maturity of Agile as adopted in the organisation.

This enquiry also explores the five objectives to present the realities of the diverse co-constructors' voices as an active living theory process. This will require scrutiny, reflection, laminations and interrogation of data to eventually produce meaningful recommendations. This process demands commitment to attend ethically to the co-constructors' voices and examine the current challenges in the South African Agile professional workplace (Martins, Martins and Viljoen, 2017).

Experiential data was also obtained by observing the perceptions, attitudes and behaviour of the diverse stakeholders who can be instrumental in promoting a co-determined, co-constructive meaning making framework. The data is presented in Epic 4 (Saunders, Lewis and Thornhill, 2007).

Thematic perceptions and lamination formed part of the research methodology. This involved contrasting, layering and superimposing patterns. The professional Agile workplace was assumed to have specific characteristics that would steer the data (Lei and Pitts, 2003; Vaughan, 2019). Annexure Epic 3-3.1 contains a collated meaning making research approach regarded as foundational in completion of this study (Joyner, Rouse and Glatthorn, 2018; Nonaka, 2018; Nonaka, and Nishihara, 2018).

3.3 A multi-modal approach-Triangulation and action research: Employing an Agile Community of Practice (ACOP) to extrapolate meaning making results and findings as experienced in the professional workplace

As new meaning making is particularly dedicated to the development of cognitive functions with its gravitas rooted in constructivism, it is stated by Piaget (1976:11-12) that understanding is impossible if one does not begin by analysing in detail the biological assumptions from which it stems and the epistemological consequences in which it ends. The underscores Nonaka and Nishihara's (2018) postulation that new ideas are based on the same problems and the same types of explanations as can be found in the three following processes:

- The modification of the organism to its environment during its development, along with the experiences and self-regulation that constitute the development of the "epigenetic system." (Epigenesis in its embryologic sense is always determined both internally and externally).
- Adaptation of learning during the creation of its own systems, which relies as much on progressive internal dimensions as on knowledge gained through experience.
- The creation of cognitive or more broadly, epistemological relationships, consisting neither of a clear reproduction of physical events nor of a mere unfolding of structures within the subject, but rather of a collection of structures gradually constructed through continuous contact between the subject and the external world

In this research, meaning making refers to the professional learning of co-constructors, peers and mentees in this research of emergent learning. This epic further made use of action research, with specific focus on participatory co-constructive action research, which was expected to contribute to the practical concerns of knowledge workers in an immediate problematic situation and to further the goals of social science using a set of plan, act, observe and reflect research cycles.

3.4 Participative co-constructive action research (PCAR)

"PCAR is not like Liquorice Allsorts. This is an exemplar of the work of a scholarly community of practice enriching one another and showing interconnectedness. It has as focus action research/participatory action research, which includes reflexive practice, self-enquiry and auto-ethnography".

P.H. du Toit, 2018

The tendency to ask how to do something, rather than explore the nature of that something, is, in a way, a pragmatic response to the reality and busy-ness of life (McAteer, 2013). The corollary, though, is that it can be an inhibitory response in terms of meaning making. Without such a questioning approach, our engagement with concepts and processes can remain relatively superficial. Thus, for this research journey an emancipatory self-empowering action research subset was applied. This was justified as follows:

Differentiation of action research subsets includes, according to the Carr and Kemmis framework in Fringe (2014), technical, practical and emancipatory approaches. The purpose of technical action research is to improve the effectiveness of the professional meaning making practice and to select knowledge workers/co-constructors who are strongly dependent on the researcher as a facilitator (Reason and Bradbury, 2014). Practical action research according to McNiff (2014) focuses on the concept of practice and professional development. Action research could be emancipatory when the purpose is to change the system itself or those conditions that impede the desired improvement in the system or SE (McNiff, 2014; McNiff and Whitehead, 2011). All you need to know about action research. 2nd ed. Los Angeles: SAGE. AR also strives to achieve technical and practical improvement, as the co-constructors/knowledge workers acquire a better

understanding of transforming and changing existing meaning making constructs, boundaries and circumstances (Reason and Bradbury, 2014; McNiff, 2014).

As this research journey is a discovery of meaning making manifestation as EPL in the professional Agile workplace that should embrace transformation, bearing in mind the confluence of Agile practices, which embrace a short cadence of value delivery (Leopold, 2017; Kaltenecker, 2019), and the visionary action research model (Du Toit, 2012; Du Toit in Fringe, 2014) illustrated in Figure 3.2, which is proposed because it is aligned with the Deming PDCA framework as well as with the practitioner's intention to experiment with innovative ideas. See Annexure Epic 3-3.10 Parallels between VAR and Deming's PDCA model for improvement.

The Visionary Action research model

Legend

1 Context
2 Meaning making vision
3 Planning for innovative meaning making
4 Evaluating on meaning making proposal
5 Action initiated to improve
6 Reflecting on meaning making actions taken
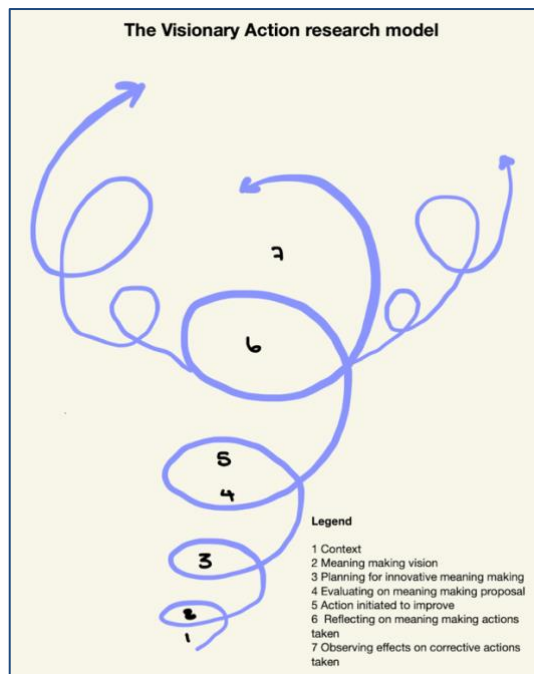7 Observing effects on corrective actions taken

Figure 3.2 - Visionary action research model (adapted from Du Toit in Fringe, 2014).

The rationale for my research approach concludes within the endeavour to rely on ethnographic contributions (see Annexure Epic 3-3.2-the Babylonian epic of creation, Strawberry Fields, the 1967 Beatles hit song (see Annexure Epic 3-3.5 Strawberry Fields) and meaning and self-writing beyond stories, discourse and definitions to the co-construction and formulation of meaning making as EPL establishment. To further inform and inspire contemporary thinking regarding new meaning making, which presents inventive artefacts as EPL learning, the intention is to aid efficient, adaptive, strategically minded SEs to simultaneously create economic knowledge,

wealth, social value and to embrace meaning making creation and socialisation (see Annexure Epic 3-3.3 Participatory co-constructive action research).

The asymmetrical starting locations of data collection (Flint, 2020) requires embarkation on nomadic ethics is emphasising a responsibility and accountability to one's co-implications, to exercise critical vigilance, to be accountable for the process of multidisciplinary research, in embedding and embodying the wholeness of participant contribution (Briadotti, 2011; Flint, 2020).

3.5 Research design

The research design is a template for collection of data, assessment and interpretation. The design and framework of the empiric inquiry are to provide insight to the research questions and establish a foundation for defining the possible relationship between different variables (Creswell and Creswell, 2017; Cooper and Emory 1995:114). It further incorporates the objectives as a roadmap to align the data gathered whilst endeavouring to provide insight into meaning making as an EPL agitator (Zikmund, 1988).

The research design positions and underwrites the appreciative enquiry, as expressed in Epics 1 and 2, which initiates the exploration of the current realities within the Agile professional workplace through a living theory lens. Primary and secondary data will supply supplementary information and new insights into the epistemology of co-construction and inclusive transformation as seen in Epic 2. The research design supports the meaning making enquiry and defines the research objectives that probe the significance of EPL as an artefact within the social patterns in the professional Agile workplace (Leibold *et al.,* 2015; Nonaka, 2018; Stavros and Torres, 2018; Ventura, 2018;).

According to Hussey and Hussey (1997:74), the research methodology refers to the overall strategy of the research process, from theoretical structures to data collection and review. In this study, a triangulated approach is applied, that comprised of participatory semi-structured and non-directive interviews and an experimental survey. Thus, this research design is directed and designed to complement the research goal, reasoning, processes and probable outcomes in determining whether the EPL dimensions (framework) could serve as a catalyst for meaning making in the professional Agile workplace.

Furthermore, benefit can be derived from including a descriptive research approach, as it endorses the living theory accession. Living theory should form and shape the explanatory principles and standards by which improvements in both practice and new meaning making could emerge.

As the main thrust is deductive in nature, based on the logic that the research will be further augmented and substantiated by incorporating qualitative data as a secondary data source substantiated with text (discourse analysis) and numerical data, which should embrace the secondary data analysis and the statistical modelling.

The various theories regarding meaning making and inclusive EPL were referenced with the intention of establishing an in-depth understanding of how the research design affects the internal and external factors which relate to a proactive standing in the progressive professional workplace. The extensive literature review (Epic 2) pursues the objectives with emphasis towards a collective future vision regarding the importance of a meaning making platform achievable through the inclusive journey of all co-constructors. Forming an intrinsic part of the research design are the key meaning making themes as objectives which are intermittently discussed in the ethnographic contribution. Insights and findings will be derived from the observations, questionnaires and focus group sessions, which were summarised in order to make meaningful suggestions and sustainable recommendations in Epics 5 and 6.

This research exploration was explicitly formulated to promote the creation of an integrated approach for the accumulation of organisational and individual insight. This is achieved by positioning the organisations meaning making capacity as a catalyst for EPL progression. It introduces the notion of the postmodern reality of professional learning as a result of observation through discovery, applying deductive and inductive rationalisation, that is positioned through qualitative and quantitative research strategies.

Research questions were extracted from life experience and viewpoints presented within the reality of the professional Agile workplace nested within the unprecedented Covid-19 VUCA economy.

3.6 Explorative research employed in positioning meaning making

I believe that exploratory research is essentially an attempt to discover something novel and thought provoking. The main difference between exploratory and non-exploratory research is that

the latter can only deliver what is already known, whereas meaning making as an EPL construct is built to offer insight and a deeper perspective on the developing arena of meaning making (Jebb, *et al.*, 2017). In this study, the Lean Coffee sessions (see data collection), knowledge workers, SEs and thought workers acted as co-constructors through collaboration in this orchestra of EPL meaning making with a single result in mind: the advancement of meaning making.

Exploratory research has helped me to become more familiar with the contemporary prescribed thinking models and approaches to the process of meaning making; to highlight shortcomings of existing meaning making processes and approaches, to determine shortcomings of prevailing meaning making and how a precise hypothesis (the EPL dimension) could facilitate future study. The exploratory approach has also contributed to evaluating the feasibility of theories (Bless and Higson-Smith 1995:41) and the identification of variables (Marshall and Rossman 1995), e.g. the dimensions of meaning making in this EPL research (Figure 1.1-EPL dimensions and supporting pillars, The Writer, 2017).

- Knowledge creation,
- Agile maturity

The objective that the EPL framework should position itself as a catalyst for meaning making journeys indicated some possible directions to follow. I chose an explorative approach by design, which allowed me the freedom to explore and generate other insights. This in itself augments EPL as the foundation of new meaning making methodology. I agree with the views of Kolb and Kolb (2017:53) that "just as free will exists, so does free thinking", which promotes the notion that the researcher has carte blanche regarding the research methodology. This notion is complimented by (Lawhead, 2014) which contributes in denoting that the research outcome should provide a positive result in terms of ideas.

This research reveals the current meaning making prerequisites of novel learning by eliciting the views of co-constructors (this terminology is specifically chosen to indicate that all co-constructors, by opting to be present, knowingly or unknowingly contribute to the body of meaning making knowledge, thus contributing to a foundation for further EPL discussions, knowledge socialisation and crafting of meaning making journeys).

Following true Agile values, the focus of the research process was to "allow". This is where all co-creators truly enjoy equal standing as co-determinators. The co-constructors provide the lenses for investigative exploratory research through storytelling, parables, semi-structured interviews, retrospective sessions and reviews.

A further reason for choosing an explorative approach is that relatively little is known about EPL as a meaning making approach, especially in the modern professional workplace employing Agile practices. The latter enable a high degree of flexibility and enable agility in a more formal research structure. The study promotes a journey for co-constructors in an identified environmental boundary, which is a professional Agile workplace with a merged approach to classical reasoning, viz. thematic reasoning incorporating both inductive and deductive reasoning, to realise a richer outcome with gravitas (Lee, Lovibond, Hayes and Navarro, 2019; Takefuji, 2019). This dual approach curbs bias and contributes positively to the validity of research outcomes (Stephens, Dunn and Hayes, 2017). See [Annexure Epic 3-3.4 Differentiation between Inductive and Deductive Research methodology, multimedia contribution](#) (Lee *et al.,* 2019).

3.7 The qualitative data collection perspective

The researcher endeavoured to capture qualitative and quantitative data authentically within the experiences of respondents. This knowledge is essentially embedded within the professional Agile workplace, where the inclusive meaning making journeys of contributors are explored through questions, narratives and storytelling (see Annexure Epic 3-3.2 The Babylonian epic of creation). As part of the Lean Coffee sessions, two themes will be discussed to extract wider perspectives and more meaningful insights into the standing of learning creation and Agile maturity levels in the organisations. The interview schedule (Annexure Epic 4-5.4 Interview, Kaela Steyn, 3 August 2020, 09:00 Zoom conference) and focus groups provided richer data to promote reflexivity informing the two-phased longitudinal process (Bergold and Thomas, 2012; Bless and Achola, 1990; Brown and Dowling, 1998).

The longitudinal process is outlined in Epic 1 (see Figure 1.2-EPL Research report layout and Figure 1.3-EPL Research flow), which presents a specific linear process and detail to obtain pertinent information from co-constructors within the living theory and triangulation framework for data collection (Fox and Long, 1990, Ackroyd and Hughes, 1992).

In the final data collection phase in the longitudinal process (2018 – 2020), the focus group interviews (Lean Coffee sessions) include a critical incident analysis in an attempt to explore the inclusive meaning making challenges. A critical incident analysis is a valuable method of promoting living theory data by reflecting on current critical incidents with a view to future solutions (Cooperider and Whitmore, 2005; Oppenheim, 1992).

Each focus group discussion started with the discussion topic (Dimension 1 – Lean Coffee session 1 and Dimension 2 – Agile maturity Lean Coffee session 2). The two Lean Coffee sessions were linked back to the inclusive meaning making journey and the data summarised in an effort to verify the accuracy of interpretation and to obtain confirmation through the triangulation process, which will be presented in Epic 6 (Firmansyah, 2018; Haegeman and Konnola, 2010; Kervin, 1992).

These methods added diverse dimensions to the research context. The triangulated data was analysed, commencing with the survey of learning creation in the Agile workplace and followed by the Lean Coffee sessions as a discussion of outcomes obtained in the quantitative data. The quantitative and qualitative data were distilled into a triangulated data presentation (see Epic 6).

The researcher's interactions with contributors, knowledge workers and peers and engages the new society of agile practitioners to participate in this process of interaction and discovery to offer comprehensive and empirical evidence. The investigation is experimental and established through that the data collecting and analysis procedures to elicit information from the participants' perspective (Lessem and Schieffer, 2016).

3.8 The multimodal data collection and living theory approach

The research method included quantitative and qualitative data collection, which included statistical data. A triangulation method was followed, as the study explored and searched for valid reasons why meaning making is an important phenomenon and endeavoured to ascertain insights into EPL. Multiple data collection methods were used (Ghauri, Gronhaug and Kristianslund, 1995; Saunders *et al.,* 2007).

Data was analysed quantitatively and qualitatively and as well as by statistical and content analysis, noting the frequencies of events, thematic apperceptions and actions (Lancaster, 2005).

The quantitative and qualitative data collection process combined informal conversations (Lean Coffee sessions and semi-structured interviews) for analyses based on the concepts from the literature review. The thematic indicators regarding meaning making attempted to identify new potential themes and trends from the data, and the findings are presented for further conclusions and recommendations in the subsequent epics. To illustrate the multi-methods used for data gathering and analysis, I combined qualitative and quantitative research to encourage co-constructors to express personal views and perspectives and to align deductive and inductive data collection so as to generate meaningful knowledge to direct meaning making perspectives and to illustrate diverse options for EPL establishment (Creswell, 2013, 2014; Cresswell and Cresswell, 2017; Dale, 1993).

The review of the relevant literature in Epic 2 aimed to guide the research process through the application of the theoretical constructs whilst attempting to create an objective understanding of the interdisciplinary EPL framework (Arussy, 2018; Creswell, 2013, 2017; Toendepi, 2017).

Living theory can combine qualitative and quantitative data, which is differentiated in the research procedure for data collection, interpretation and literature development (Vaughan, 2019). To create stability in terms of epistemology and ontology, I endeavoured to ensure theoretical sampling and saturation of both data and theory (Wilber, 2018).

Living theory is particularly suited to this new meaning making journey, which has interactional elements and holds the potential for multiple research contexts beyond the initial research question. This is particularly relevant and an imperative in EPL; these variables could differ immensely, which could impact the interpretation and realisation of SE strategic goal implementation (Vaughan, 2019; Whitehead, 2012; Wilber, 2018). I searched the data for unique opinions and solutions to new meaning making that could be beneficial to SEs based on the real-time value of the experiences of knowledge workers, their stories and experiences.

3.8.1 Ethnography

I have included the 1967 Beatles video, Strawberry Fields Forever (Apple Corporation, 2015), as a descriptive initiation into the meaning making journey for the lyrics, gestures and music in this 1:19 minute video. There are parallels with EPL as a meaning making process which aggregate for

me the substance of the meaning making EPL framework. See Annexure Epic 4-4.5 Strawberry Fields comparison with meaning making.

3.8.2 Thematic reasoning-a merger of induction and deduction

Thematic reasoning is applied in the analysis because in new meaning making of contexts which are complicated or ill-defined, we do not restrict our reasoning to deduction, but complement it with inductive reasoning (Fereday, J. and Muir-Cochrane, 2006; Arthur, 1994).

Applying both inductive and deductive reasoning exploits the best of both approaches. Inductive reasoning leads to a rich psychological world in which hypotheses or mental models compete for survival (Arthur, 1994). These mental models present themselves in an environment formed by other hypotheses or mental models… a world that is both evolutionary and complex, which coincides with the characteristics of EPL's presence in the current VUCA COVID-19 environments (Stephens, Dunn and Hays, 2017).

Takefuji (2019) argues that when required to only assess the deductive validity of an argument, people are influenced by their prior knowledge of the content. Thematic reasoning limits bias. In addition, an attempt is made to view the issues under investigation from both positivist and phenomenological perspectives rather than from a single extreme viewpoint. See Annexure Epic 3-3.4-Distinction between inductive and deductive research.

3.9 Data collection

A three-phase, methodologically triangulated research effort is employed to obtain a comprehensive data set (see Table 5.1 – Data collection, a phased approach).

Phase 1 – As the predominant strategy is deductive, a thematic analysis is done where the categories of exploration and enquiry have been defined before starting fieldwork. It was expected that inductive attributes would emerge throughout the process in combination with established theory that presents emergent learning in itself.

Phase 2 (supporting analysis) – The quantitative dataset is subjected to comparative statistical analysis and evaluates the two EPL dimensions.

Phase 3 – The validity of the results of phase two is verified via qualitative, inductive scrutiny. A structured questionnaire was applied (Annexure 5-5.1 Learning creation in the Agile workplace Questionnaire) using a Likert scale of 1-4 points, where 1 is "strongly disagree" and 4 is "strongly agree". Questions were based upon the correspondent's perception of the two EPL dimensions and their supporting pillars.

The six pillars constitute building blocks for the two dimensions, knowledge creation and Agile maturity as way of work. The dimensions under scrutiny are:

3.9.1 Dimension 1: Knowledge creation

Constitutional pillars

1. Leadership's role, demeanour and its effect it has on learning creation
2. The SE's culture and climate regarding learning creation
3. Collaboration-from competitive to collaborative learning

3.9.2 Dimension 2:-Agile maturity in the professional workplace

Constitutional Pillars

1. Agile mission and structure positioning Agile in the professional workplace
2. Agile way of work
3. Maturity of organisations in their Agile adoption journey

Table 3.1 Data gathering (The Writer, 2019)

Dimensions	*Data gathered*	*Activities*	*Measuring instruments*	*Sample size*	*Objectives*
1	Quantitative/ Qualitative	● Experimental design ● Lean Coffee ● Survey research	Semi-structured open-ended interviews elaborating on Agile maturity in the professional workplace	Lean n = 13 Survey n = 91	To firstly obtain base line information from co-constructors on the mechanics of new learning To explore the mechanics of learning on an individual and SE basis. To assess the knowledge creative climate and culture within the particular SE (individual and leadership dynamics).
2	Quantitative/ Qualitative	● Lean Coffee ● Survey research		Lean n = 24 Survey = 91	To evaluate SE and individual attitudes towards Agile maturity in meaning making and EPL dynamics within and outside SE structures. To gather information nuances and subtleties through informal engagement with co-constructors regarding new meaning making.
3	Ethnographic	● Lean Coffee ● Semi-structured interviews	Non-directive structured and semi-structured interviews.	Individual/group interviews n = 7	To attain a general feel regarding meaning making outcomes, reflections on dimensions 1 and 2 results obtained and the future of meaning making as an EPL construct.

3.10 The population – Knowledge workers/co-constructors

Individual contributors were professionals with a background mainly in information technology, project management and the insurance industry.
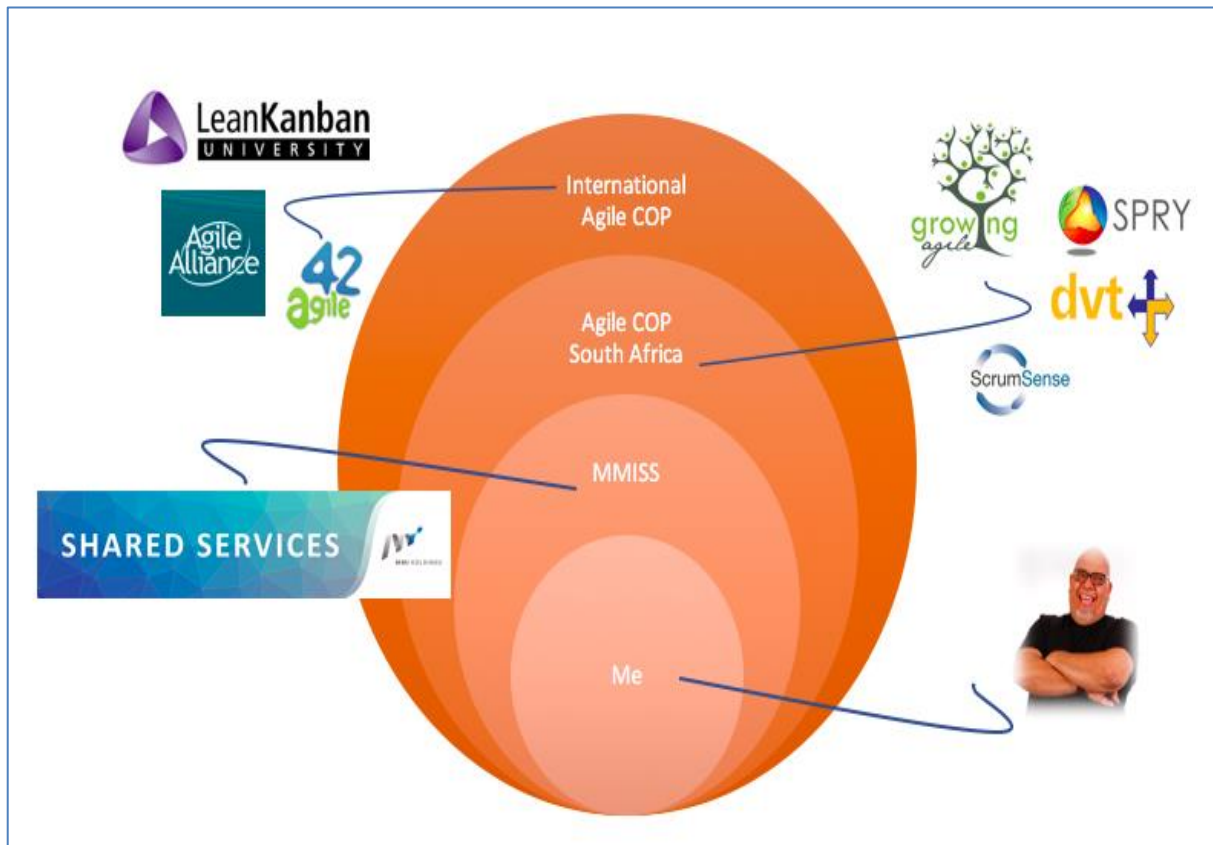
Figure 3.3 shows the scope of co-contribution.

Figure 3.3-Co-contributor scope (The Writer, 2017).

To simplify logistical coordination and facilitate participation and contribution, the main focus was on the wider Momentum Metropolitan Ltd community.

Dedication, but limited participation, was expected from the South African Agile COP, as close co-operation, interaction and socialisation had been established. The South African Agile COP received open invitations for participation, which included, talks, workshops, interviews, meetings, coaching days and guest programs, with special focus on Lean Coffee sessions.

Interaction with the international Agile COP was more structured, with limited interaction serving as a peer sound boarding and providing advice grounded on personal acquaintances active in the Agile community.

3.11 Sampling procedure

The sample comprised co-constructors, while probability sampling was used as stratified random sampling, where the sample is representational in proximity to the population (Etikan and Bala, 2017; Palinkas, Horwitz, Green, Wisdom, Duan and Hoagwood, 2015).

This research design does not employ any conventional sampling technique. In true Agile fashion, with support, encouragement and assistance of the SA Agile COP, Agile peers and coaches, an open invitation was extended to a sample of Agile communities based in South Africa to complete the survey and attend the follow-up Lean Coffee sessions.

3.11.1 Lean Coffee sessions

Also in line with true Agile values, the data collection process was to "allow". All co-creators truly enjoyed equal standing and an equal voice in a co-determined, safe environment. The co-constructors contributed by offering their insights, experiences and wisdom through storytelling, parables, semi-structured interviews and retrospective sessions, especially Lean Coffee sessions. This is an Agile-derived methodology underscoring the EPL framework as a catalyst of meaning making.

This research study employs generic principles, processes and attributes of Lean Coffee sessions – a light-weight, inclusive structure for an informal gathering where the co-constructors decide the agenda at the start of the gathering in a just-in-time way. The primary purpose is to have many shallow discussions about a broad range of topics instead of deeply discussing only one or two topics. The Lean Coffee methodology and framework were developed to discuss Agile/Lean coaching, which is a preferred mechanism for exploring the two meaning making dimensions of EPL as a research investment.

My intention was to initially host two individual Lean Coffee sessions (see Annexure Epic 3-3.11 Lean Coffee Description), each addressing one of the two EPL dimensions, with a third session dedicated to gathering insight into the minimal viable prerequisites (MVPR) required as inclusion in/amendment to an adapted EPL framework.

These lean Coffee sessions helped define a practical approach to the workplace EPL challenges. Agile learning challenges manifested at random and voluntarily as co-constructors reflected on their individual workplace environments in which the problems, opportunities or situations of interest resided. In addition, salient factors emerged as variables relevant to the research.

Additional Lean Coffee sessions could be scheduled based on attendance and demand from participants. Figure 3.4 portrays a typical Lean Coffee framework

Figure 3.4-Typical Lean Coffee framework (adapted from Agile Alliance 2018; Kaltenecker 2019).

3.12 Data handling

I have documented and transcribed the details and incorporated all of the responses to the study on the informal conclusions (qualitative data gathered from comments, insights and contributions offered by co-constructors) for use as data support (Lens 2) on which the research recommendations should be presented. Lens 1 refers to the quantitative data gathered from the

survey (see Annexure Epic 4-4.1-Learning creation (EPL) survey.

The analysis of the qualitative data produced during the study, as defined in Hussey and Hussey, followed a general assessment process (1997) and Leung (2015). The data collected from this process was systematically and rigorously transposed and assessed to encapsulate the essence of data significantly as to understand and navigate the different data streams and to incorporate relevant knowledge stemming from various concepts, elements and proportions. The key themes were extracted from patterns and relationships observed for further exploration, drawing and verifying conclusions and making recommendations.

In addition, the following four exercises were carried out in order to create the following themes:

- Firstly, data was extracted and categorised, which involved classifying all data into meaningful categories from the existing framework.
- Secondly, appropriate categories were established for textual data transference. This action was enabled and augmented by dataset 2 – the variable lens.
- Thirdly, categories were generated to design suitable themes, elucidating their relation, dependencies and interactions, which would reveal testable patterns between the dimensions of learning creations (1) and (2) Agile maturity

3.13 Collaborative framework analysis

The framework method categorises and codes the data into themes where commonalities can be drawn from the raw qualitative field notes (Damsa and Ludvigsen, 2016; Katz and Krueger, 2016; Schwarz *et al.,* 2018). The field notes were gathered primarily during the commentary sections completed in the learning creation survey and interview sessions derived from the Lean Coffee sessions. The qualitative field notes illustrate the flow of the research and feedback to absorb the themed analysis (Palinkas, Horwitz, Green, Wisdom, Duan, Hoagwood, 2015; Van Stapele, 2014). This was used to analyse the data of the key objectives using triangulation concurrently to draw findings across the research objectives using thematic analysis. The data analysis was completed by aligning the data with the identified research objectives (Palinkas *et al.,* 2015; Reason and Bradbury, 2014). Bias was controlled.

A dataset framework was deployed to align the six pillars. Their prominence in support of the respective meaning making dimensions was collated to depict not only individual contribution, but EPL augmentation as a collective. Barriers that could impede the data collection process were continuously identified and dealt with. During the inclusive meaning making journey, I adopted a living theory approach to facilitate an inclusive co-constructed meaning making process through voicing sessions.

The participants were encouraged to provide a deeper and more appreciative view of the complex issues experienced during their inclusive meaning making journeys (Katz and Krueger, 2016). This data support process was guided by explorative themes soliciting diverse opinions from all co-constructors to ascertain their view regarding the inclusivity, openness and mindfulness of new meaning making as a process (Durrheim and Wassenaar, 2002).

Given the volume of information, data gathered and the social nature of the research, a summative content analysis was used to make comparisons where themes could be drawn and interpreted to uncover multiple lenses regarding the relevance of a new meaning making framework. The data analysis built on the methodology of triangulation and is combined with the living theory approach, which is important in this research process as it provides for research findings to be drawn from the raw data gathered and not pre-emptively applied to the research design according to the inductive and deductive nature of this journey. The thematic analysis was used to draw new conclusions and identify new themes that could emerge from data and could lead to new and undiscovered themes within the research objectives (Katz and Krueger, 2016). During the Lean Coffees, the similarities and differences in the responses as well as the research objectives were revisited to ensure alignment with the overall research purpose and to secure validity and reliability.

The qualitative and quantitative data gathered was summarised and coded to condense its volume and captured in its narrative format to illustrate how themes emerged from the data and contextualised in the reviewed literature to essentially produce findings, insights and recommendations. This narrative method gives the researcher the opportunity to summarise the data into conversational topics as they relate to the research objectives (Katz and Krueger, 2016; Reason and Bradbury, 2014). These themes were presented to confirm accuracy and validity and to align responses in the final focus group. A lamination and funnelling process was deployed in this triangulated study (Palinkas *et al.,* 2015; Reason and Bradbury, 2014).

3.14 Ethical considerations

The purpose of ethics in research is to protect the dignity, rights, safety and well-being of co-constructors. The ethical considerations ensured that there was no fabrication of information and ideas; contributions and considerations were acknowledged, noted and reaffirmed. All co-constructors were formally invited to take part in the study at their own discretion and were duly informed that their contributions would be treated as confidential and that their identity would not be divulged (Banks, Leach and Moon, 2005; Palinkas *et al.*, 2015; Reason and Bradbury, 2014). At the Lean Coffee sessions, the rules of engagement were reiterated to ensure ethical forethought.

All co-constructors were reassured regarding the risk of victimisation and that their anonymity would be maintained.

The co-constructors were given a clear explanation of what was required of them as co-constructors, and they confirmed that they understood how this meaning making journey could potentially benefit the Agile knowledge fraternity of South Africa. The co-constructors knew that their participation was voluntary and the important ethical issues were explained.

3.15 Enhancing the reliability of the study

Some definitions and explicit explanations were taken into account for this research when correspondence with the research co-constructors occurred. Sincere efforts were made include and ensure full coverage of the title of the research. The research questionnaire was designed by groups of futuristic thinking co-constructors, within the context of being practical and feasible in the current knowledge economy. This feedback was part of the triangulation approach, which for this particular study is crucially important to the thinking.

Validity was achieved through questions in asking the research co-constructors to elaborate on their choices and opinions regarding Agile meaning making. The research design facilitated continuous communication between the researcher and co-constructors. This community of practice, which was created by the researcher, eliminated any risks that could negatively affect the research outcome that might be attributed to miscommunication. The researcher aimed to minimise

the effect of error during each stage of the research process, thereby increasing the likelihood of achieving higher standards of validity.

I have made every effort not to negatively impact the outcomes and to prevent any use of the leading questions. I am of the conviction that the results has been thoroughly checked and that the validity of the outcomes are validated by the diverse observations gained by the knowledge workers involved.

3.16 Conclusion

This epic outlines the design of the study and the methods adopted in the research to investigate the essence and character of meaning making as EPL building block. Epic 4 further restated the purpose and extent of the research, the two dimensions under scrutiny and their respective supporting pillars.

In addition, Epic 4 provided a detailed explanation of the research approach, the strategies used and the research design. This epic details the design of the study and the techniques used in the analysis to examine the meaning and character of the research. The emphasis was on standardising data, data accuracy and complexity of a particular context.

The analysis method was supplemented by a phased approach to administer several measuring instruments to obtain quantitative results, accompanied by a qualitative process during which focus group sessions were conducted at Lean Coffee meetings. The qualitative dataset was complemented by semi-structured interviews and strategic conversations with knowledge workers.

Material and construct validity has been ensured for all the measuring instruments applied, and a discussion on strengthening the reliability of this research has been included. (see Annexure Epic 3-3.1 to 3.7). Ethical matters were considered throughout this research journey.

The next epic presents the data collected. It is the cornerstone for meaning making as EPL building block to be empirically explored and linked to the epistemic access provided in Epic 2.

Epic 4

Presentation of the results

4.1 Introduction

The research explores the concept of new meaning making as a driver of EPL in the professional Agile workplace. Research efforts, context and justification for this investigation have indeed been established and described in Epic 1. Meaning making from the literature review was presented in Epic 2, which consolidated the ability of SEs to foster and develop innovative meaning making excursions by concentrating on leadership attributes and the application of communities of practise as preferred mode of co-constructive cooperation. The epistemological examination showed that the SE vision, culture, leadership profile, role and the capacity of knowledge workers to participate, cooperate and synergise is an essential precondition for SEs to effectively construct new meaning and learning. This phenomena contributes to new knowledge establishments as intellectual capital asset base of the SE.

Epic 1 introduced the EPL framework as an interdisciplinary model for meaning making and model for learning creation. The two dimensions, their character, attributes, interaction and contribution as vehicles for new meaning making, which should result in EPL, was discussed.

The methodology for conducting and fulfilling the research endeavour was presented in Epic 3. The intent, procedures, rationale and results of the study, phases and methodologies applied in this multimodal co-constructed research design, were presented. The triangulated participative action research includes qualitative and quantitative data. Three data sets are provided.

- The primary data set provides an empirical lens for both dimensions under scrutiny. In addition to the 95 questions scored on a Likert 4 scale, the survey accommodated a free text space where any applicable commentary is welcomed. The "please comment on the above" section was completed after each dimension. Non-invasive, non-directed and vague words were used intentionally to welcome and accommodate personal co-constructive insights.

- The secondary data set presented highlights the qualitative data sourced. The qualitative data sources include –
    - comments as obtained from the survey,
    - a transcript of the interview with Kaela Steyn (Annexure Epic 4-4.4),
    - the two Lean Coffee sessions conducted and
    - a word cloud depiction of dimensions 1 and 2.

- The third dataset empirically dissects the themes as deduced from the qualitative data. The product of dataset three furnishes a further mechanism to curb bias by providing a counter lens as retrospection.

The findings of the data analysis are scrutinised in this epic and are presented for each dimension and its pillars as introduced in Epic 1.

This research contributes to a more nuanced understanding and appraisal of the potential that Agile may offer as a practicable way for constructing a permanent platform for collaborative meaning making. The researcher's objective is to ascertain which fundamental pillars may facilitate in this journey through the use of evidentiary sources such as documentation, archival materials, interviews, direct observations, and participant observation, and the data collection tools incorporate procedures associated with each pillar. Flexibility is included and designed to underpin the research questions and further studies could demonstrate a much wider diversity in the Agile environment to cope with the growing frequency and magnitude of social meaning making and transformation. This is intended to capture the complexity of the integral approach taken in this research by its use of analysing and addressing diverse economic and social realities whilst testing past and current Agile theories.

To investigate whether new meaning making positioned as learning creation in the modern Agile SE could construct EPL, research co-constructors were invited to complete the Learning Creation in the Agile Workplace questionnaire (see Annexure Epic 4-4.1, which was adapted from the Torrance Test of Creativity Thinking (Deshayes, Paban, Ferrer, Alescio-Lautier and Chambon, 2021). The questionnaire was completed by ninety-one (n = 91) co-constructors. The invitation to complete the survey was (in true Agile ethos) an open invitation with no strings attached. All contributions were regarded as being of equal standing. See Annexure Epic 3-3.9-Co-contributor scope.

In addition, two Lean Coffee sessions were conducted under the heading "How do we learn in the professional Agile work environment?" The primary objective of the Lean Coffee sessions was to elicit the views of co-constructors regarding new meaning making. Secondary benefits included the collaborative investment, were new insights emerged, discussed and shared. The two dimensions of knowledge creation and Agile maturity were presented as themes of the respective sessions.

4.2 Results per research dimension

In this epic the findings of the data analysis are explored in alignment with the respective dimensions and their supporting pillars. The demographics of the participating co-constructors are presented first (see Annexure Epic 4-4.2 "About yourself", where two questions are posed for completion) as this will illustrate the range of contributing business sectors. In addressing Pillar 2, Agile maturity, three positioning questions were put to increase an understanding of the co-constructors' journey and exposure to Agile as a way of work.

4.3 Demographics of co-contributors

The demographics of co-contributors could not be predefined, as an open invitation had been extended. This approach, in true Agile representativity, yielded a broad spectrum of industries (see graph 4.1-Co-constructor occupation/industry represented. An interesting observation is the 52,7% co-constructor representation from the financial industry in comparison with the 19,7% from information technology, as Agile is perceived as an IT way of work (Leopold, 2017; Kaltenecker, 2019).
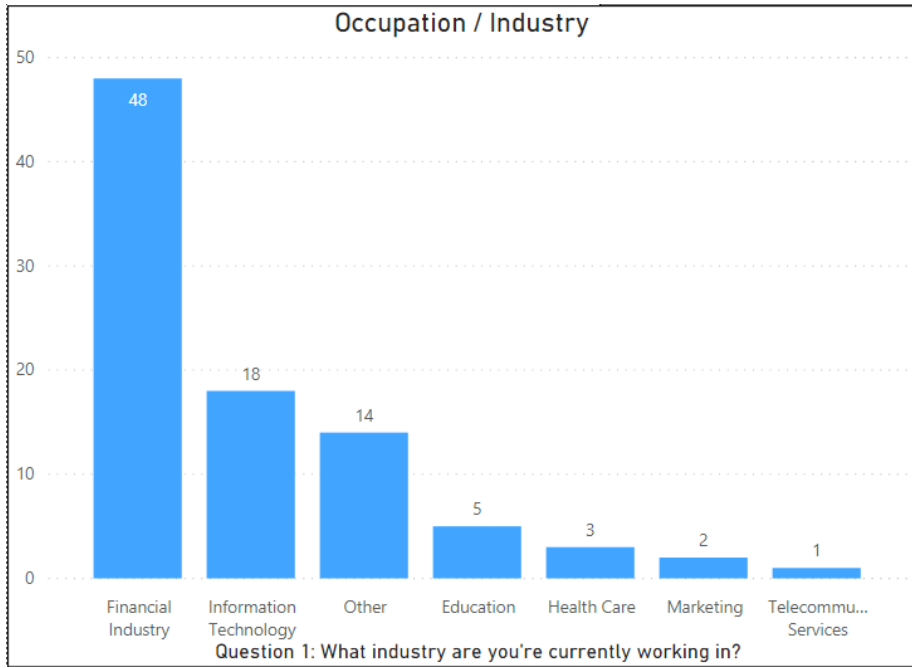
Graph 4.1 – Co-constructor occupation/industry

The hierarchical level (organisational position) of the co-constructor in the respective SEs was recorded in order to attain more insight into the leadership structures represented in the co-constructor profile. This of particular interest because in both dimensions the role of leadership and SE vision is explored. It is noted that SE senior leadership representation was less than 2%, while 19,78% represented middle management and the "specialist" category made the highest contribution with 21,98%. See graph 4.2 – Co-constructor/incumbent organisational position.
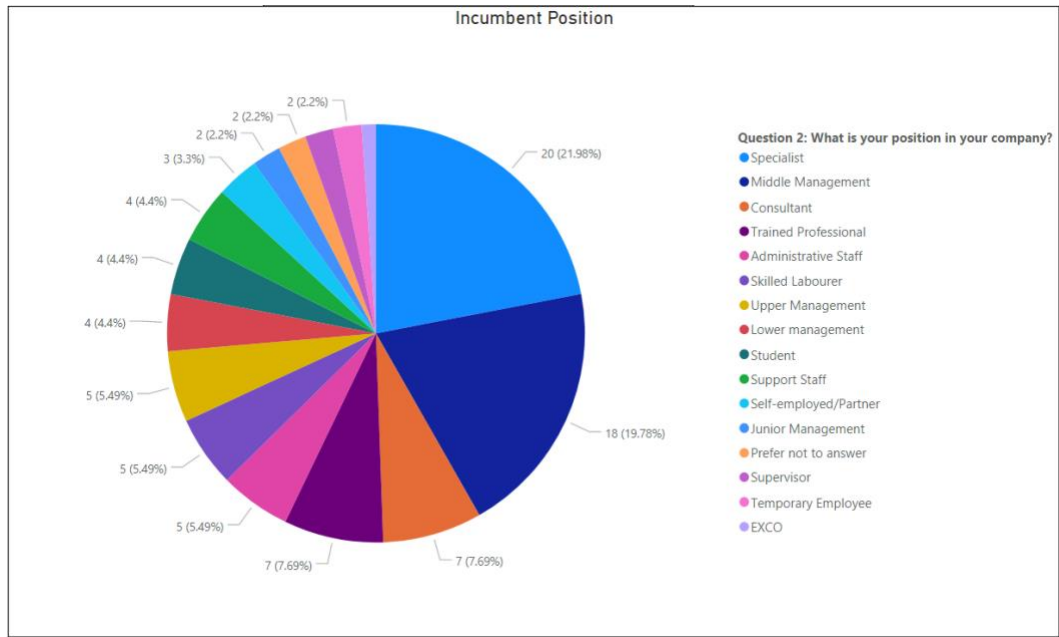
Graph 4.2 – Incumbent position

4.4 Dataset 1-Questionnaire results-dimensions 1 and 2

4.4.1 Dimension 1-Meaning making as a mechanism for knowledge creation

The terms "constructor", "destructor" and "differentiator score" are applied throughout the empirical data analysis. A 4-point Likert scale was applied to ensure that a specific co-contributor opinion was obtained. All responses have a contribution factor of 25%. The designation "destructors" reflects a negative opinion, where constructors indicate a positive response to a question posed. The responses "strongly agree/disagree" and "agree/disagree" carry equal weight (factor 25). The differentiator score is interpreted as the divergence between the destructor and constructor scores. The differentiator value is significant in the rendering and discussion of the dimensional analysis as building block for EPL.

4.4.1.a Dimension 1-Learning creation, Pillar 1-Leadership role
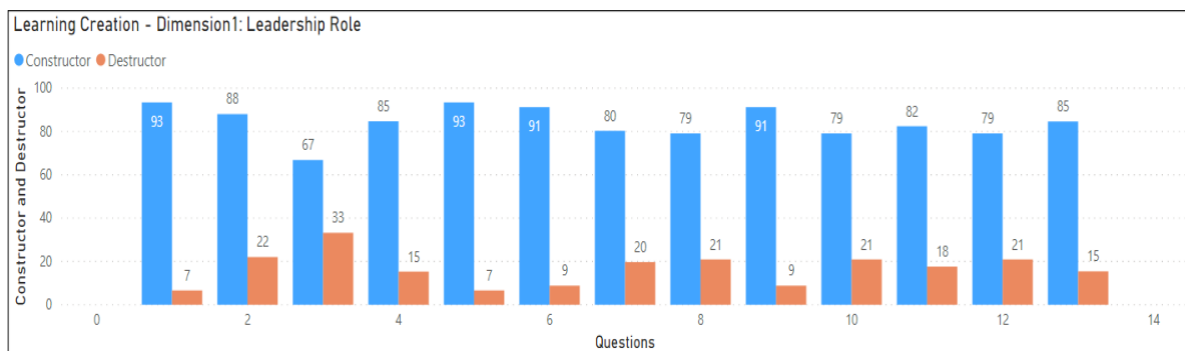
Graph 4.3-Leadership role

Results obtained are represented (y–axis) as a percentage of destructor and constructor respectively per question (x-axis). A constructor percentile score above 90 is observed for questions P1.i.1, 5, 6 and 9, which is positive proof that the following SE leadership values are embraced and actively practised:

- A constructor score of 93,4% indicates that leadership communication about learning is effective, current and welcomed by knowledge workers.

- Self-ownership and responsibility of new learning are encouraged (93,4% constructor value), instilled and practised in SEs.

- A high level of collaboration (91,2% constructor score) is preferred by knowledge workers, where construction of new meaning making is seen as a concerted effort.

- A constructor score of 92,1% indicates that knowledge workers are aligned with their respective SE's visions, which could further express a high level of learning sustainability.

A decisive constructor mean score of 84,1% was obtained for Dimension 1 , Pillar 1, which could indicate a high regard for leadership's proactive role in endorsing, facilitating and promoting new meaning making and learning creation.
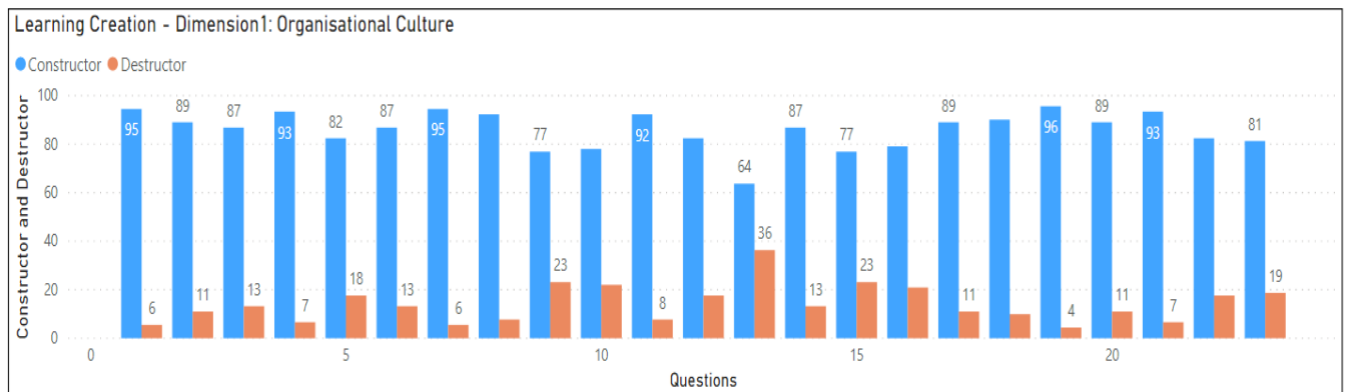
Graph 4.4-Organisational culture

The mean contributor score obtained for organisational culture (85,9%) shows that Pillar 2 is regarded as the most important prerequisite for SE learning creation: Pillar 1 scored 1,8% less and Pillar 3 7,1% in comparison. This ranking is supported by the frequency of contributor scores obtained above 90%. Pillar 1 had four, Pillar 2 had six and Pillar 3 had two. The following conclusions can be drawn from the contributor scores obtained:

- Diversity of opinions (94,5%) is welcomed, as it is believed to enrich group discussions.
- A contributor score of 93,4% indicates that learning facilities and access to new learning tools are provided by SEs.
- P1.ii.7 (94,5% contributor score) confirms that SEs provide access to knowledge repositories to enable new meaning making.
- The belief in and support of the SEs' learning vision (92,3%) indicates awareness of the regard for new learning creation. The probability of knowledge worker loyalty as an intrinsic motivational factor could result in extended employment half-life, which in itself could establish a solid foundation for new learning (positive influencer) or create a culture of group think (negative influencer) (Forsyth, 2020:139), which inhibits new meaning making.
- P1.ii.19 accentuates knowledge worker loyalty, with the highest contributor score of 95,6% because the individual knowledge worker is prepared to affirm additional functions and responsibilities.

The concept of SE and workplace communities supporting new learning is confirmed by a contributor score of 93,4%.

SE enablement of new meaning making is evident not only in the physical mechanisms provided and the access to knowledge and learning, but also the moral support, advocacy and promotion of new learning as an SE culture is encouraged.

4.4.1.c Dimension 1-Learning creation, Pillar 3-Collaboration
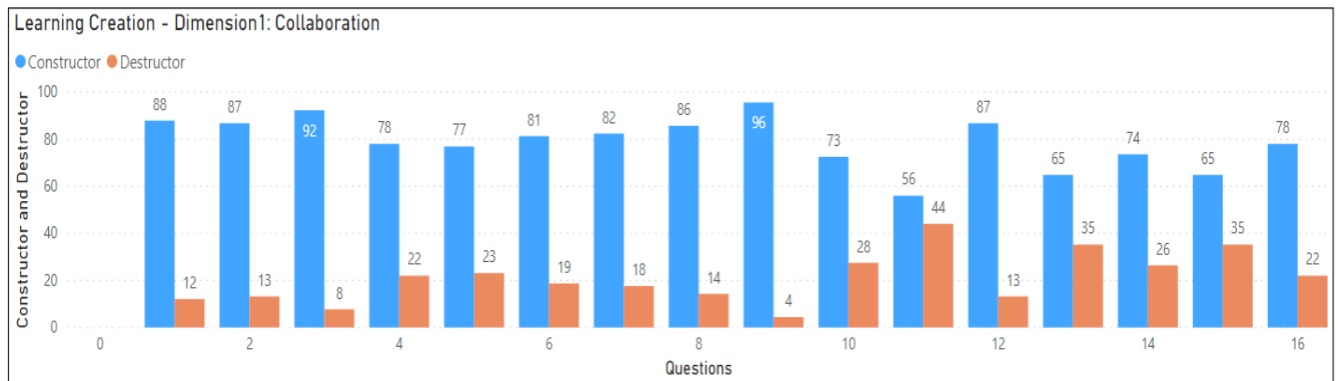
Graph 4.5-Collaboration

Pillar 3 facilitates insight into the contribution and prevalence of collaboration in new meaning making as an SE learning building block. The following associations could be deduced from the result set obtained:

- Although SEs provide infrastructure and enable mechanisms for communication (95,6% contributor score), the application of such enablement is limited (P1.iii.11 contributor score of 56,0%).

- Personal dedication to the promotion of SE learning is well established, as a contributor score of 92,4 % was obtained.

- It appears that although communication mechanisms, channels and platforms are available and encouraged, the interteam communication is lacking (P1.iii.13, 64,8% contributor score). This is especially applicable to the interteam sharing of learning objectives (P1.iii.15 also achieving a 64,8% contributor score); in addition, this notion is supported by a contributor score of 56,0% for addressing the establishment of communities of practice (P1.iii.11).

4.4.2 Concluding insights

All three pillars could be regarded as relevant in the establishment of new meaning making as a building block for knowledge creation (and therefore learning establishment) in the SE. The following concluding insights were obtained from the three pillars of Dimension 1:

- Pillar 1 (the leadership role) and Pillar 2 display a high relationship, as the averages of contributor scores obtained are 84,0 and 85,9 % respectively.
- These indicators are well aligned, as the standard deviations are 7,42 for Pillar 1 and 7,71 for Pillar 2.
- In contrast, Pillar 3 (communication) lags with a standard deviation of 10,62 and an average contributor score of 80,4%.

4.4.3 Dimension 2-Agile maturity

4.4.3.a. About Your Agile (insight to your personal Agile experience)

The Agile demographics were gathered to establish a baseline for the co-constructor experience profile with regard to Agile and Agile methodologies. The three statements posed were:

We as an organisation use Agile as a way of work.

We apply Agile frameworks such as SCRUM, Kanban, SAFe.

My organisation has embarked upon an Agile implementation journey.
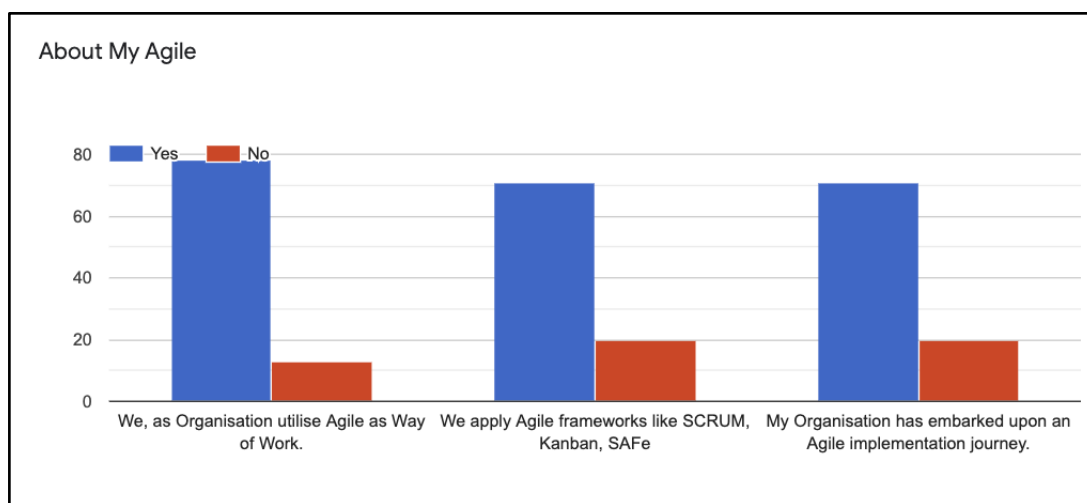
Graph 4.6-About My Agile

The data suggests that 85,7% of co-constructors actively employ Agile as way of work in their SEs on a daily basis. Of these SEs, only 78,02% make use of established Agile frameworks such as SCRUM, Kanban and SAFe. A co-constructor population of 21,9% is employed in SEs that have not yet embarked on an Agile journey as way of work.

4.4.3.b Dimension 2-Agile maturity, Pillar 1-SE mission and structure
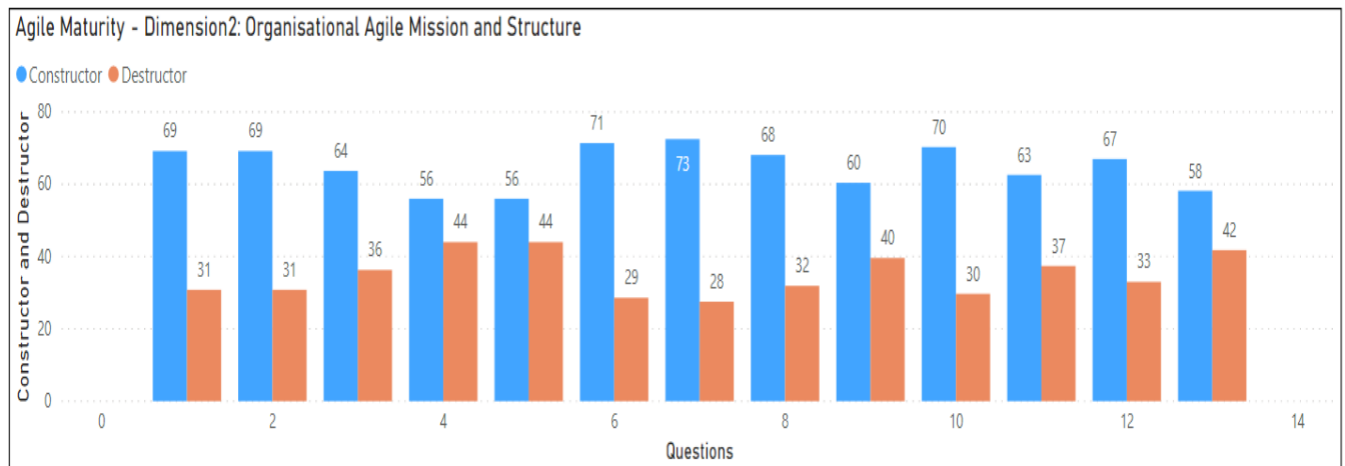
Graph 4.7-Agile as a way of work

- The data suggests that the vision to instil Agile as way of work (P2.i.1; P2.i.2; P2.i.3) has not yet been embraced (average contributor score of 67,4%), nor does leadership have a clear understanding (56,0%) of what the SE's approach towards Agile as strategic driver should be. This statement is underscored by P2.i.12 (67,0%) and P2.i.13 (58,2%), reflecting the perceived practical application of Agile by senior SE structures.

- The data further depicts the prominence of middle management as a primary driver of the institution of Agile as the SE way of work. This is evident in the belief that Agile is a key strategic differentiator (70.3%) and ability. P2.i.13 supports this notion, as a contributor score of only 58.2% was obtained for the belief that leadership applies Agile practices as a norm.
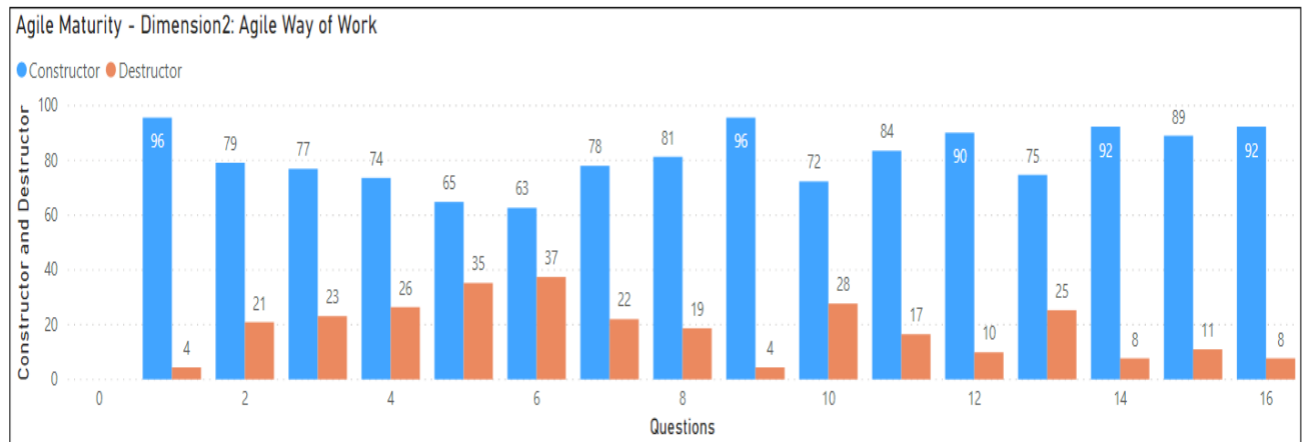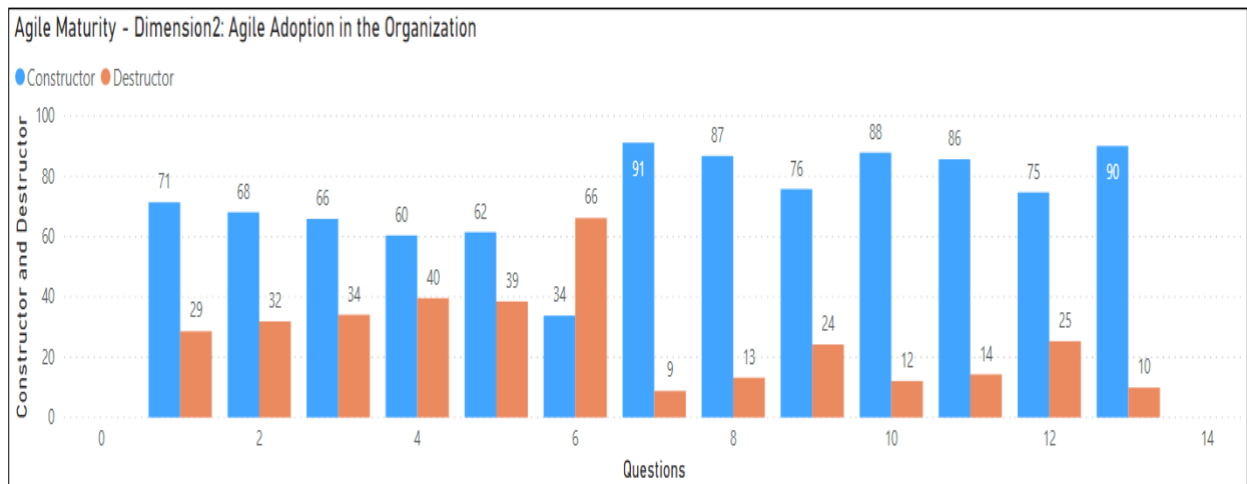
Graph 4.8-Agile as a way of work

The 16 questions of Pillar 2 examine the current application and use of Agile as a way of work in the respective SEs.

- A 95,6% contributor score was obtained in P2.ii.1, which scrutinised the benefit of Agile as way of work in Covid lockdown times.
- P2.ii.15 echoes the above, as a 89,0% constructor score was obtained when asked if Agile made working from home easier.
- In conjunction with a comfortability score (P2.ii.9: 96%) for utilising Agile as way of work, this could indicate that Agile might facilitate antifragility characteristics (Taleb, 2013).
- P2.ii.12 obtained a 90,1% constructor score, which indicates that Agile is of value in the day-to-day tasks. The latter, in conjunction with P2.ii.11 (which scrutinises the concept of continuous improvement – 83,5%) could indicate a holistic Agile approach being adopted.
- P2.ii.13 (74,7%) could indicate that the presence of cross-functional, self-sustained teams is a team effort in co-decision making. P2.ii.14 underscores the notion of cross-functional teams in unity by emphasising a clear focus and goals to be attained (92,3%).
- P2.ii.16 supports the cross-functional team autonomy concept by attaining a constructor score of 92,3% for the role of Agile in facilitating collaboration.

Graph 4.9-Agile adoption

Dimension 2, Pillar 3 displays the views and opinions of co constructors regarding Agile adoption in their respective SEs. Agile adoption, in contrast to Agile as way of work (Dimension 1, Pillar 2), focuses more on the Agile journey SEs have embarked upon, whereas Agile as way of work relates to the use of Agile in day-to-day operations. It should be noted that 19,8% of constructors indicated that their SE has not embarked upon an Agile implementation journey. Also note that question P2.iii.6 ("I will gladly revert back to Waterfall as a way of work") is positioned as a negative statement towards Agile promotion, hence the inverse of results obtained is applied.

The following could be deduced from the data:

- There is a strong belief (91,2%) that Agile facilitates a positive organisational environment (P2.iii.7) and that Agile enables the organisation to endure Covid-19 challenges (P2.iii.13),, as both statements obtained a constructor score of 91,2%.

- Although a 71,4% contributor score was recorded in response to the question whether we as an organisation were committed to Agile, this sentiment could be negated by results obtained in P2.iii.2, 68,1% (leadership support for Agile) and P2.iii.5, which indicates that the SE teams are not completely self-sufficient (61,5%).

- A positive sentiment (87,9%) regarding Agile meeting expectations was expressed (P2.iii.8); in conjunction with a positive constructor score of 85,6% obtained when asked whether SE results improved with Agile (P2.iii.11), this could underscore the potential for

Agile as an antifragility enabler, as these assessments were completed during Covid-19 lockdown.

- A 74,7% constructor score was obtained when asked whether morale had improved since the adoption of Agile (P2.iii.12).

4.4.4 Concluding insights

The Agile maturity of SEs was assessed on the basis of the co-constructor response for the following three pillars:

1. the SE's standing towards Agile as expressed in the mission and structure of the organisation;
2. how Agile is embraced as part of daily operations in the SE's way of work;
3. how Agile has been adopted in the SE, which should reflect Agile maturity.

The following concluding insights were obtained for the three pillars representing Dimension 2:

- Pillar 1, the SE Agile mission and structure being conducive to Agile, displays the lowest contributor average (64,9%); however, with an SD of 5,81, it can be deduced that the measure of dispersion regarding replies received is constant.
- Pillar 2 has the highest average constructor score (81,4%). This could be an indication that Agile is well positioned in the SE daily operations. The SD value 10,4 could indicate variability of answers, which might be attributed to the diverse co-constructor population and industries represented (see Graph 4.1 – Co-constructor occupation/industry and Graph 4.2 – Incumbent position).
- Pillar 3 elicited the most diverse opinions, with an SD value of 11,3. A possible explanation could be the 19,8% of co-constructors whose SEs had not embarked upon an Agile adoption journey yet. The variance could also be attributed to the spread of SEs included in the co-contributor population. A strong constructor average of 75,9% was obtained, which could indicate positivity towards the Agile ethos notwithstanding the position of Agile as a way of work or the duration of the exposure to Agile as a methodology.

4.5 Dataset 2-Qualitative data presentation-Dimensions 1 and 2

The qualitative data sources include:

- Themes obtained from the survey (Annexure Epic 4-4.3).
- Personal interview transcript Interview with Kaela Steyn (Annexure Epic 4-4.4).
- The two Lean Coffee sessions (Annexure Epic 4-4.1 and 4.2).
- Word cloud depiction of Dimensions 1 and 2 (see Figure 4.1 and 4.2).

4.5.1 Themes extracted from the questionnaire

The themes that emerged from the questionnaire responses are presented in identical format as Dataset 1 – the quantitative data presentation. Consequently, Dimensions 1 and 2 are presented with their respective pillars depicting, themes deduced from co-contributor insights and comments.

4.5.1.a Dimension 1-Meaning making as mechanism for knowledge creation

4.5.1.a.i Dimension 1.1-Learning creation, Pillar 1-Leadership role

The following three themes emerged regarding Pillar 1:

1. Theme 1.i.a-Communication/strategy/leadership: Not all leaders in the organisation are forthcoming with information or encourage staff to challenge meaning making (in the organisation)
2. Theme 1.i.b-Value contribution: There are many people who are resistant to learning.
3. Theme 1.i.c-Organisational goals: Supportive leadership is a prerequisite.

4.5.1.a.ii Dimension 1.2-Learning creation, Pillar 2-SE's learning creation culture

The following three themes emerged regarding Pillar 2:

1. Theme 1.ii.a-Customer experience: CX (Customer Experience) may diminish and could become non-existent where there is no established learning.
2. Theme 1.ii.b-Value contribution: "Our team's value contributing capability is dependent on purpose and improvement resulting in tangible benefits."

3. Theme 1.ii.c-Organisational Contribution: "I work in a supportive team (agency) with a supportive manager (the steward who embodies transformational leadership) where I am encouraged to contribute to the organisation."

4.5.1.a.iii Dimension 1-Learning creation, Pillar 3-Collaboration in learning creation

The following three themes emerged regarding Pillar 2:
1. Theme 1.iii.a-Team Objectives: Objectives of the team can seemingly not be prioritised and sequenced for action, as ineffective communication eradicates the personal responsibility of the individual knowledge worker.
2. Theme 1.iii.b-Improving meaning making: New meaning making is a collective responsibility that is affected by agency deliverables where there is a dependency on the other teams.
3. Theme 1.iii.c-Communication strategy: Leadership can be disconnected at times and my experience is that they don't effectively communicate.

4.5.2 Dimension 2-Agile maturity

4.5.2.a Dimension 2-Agile maturity-Pillar 1-SE mission and structure

The following two themes emerged regarding Pillar 1:
1. Theme 2.i.a- Establishing Agile work groups:
- "I'm not 100% convinced the overall leadership truly understands Agile and all that it entails."
- "We also have leadership within our Agile arm of our business and overall leadership for the company."
2. Theme 2.i.b- Organisational Agile vision: "It is important for leaders to become far more proactive in these challenging times."

4.5.2.b Dimension 2-Agile maturity-Pillar 2-Agile as a way of work

The following two themes emerged regarding Pillar 2:

1. Theme 2.ii.a- Covid-19 (Working amidst): It is important for leaders to become far more proactive in these challenging times.
2. Theme 2.ii.b- Way of Work construction: The focus should be on what works for both the knowledge worker, organisation and wider ecosystems.

4.5.2.c Dimension 2-Agile Maturity-Pillar 3-Agile adoption

The following three themes emerged regarding Pillar 3:
1. Theme 2.iii.a- Way-of-work construction: "In my experience with those areas, adopting Agile has not improved.
2. Theme 2.iii.b- Disparity in Agile progression: "The organisation has adopted Agile, but the mindset of most leaders is still Waterfall."
3. Theme 2.iii.c- Disparity in Agile progression: "We are trying to roll out Agile to the rest of the company; however, it has been a struggle to get them to adopt."

4.6 Interview with Kaela Steyn

(Annexure Epic 4-4.4)

A semi-structured interview with Kaela Steyn (third-year BCom student at University of Pretoria) was conducted on 3 August 2020 to obtain a complementary insight of a non-Agile co-contributor. Specific attention to working from home and Covid-19 was emphasised.
The themes that emerged from the semi-structured interview were:
- Leadership – a retrospective perception of the role of leadership
- Communication – A comparative analysis was made between the University of Pretoria and the University of the Free State.

4.7 Lean Coffee sessions

(Annexure Epic 4-4.5, a and b)

Two Lean Coffee sessions where held to present Dimension 1 and 2 as discussion topics (see Figure 3.4-Typical Lean Coffee framework for details of the process of a Lean Coffee).

4.7.1 Lean Coffee session 1

(Annexure Epic 4-4.5.a)

The three main themes (distinguished by colour) which emerged from Lean Coffee session 1: Learning creation in the Agile workplace are (see Annexure 4.5.a-Lean Coffee session 1-Learning creation, 13 August 2020):

1. Value creation-defining value and the linkage between personal and professional value realisation
2. Power-attributes, descriptions and classifications of different types of power present in SEs
3. Learning enablement-co-determination, custodianship and enablement requirements for facilitating new meaning making.

4.7.2 Lean Coffee session 2

(Annexure Epic 4-4.5.b)

The three main themes that emerged from Lean Coffee session 2: Agile maturity in the Professional Agile workplace are (see Annexure Epic 4 – 4.4 – Lean Coffee Session 2 –Agile Maturity):

1. Collaboration-the challenge of inclusivity
2. Working from home-work-life balance, self-ownership and responsibility
3. Communication-reliance on technology, frequency and purpose of directed communication, new communication channels.

4.8 Word cloud depiction of Dimensions 1 and 2

(see Figures 4.1 and 4.2)

Word cloud is a common text visualisation technique (Yang, L., Li, J., Lu, W., Chen, Y., Zhang, K., Li, Y.; 2020) for depicting keywords of a document, metadata on websites, or to visualise free form text (Bhoi and Patel; 2020). Word tags are usually single words, and the importance of each tag is indicated by font size or colour (Yang *et al.*, 2020).

All notes, comments and inserts of both the Lean Coffee sessions and comments made in the learning creation survey were used to create a word cloud.

4.8.1 Word cloud 1-Dimension 1-Learning creation in the professional Agile workplace

The main themes that emerged from Word Cloud 1-Dimension 1-Learning creation in the professional Agile workplace are (see Figure 4.1-Word Cloud 1-Dimension 1-Learning Creation in the Professional Agile workplace):

1. Team-collaboration, co-ordination and management
2. Learning development-availability, role of leadership and ownership
3. Communication-effectiveness, frequency and purpose

Figure 4.1-Word Cloud 1-Dimension 1-Learning Creation in the Professional Agile workplace (The Writer, 2020).

4.8.2 Word Cloud 2-Dimension 2-Agile maturity

The main themes which emerged from Word Cloud 2 – Agile maturity (see Figure 4.2-Word Cloud 2-Dimension 2-Agile maturity):

1. Agile-sustainability, expansion to wider value chain, misconceptions
2. Leadership-availability, endorsement, trust and advocacy of Agile
3. Work teams-disparate teams, alignment, simultaneous referencing
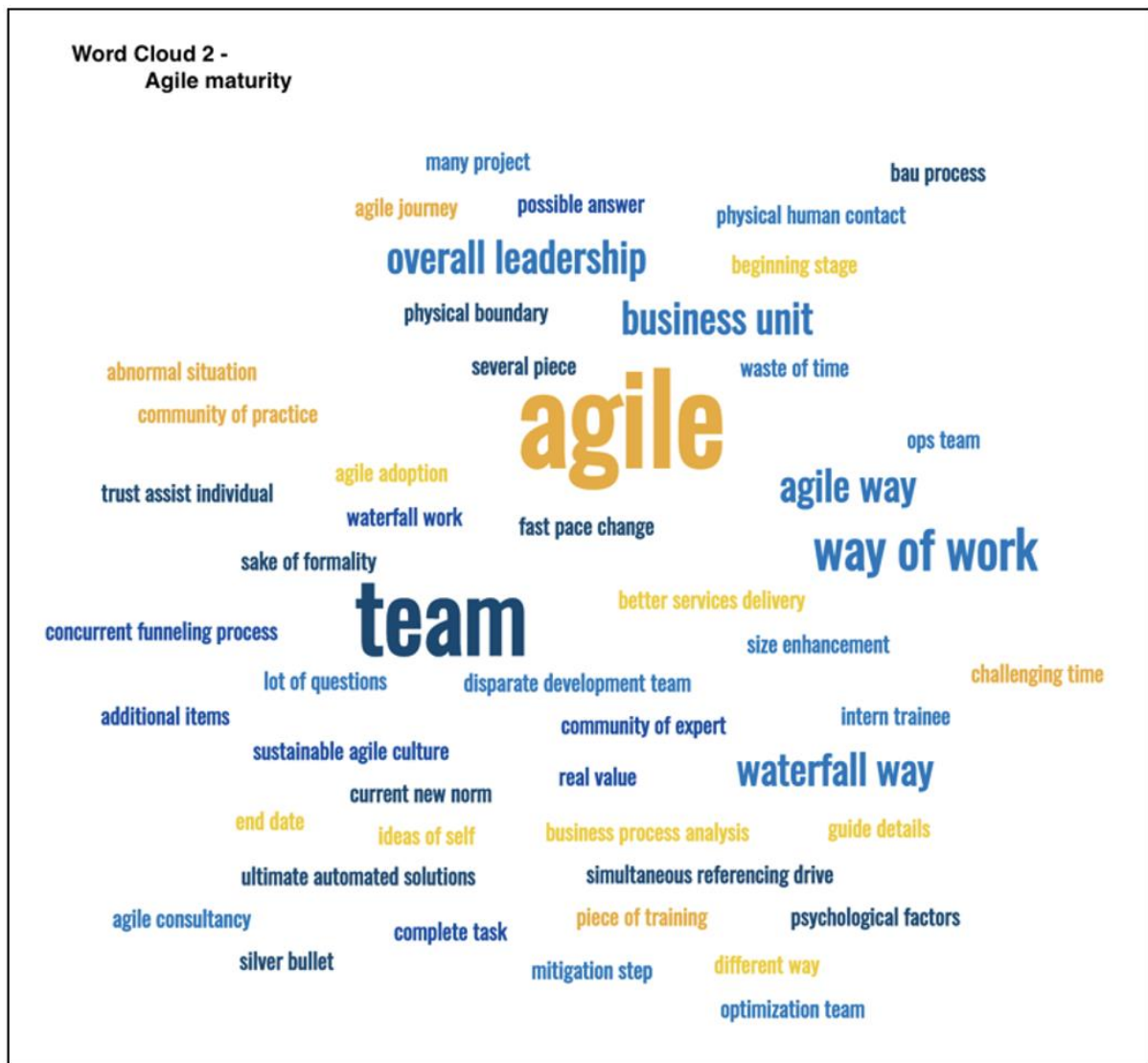
Figure 4.2-Word Cloud 2-Dimension 2-Agile maturity (The Writer, 2020).

4.9 Conclusion

Initially, this epic presented the findings obtained through the assessment of the gathered data. It is concluded that the interventions conducted did have a substantial statistical influence on both research dimensions. The primary data source provided insights which where underscored by a supporting qualitative data set that comprised four data sources. The application of a constructor score as leading standard ensured that the analysis, deductions and conclusions were performed in identical fashion.

Secondly, the development of new meaning making as a catalyst of learning creation proved a relational coexistence between the three Dimension 1 pillars. An average constructor difference of 1,9% accompanied with a standard deviation of 0,32 depicts a stronger relationship between the leadership's role in learning creation and the SE's learning creation culture. The standard deviations (7,42 for Pillar 1 and 7,71 for Pillar 2) show that these indicators are well aligned. However, Pillar 3-Collaboration lags with an average contributor score of 80,4% and a standard deviation of 10,6, indicating that although a generally positive sentiment prevails, diverse opinions are a reality. This could be attributed to the diverse SEs' industry portfolios (15) represented in the co-constructor population.

Thirdly, the data suggests that 85,7% of co-constructors actively employ Agile as a way of work in their SEs on a daily basis. Of these, 78,02% SEs use established Agile frameworks where a co-constructor population of 21.9% is employed in SEs that have not as yet embarked on an Agile way-of-work journey. This is of particular relevance, as it could influence the comparative analysis the pillars of Dimension 2 – Agile maturity – and especially those of Pillar 3 – Agile adoption. This is evident in the diverse opinions received from co-constructors, with the highest standard deviation value (11,25). The application of Agile as way of work is more relevant systematically than the relationship between way of work and the SE's mission and structure endorsing Agile. For Dimension 2, Pillar 1 the SE's mission and structure has a constant negative sentiment (standard deviation 5,81) and Pillars 2 and 3 have an average constructor score of 64,9%.

Fourthly, the themes derived from the four qualitative data sets reveal that leadership, communication, ownership and purpose as value creators are the driving forces for learning

creation. Dimension 2 – Agile maturity prompted the following themes, which emerged from the qualitative data and coincide with the statistical data elicited by the questionnaire: the dynamics of leadership, their role and impetus towards Agile establishment in the respective SEs, together with team dynamics and personal ownership. This implies that knowledge workers are the custodians and champions of Agile as a SE business praxis.

Epic 5

Discussion of findings-Triangulation and Lean Coffee

5.1 Introduction

This epic explores and describes the triangulation process, the characteristic requisite for new meaning making, as a foundation for EPL. The requirements for new meaning making in the professional Agile workplace are discussed.

The researcher draws on the data in order to provide a comprehensive, holistic description and support of EPL as phenomena as experienced and observed in various organisational institutions. The researcher further distinguished this technique by including a multi-modal research approach based on casework, method, history and record, all of which were incorporated into the unique distinctive rationale for proposing and creating a new framework (Lessem and Schieffer, 2016). See Figure 5.5 Triangulation of collective data.

The data is represented in the perspective of the knowledge economy, which in its infinite capacity is described as the utilisation and dissemination of new flanged knowledge potential and its components (Drucker in Nurunnabi, 2017). The EPL framework embraces a comprehensive, integrative construct that performs within the broader context of knowledge progression to allow for the development of new strategies and organisational meaning making models. These fresh perspectives are being promoted to create substantial value in the post-Covid-19 global landscape. In order to illustrate the currency and the interdisciplinary pertinence of new meaning making, the outcomes of both research objectives will be critically articulated.

The research sub-questions are restated:

1. How should knowledge creation adapt to the new world of work?

2. Why should Agile maturity become part of the future of curriculum design and development grand narrative?

All data was laminated (Hashimoto, Fujita, Tsukada, Kawajiri, Suzuki and Makihara, 2019) to explore the themes in more depth and leads to meaningful recommendations (see Epic 6). The data suggests that although co-constructors actively participate, there is a diversified understanding of Agile as a concept, an ethos and a practical application. This could be due to three constraints:

1. the diverse SE industry representation, totalling fifteen sectors (see Graph 5.1 – Co-constructor Occupation/Industry);
2. 21,9% of SEs represented had not embarked upon a formal Agile adoption journey yet; and
3. 14,3% of co-constructors did not apply Agile as a way of work (please see Graph 5.5– About my Agile).

This directly indicates the urgent need to implement an inclusive co-constructed framework for new meaning making in the professional Agile workplace, especially in view of the ramifications of the Covid-19 pandemic and its influence on the economic and social landscape in South Africa.

As the findings are discussed and insights gained with regard to the research objectives, comparable related themes could emerge as independent discussions per dimension.

5.2 Analysis of the findings regarding the research objectives

The comparison between the two study goals will be rigorously articulated, after which an analysis of the meaning making will be proposed to demonstrate currency and scientific applicability. Qualitative information was acquired through semi-structured and non-directive interview sessions (Annexure Epic 5-5.4, Kayla Steyn interview) in conjunction with open-forum co-constructive sessions with knowledge workers (Lean Coffee sessions, Annexure Epic 5-5.5.a and 5.5.b). A critical integrative discussion will be presented bringing together Dimension 1 and Dimension 2, demonstrating the various constructs explored and reflecting on the complexity of the data produced. In determining the relationship between the three

pillars underscoring Dimension 1 and the connectedness with the three augmenting pillars in support of Dimension 2, a multi-tiered narrative is offered.

5.3 Research question one-A knowledge creation perspective

5.3.1 How should knowledge creation methodologies adapt to the new world of work?

The research has identified a strong association between the rudimentary formations of leadership, culture and collaboration as a fulcrum for new meaning making and resulting (as a knowledge production artefact) in SE learning creation journeys, as can be seen in Graphs 5.3, 5.4 and 5.5. The data revealed that the relationship between the variables produced statistical evidence that leadership vision, SE learning culture and communication could be the primary drivers of new meaning making (Damsa and Ludvigsen, 2016; Katz and Krueger, 2016; Schwarz *et al.,* 2018).

The highest interrelationship has been identified between the position of leadership responsibility and SE cultural identity, which displays a significant relationship as the averages of contributor scores obtained are 84,0 and 85,9% respectively. The relation dynamics are well aligned: the standard deviations reflected are 7,42 for leadership and 7,71 for SE culture. Communication, in contrast, lags with a standard deviation of 10.62 and an average contributor score of 80,4%.

Leadership effectiveness was shown to be the secondary initiator of learning creation, with SE learning culture (primary) and communication (secondary) as the drivers. There is an interrelationship between these constructs, as learning creation (Damşa and Ludvigsen, 2016) and knowledge productivity (Nonaka, 2018) are the logical consequence of new meaning making effectiveness (Chroinín, Coulter and Parker, 2019; Leibold *et al*., 2015; Nonaka and Nishihara, 2018).

Pillar 1 of the research design endeavoured to evaluate the impact of leadership's role, function and impetus on the facilitation of new meaning making. The research shows that there is a high measure of alignment between the individual knowledge workers' goals and those of the organisation (see P1.i.5). The findings highlights the possibility of leadership in constructing a

prominent SE learning vision, communicating this vision and encouraging knowledge workers to take responsibility for their own learning development (see Pl.i.9), for there is a mutually beneficial learning realisation between knowledge workers and SE leadership. A contributor score of 93,4% indicates that leadership communication about learning is effective, current and welcomed by knowledge workers (Leibold *et al.*, 2015; Nonaka and Nishihara, 2018).

5.3.2 Knowledge creation-the SE culture and climate

Fullan (2014) and Auernhammer and Hall (2014) maintains that organisational culture, operational structures and leadership are indispensable facilitators of productive knowledge creation and independent learning. These are the prerequisites necessary to enhance the construction of personalised meaning making. Damşa and Ludvigsen (2016) build on Fullan, Auernhammer and Hall in stating that the presence of efficient knowledge-creating frameworks is also essential to new learning creation, a view that is supported by Adriaenssen *et al.* (2017) and Nonaka and Nishihara (2018). The research data reveals (Annexure Epic 5 5.2, P1.ii.3, 5, 16; Graph 5.3 – Leadership role, Graph 5.3 – Organisation culture) an aggregated differentiator mean score of 65,5%, which – despite a marginal positive perception – could indicate a shortcoming in the learning facilitating framework that inhibits new learning creation potential. Knowledge frameworks are to promote meaning making and communication, which in turn improve knowledge sharing. I am of the opinion that when knowledge workers encompass a shared cognitive platform, the expression of innovative new flanged learning can be easily conveyed and less time is spent on the mechanical exchange, transfer and application of new knowledge, which is essentially accomplished through implementing new organisational learning frameworks.

An SE climate and culture that nurture new learning initiatives was identified as a fundamental factor (89,9% constructor score) in setting up efficient SE learning establishments (Adriaenssen *et al.*,2017; Leonard-Barton *et al.,* 2015; Yang *et al.*, 2020). A constructor mean score of 85,9% indicates that senior leadership realises the need to create and establish a conducive SE learning culture (see Annexure Epic 5 5.2, P1.ii.1-23; Graph 5.4-Organisational culture). The results indicate that an SE learning culture must be regarded as the most important prerequisite for SE learning creation. This is demonstrated by the difference in mean

contributor scores, with Pillar 1 scoring 1,8% and Pillar 3 7,1% less than Pillar 2 (see Annexure Epic 5-5.2-3).

The qualitative data indicates that a leadership who embraces and promotes a philosophy of structured engagement, participation and dedication as corporate culture to ensure systematic competencies is regarded as an imperative for the promotion of knowledge generation.

The new reality proposed for organisational climate is one that encourages the development of new meaning, learning and knowledge manufacturing as prominent tenets of the complex VUCA landscape. The SE, which creates opportunities for continuous knowledge development to flourish, offers the greatest potential to gain a sustainable competitive advantage. It is essential to cultivate strategic creative possibilities, to empower knowledge workers to transform, respond and react positively in a proactive fashion to the embodiment of an inclusive, transformation-centric culture.

Adriaenssen *et al.* (2017), Dalkir (2017) and Yang, Li, Lu, Chen, Zhang and Li, Y.(2014) agree with Damşa and Ludvigsen (2016) that leadership should anticipate the essential significance of establishing a cultural perspective that supports co-construction and collaborative decision making with a view to increased collective meaning making applications (Mousavizadeh *et al.*, 2015). A novel framework is proposed to enable human capital as productive contributor to new knowledge designs, a working atmosphere should be instilled that stimulates and cultivates the development of creativity and facilitates the implementation of new meaning making (Leonard-Barton *et al.,* 2015; Yang *et al.*, 2014; Nonaka and Nishihara, 2018).

An interesting observation is that although SE leadership promotes, advocates and visibly supports new meaning making journeys (a differentiator mean score of 84,6%, see Annexure Epic 5 5.2, P1.ii.1-8) through the implementation of learning mechanisms, structures and access to new knowledge, leadership appears to not to be aligned to work together collaboratively (differentiator mean score of 58,6%; see Annexure Epic 5 5.2, P1.i.12 Graph 5.3-Leadership role). This is in contrast to the positive collaboration endeavour experienced on team level, as a 93,4% constructor value was obtained (see Annexure Epic 5 5.2, P1.i.18). Another observation could be that the senior leadership level may be relatively indifferent to the professional development of the knowledge worker as a possible promotor of new learning (please see Annexure Epic 5 5.3 Theme 1.iii.b) in realising the SE's learning vision. I agree with Apgar *et al.* (2016) and Kraft, Stank and Dewenter (2011) that a co-determined, inclusive

alignment and involvement of all contributors should yield and establish a sustainable SE knowledge value proposition.

5.3.3 Knowledge creation-Ownership and contribution

The data suggests that although self-regulated learning is encouraged, endorsed and facilitated by the SEs, there appears to be a reluctance to embrace personal learning (see Annexure 5.3 - Themes gained from the questionnaire). The motivation, accountability and self-efficacy (Yusuf, 2014) of self-perpetuated learning is directly proportional to intrinsic motivational factors and indirectly relational to learning strategies employed. Leibold *et al*., (2015), Nonaka and Nishihara (2018) , and Winne (2018) propose that learning efficiency can be improved by stimulating the creativity of knowledge workers. This furthermore relates to the inherent motivational degree which, in turn, aligns the personal aspirations of the knowledge worker with that of the SE.

This raises the question: How can I grow and improve my value and contribution? (see Annexure 5.3, Theme 1.i.b). The sentiment expressed in Lean Coffee session 1 matches the views of Yusuf (2014), Winne (2018) and Efklides, Schwartz and Brown (2018) that when learning networks are provided, access to learning resources is enabled and knowledge workers (Hacker *et al.,* 2017) are included as co-constructive partners in the SE's learning vision. The qualitative Lean Coffee session 1 outcome indicates that leadership does furnish these essential components (see Annexure Epic 5-5.5.a Lean Coffee session 1). I am of the view that new meaning making is established solely at the discretion of knowledge workers, as they encapsulate the potential to maximise a productive continuous SE knowledge capability (Nonaka, 2018).

In this regard, several authors (Connell *et al.,* 2017; Dalkir, 2017; Kezar, 2019 and Lamond *et al.*, 2010) postulate that innovation knowledge based organisations, which in their turn inspire knowledge productivity, are characterised by self-motivated and self-managed knowledge workers who, in their turn, inspire knowledge productivity (Leibold *et al*., 2015; Nonaka and Nishihara, 2018). The data shows that where learning and novel Agile meaning making endeavours are treated as a personal responsibility, with support from leadership and peers, an abundance of new learning paths are created.

The results (see Annexure Epic 5 5.2, P1.i-ii) further revealed that the SE learning culture and climate could sustain continuous searching for meaning making solutions. Annexure Epic 5 5.2, P1.i-ii.1 shows that knowledge workers contribute with increasing levels of knowledge dispersion in both established and non-structured communities of practice. It is believed that the primary driver is to further knowledge sociability (and develop own new knowledge competencies) as imperatives in advancing knowledge productivity. Dalkir (2017), Mousavizadeh *et al.* (2015) and Turriago-Hoyos *et al.* (2016) concur on the particular position that transformational SE| leadership primary functions are to facilitate information flows, communication platforms (Reza, 2019) and collaborative environments (Majeed and Jamshed, 2021) in order to develop new meaning making creation, as the results obtained from this study also indicate.

Future transformational leadership attributes are evident in this research and should provide continuous resourceful contributions for the development and effective alignment of a culture that is supportive in aligning learning creations to achieve strategic knowledge intent (Toendepi, 2017). According to Graph 5.5 – Collaboration, the data could indicate that this essential alignment cannot be formed if the organisation is compartmentalised and knowledge is isolated and reserved rather than exchanged and made available to all knowledge professionals (Damsa and Ludvigsen, 2016; Katz and Krueger, 2016; Schwarz *et al.,* 2018). Hence the prominence and positioning of Pillar iii.

For Pillar iii, the data (P1.iii.13) delivers a relative low contributor score (64,8%), which could indicate that explicit new meaning making and resulting learnings are disseminated among but also restricted to interteam membership. The promotion of new learning is encouraged by interteam members (78,0% constructor score) through the employment of creative thought as initiated by the individual knowledge worker (see Annexure Epic 5 5-3 P1.iii.3), as reflected in a contributor score of 92,3%. The inter-team networks are well established, which suggests that meaning making interventions and new learning are developed. This, I believe, is the co-constructors' contribution to the generation of higher levels of new meaning making, which at the same time, this increases the efficiency of knowledge productivity. A collective concept is proffered by Dalkir (2017), Nonaka (2018), Marouf (2017) and Von Krogh (2000:5), who illustrates the value of knowledge acculturation and storytelling as an aid to the retention of new knowledge, which in turn promotes creative thinking that promotes new ways of converting knowledge.

As regards culture as an enabler of new meaning making, that the ideal culture encourages the socialisation of knowledge in order to create rich imaginational learning environments through comprehensive, versatile learning frameworks crafted for knowledge transfer. This new culture of knowledge build should welcome change and encapsulate a climate that embraces new ideas to be translated into new meaning making action. I believe new approaches to knowledge integration could serve as opportunities that be fostered by continuous open dialog and crucial learning which in turn could catalyse the mobilisation for future forward looking knowledge sharing networks.

According to Greco, Grimaldi and Hanandi (2013), Habermas (2015) and Braunerhjelm *et al.* (2018), future SE networking initiatives that are contextualised in the vision of continuous learning should be driven by leadership and, in turn, should allow access of information to spawn a dialog of new meaning making. The data revealed that these exchanges were founded on creative conversations between knowledge workers and on the expansion of common cognitive contexts. The data in Graph 5.5-Collaboration is in accordance with Hacker *et al.* (2017) and Reyt and Wiesenfeld (2015) reveals that knowledge networking is created as either bureaucratic networks predominantly striving at codifying of implied knowledge or knowledge sharing. These are attained in the search for new knowledge implementations that are based on experience which could be augmented by co-determined meaning making exchanges within Agile stakeholder groups.

Antonakis and Day (2017), Dalkir (2017), Nurunnabi (2017) and Leibold *et al*., (2015) accentuate the concept that leadership should guide future SE networking activities, by facilitating access to resources for innovative learning exchanges, in the view of promoting on-going knowledge expansion (Nonaka, 2018). The data revealed (Annexure Epic 5-5.3) that although these exchanges are promoted by leadership, establishment of learning exchanges reside predominantly in informal discussions among knowledge workers. I believe that the onus of creating, promoting and sustaining learning communities exist within the discretion and custodianship of the knowledge individual.

5.3.4 Knowledge creation-Collaboration and co-construction

The data suggests that adequate access to enhanced levels of collaboration, knowledge mechanisms and infrastructure are provided (95,6% contributor score). It is therefore postulated that SE strategic knowledge group practice could lead to an enhanced sense of mission when knowledge workers are engaged in the collaborative solution finding of problems experienced in current business practice, as Annexure Epic 5-5.2 suggests. This suggests that the main emphasis of these knowledge communities of practise is on creating new meaning which is be based on knowledge germination, established, by growing, expanding and developing the learning ability of individual knowledge workers (see Annexure Epic 5 5.2, P1.iii.9).

This corresponds with the research by Auernhammer and Hall (2014) and Zahra (2015), This suggests that the formal communities of practice include knowledge professionals within a repository that enables exposure to explicit meaning making. The new organisational curriculum promotes innovation-focused meaning making opportunities (Wenger, 2011) that increases the combined potential of knowledge workers for optimum efficiency and, consequently, the achievement of a strategic intent that manifests the full benefit of the increased new meaning making capacity. Communities of knowledge should be integrated with the strategic objective of the organisation in order to make a constructive contribution to the success of a sustainable strategic advantage. This key strength extends towards experienced knowledge sought leadership embedded in formal communities of practice as a modern skill-leveraging agent.

From the results obtained in Annexure Epic 5 5.2, P1.iii.13-16 and Epic 5 5.6.1, It became observable that communities of practice could be utilised not just to develop Social Intelligence (SI) but to facilitate future knowledge potential which are not present in the current SE, as a differentiator score of 12% was obtained.

The research further suggests that the communities of practice who engage collectively in a co-constructive fashion deliver strategic imperatives, which adds considerable value to knowledge building by means of connectivity options in creating new meaning making potential. In this regard, Graph 5.5 indicates that the dispersion of new meaning making solutions is believed to

be facilitated by formal communities of practice. These new learning capacities could stem from purposeful consolidated learning creation initiatives driven by the formal communities of practice; (word cloud Dimension 1); this coincides with the views of Wenger (2011) and Zahra (2015). I am of the opinion that, taking into account the aggregating feedback of a 39.2% differentiator score (see Annexure Epic 5-5.2-P1.iii. 12-16), knowledge communities have not positioned themselves to become essential in the achievement of new meaning making socialisation. The affiliation with a community of networks and access to diverse knowledge repositories could offer the potential to expand the learning landscapes of the contemporary SE.

Dhir (2019) and Apgar *et al.* (2016) advocate that the key to new learning creation and knowledge efficiency could be improved by having confidence in sense of self, tenacity and the ability to progress one's creativity and thoughtfulness. The data reflects that a high basis of trust (see Annexure Epic 5-5.2-P1.ii. 8,12,18,19) is prevalent in the co-constructor SE representation, as a differentiator mean of 81,3% was obtained. This strong basis of trust should facilitate openness and safety for freedom in communication, knowledge sharing and exchange of newfound insights. This is not apparent in the data obtained, as a differentiator score of 47,2% was obtained in response to the question whether it was easy to work with co-workers, as we all contribute towards promoting new learning (see Annexure Epic 5-5.2-P1.ii. 14).

From the set of results obtained in addressing Dimension 1 – Learning creation, it is apparent that contemporary organisations have not yet initiated and inspired a culture that enhances cooperative engagement, interaction and commitment in decision making processes for the promotion of sustainable value-creating relationships. This postmodern culture infusion, requires enhanced SI founded on trust, commitment and tenacity to leverage new meaning, that could occur by inclusion of all the organisation's stakeholders. See Figure 5.1-Dimension 1 Aggregation of learning creation pillars, which depicts the consolidated standing, prominence and relevance of the respective learning creation pillars under scrutiny. Figure 5.1, Dimension 1 Aggregation of learning creation pillars initiated and evolved in construction that is depicted by inclusion of the hand written accompaniment.
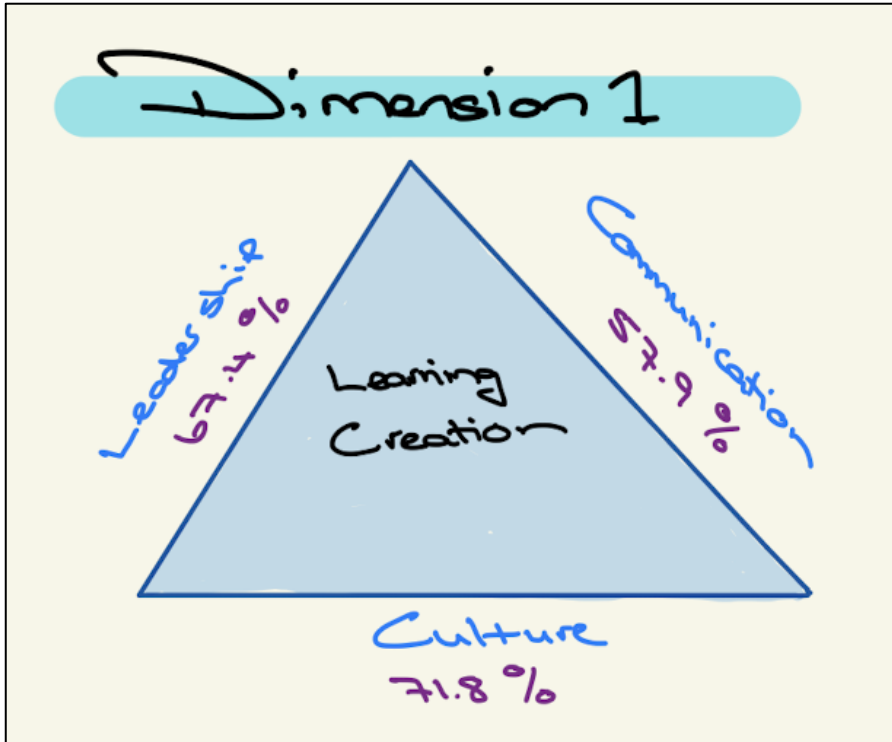
Figure 5.1.a-Dimension 1 Aggregation of learning creation pillars-hand drawn, (The Writer, 2020).
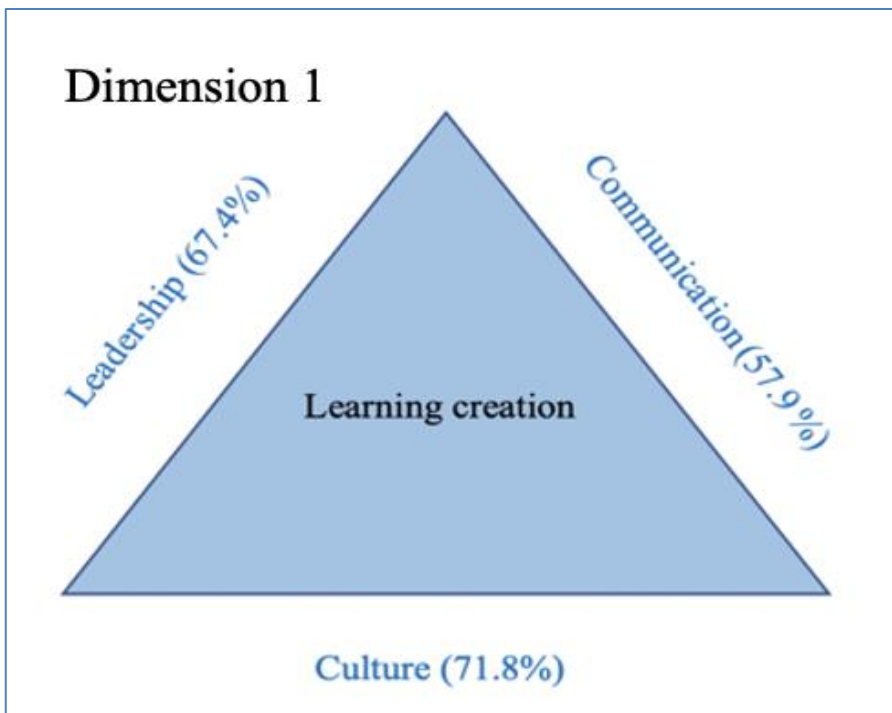
Figure 5.1.b-Dimension 1 Aggregation of learning creation pillars-digital, (The Writer, 2020).

I postulate that the optimal learning-enabling culture should promote socialisation of knowledge for the purposes of knowledge dissemination, reflection, interaction and collaboration. Thus, this constant learning culture celebrates transformation, transition and enhances a climate through an intrinsic trust value (see Annexure Epic 5-5.3-Theme 1.ii.b-Value contribution) so as to enable new ideation and meaning making. This new meaning making should be translated into learning action through higher levels of psychological ownership and embodiment by senior SE leadership.

5.4 Research question Two-Agile maturity

5.4.1 To determine why should Agile maturity become part of the future of curriculum design and development?

Dimension 2 – Agile maturity results are presented bearing in mind that 85,7% of the co-constructors who participated actively employ Agile principles and practices. The results obtained show marginal positive correlations between mission and structure and way of work (0,09), way of work and adoption of Agile (0,19). The highest Pearson's correlation of 0,33 is noted between mission and structure and Agile adoption, which was to be expected, as Connell *et al.,* (2017), Denning (2018) and Kocaj (2018) emphasise the relevance of executive sponsorship and avocation of Agile transformational journeys (see Annexure Epic 5-5.6-Agile maturity Pearson correlations). An interesting observation is that although it attained the lowest differentiator mean (29,9%), Pillar 1 attracted the highest consensus in feedback obtained, with a standard deviation of 5,85.

Klopper and Pendergast (2017) and Leopold (2017) expand on the leadership prominence of Connell *et al.,* (2017), Denning (2018) and Kocaj (2018) in emphasising the following three essential complementary Agile leadership prerequisites:

- Visible support for Agile by senior leadership
- Integration of the Agile ethos in goal setting
- Provision of Agile support frameworks and functions

The data gives insight, with an average differentiator mean score of 34,7%, into senior leadership's positioning of Agile as an SE strategic imperative. Pockets of excellence are presented, as a 15,4% "strongly agree" constructor response was obtained in P2.i.1 in conjunction with the comment "I work in a supportive team (agency) with a supportive manager (the steward who embodies transformational leadership) where I am encouraged to contribute to the organisation" (see Annexure Epic 5-5.2, P2.1), which illustrates the progressiveness of the SE's Agile vision. This diverse result could be attributed to the 15 industries represented (Graph 5.1-Co-constructor occupation/industry) and the 21 organisational standings (Graph 5.2-Incumbent position) represented as co-constructor input to the questionnaire.

The absence of leadership endorsement (36,3% differentiator score) and/or an inclusion of Agile meaning making prominence in the organisational strategy (40,6%, Annexure Epic 5-5.2) accompanied by the visible absence of championship from leaders could have a stifling effect on Agile journeys. As a case study, the knowledge workers (in the absence of leadership support) established a collaborative Agile platform (Annexure Epic 5-5.6-Interview with S. Strydom), seemingly between "rival" companies, to address and share Agile knowledge gains as regards possible coaching possibilities. An informal community of practice (COP) emerged within the Agile enablers of the insurance industry in South Africa. Gatherings are expected to be monthly virtual meetings where experiences, challenges and ideas are shared. From the interview it emerged that although formal leadership could be absent in Agile meaning making journeys, spheres of influence (Archer, DeWitt and Wong, 2014) should be established by the passionate knowledge worker as a distributor of new meaning making. Sharma and Kodali (2018), Lemoine *et al.* (2017) and Toendepi (2017) asserts that knowledge workers possess the readiness of championing knowledge self-leadership and thereby foster the greater interest of organisational learning facilitation.

5.4.2 Agile maturity-Mission and SE structure

The research data suggested (P2.1.4-45,1% contributor value) that in addressing Pillar 1-Mission and structure, a disparity in SE Agile visions could exists between SE leaderships. This deduction could be critical to the success of current and future Agile endeavours, as current leadership paradigms could translate into future Agile coordinating mechanisms for

competitive advantage in the global marketplace. Lean Coffee session 2 (see Annexure Epic 5-5.5.b-Lean Coffee session 2) revealed that for SE teams and work groups to embrace true Agile adoption as a way-of-work capability, the leaders who construct and form organisational hierarchies should employ traditional management mindsets and principles based on functionality and application of incumbents, which contradicts the Agile ethos, practices and principles (Agile Alliance, 2018; Kaltenecker, 2019).

The comment "I'm not 100% convinced the overall leadership truly understands Agile and all that it entails" (see Annexure Epic 5-5.3-Theme 2.i.a) supports the notion that where SEs adopt Agile, leaders who construct and form organisational hierarchies (employing traditional management principles based of functionality and application of incumbents) are neither aligned with nor understand the ethos of Agile principles and practices. The study confirmed that the postmodern learning narrative is not compatible nor infused by leadership, which apparently fails to acknowledge the creativity and innovative ethos of Agile thought. I believe that enlightened leadership qualities are urgently required to facilitate a conscious support for formal SE Agile meaning making infusions. In addition, I observe the pertinence of transformational leadership effectiveness in facilitating an innovation-led Agile organisation. Here transformational leadership effectiveness and efficacy could produce a viable antifragility proposition (Taleb and Douady, 2013) that welcomes the turbulence and complexities of the changing VUCA landscape. A positive linkage between leadership support and the spread of the Agile way of work could be actualised in transformational and empowerment organisations (Goodpasture, 2016; Kaltenecker, 2019; Parker *et al.*, 2015).

The data showing a 62,7% differentiator mean underscores the practicality and positions Agile positively as way of work in the new operational SE praxis (see Annexure Epic 5-5.2, P2.ii). This sentiment is confirmed (91,2% differentiator mean, P2.ii.1) with specific regard to the way Agile as way of work is of benefit in the current Covid-19 lockdown times. This is supported by the non-directive interviews (Annexure Epic 5-5.6-Interview with S. Strydom; 5.3 Kayla Steyn interview), which revealed that creative new ways of work (Howkins, 2010; Renzulli, 2016) are urgently needed in these unprecedented times to capacitate clients (internal and external) to work from home. Wester (2018) in conjunction with Mergel (2016), concur with Franklin (2014), who claims that a benefit of true Agile is "the ability to respond operationally and strategically to changes in the external environment". This Agile virtue is

supported in the data, with a differentiator mean of 78,0% for the response to the question whether Agile makes working from home easier (Annexure Epic 5-5.2, P2.ii.15).

5.4.3 Agile maturity-Agile meaning making capability

The data suggests that there could be a direct, proportional dependency between increased levels of customer experience (Kaltenecker, 2019) and Agile application levels (Leopold, 2017). It can then be deduced that the level of customer centrism could be dependent on the level of openness to Agile enablement and meaning making endorsed and supported by the organisation and the incumbent. I am of the belief that operationally Agile as way of work has been welcomed, which is confirmed by the comfortability factor of Agile usage as way of work (91,2%), the response that Agile makes working from home easier (84,6%) and that Agile makes work life easier (80,2%) (see Annexure Epic 5-5.2, P2.ii.9, 12, 15). The qualitative data further suggests that customer experience as an independent variable regresses and could become non-existent where there is no progress towards an established Agile meaning making community of practice, where sharing of new learnings is co-constructed and socialised.

The inverse to customer experience regression and diminishment could be dependent on the level of new Agile meaning making and the sharing thereof. However, the opposite appears to present itself, as pockets of SE entities emerge and establish a trans-SE Agile learning culture. The emergence and establishment of Agile sharing communities of practice appears to occur more prominently in the information technology sector, especially in the disciplines of user experience (UX) and software development, where multimodal applications of learning and meaning making are employed. This coincides with the views of Budianto (2019), Dalkir (2017) and Nonaka (2017),

The data further shows that there is a possible direct proportional dependency between increased levels of customer experience and further educational levels (i.e. Agile meaning making capability) of service providers. It could then be deduced that the level of customer centrism could be dependent on the level of openness to learning enablement and meaning making endorsed and supported by the organisation and the incumbent.

The data elicited indicates that work conceptualisation and measurement of Agile as a service framework (Budianto, 2019; Van Thanh, 2020) has an established footprint in the SE operational capacity with a comfortability factor (91,2%, P2.ii.9). This is evident in the qualitative data (Annexure Epic 5-5.3, Theme P2.ii.a), which shows the progression of Agile as a benefit in day-to-day operations, bearing in mind psychological factors such as the absence of physical human contact and face-to-face socialising, which must be considered in a holistic work optimisation journey. I am further of the view that the mechanics of work optimisation methodologies could be irrelevant, as there is no absolute single solution for each work challenge. A suggested approach could be a hybrid framework for transforming into an optimised way of work. The journey towards a new way of work should be a process of collective co-determined insights, with continuous adaptation and adjustment of levers that correspond to Shu Ha Ri (a Japanese term for Agile adoption progression) (Liker and Convis, 2012; Parker *et al.*, 2015; Stuart, 2020). I believe the focus should be on what works for all – the knowledge worker, SE and the wider ecosystem-and on what gives SEs the best value and quality for new Agile meaning making results.

As regards the SE practice of Agile principles (Annexure Epic 5-5.2-P2.ii.3, 5, 6), the data produces a marginal 36,2% differential mean, which could indicate that although Agile has been welcomed and entrenched as way of work, it has been implemented as individual small team endeavours. This notion is supported by p2.ii.14 and p2.ii.16, with an 84,6% differentiator mean regarding the influence of Agile as way of work on inter team collaboration and the consequential advantageous effect on team collaboration. On an operational work group level, the team's ability to achieve and maintain its productivity in terms of its key performance indicators (P2.ii.14) delivered a 92,3% contributor score. This could be attributed to the socialisation and communication of new Agile meaning making, the maturity of personal accountability and a collective responsibility realisation of the team's individual knowledge worker. The collaboration sentiment is echoed by data provided in Annexure Epic 5-5.5.b-Lean Coffee Session 2, with the statement "organisations are forthcoming with information and encourage staff to challenge themselves in personal development through embracing ownership, accountability and responsibility".

The qualitative data (as noted in Theme 1.ii.c) agrees with authors Dalkir (2017) and Knight *et al.* (2018), who state that that the process of value creation could be bidimensional, as it should embrace a holistic approach of both personal and professional contributions. If this is the case,

could the SE contributions embody a wider spectrum of personal investment required? The concept of holism (Damşa and Ludvigsen, 2016) as a principle for value realisation could be supported by the provision of SE contributions that could have a direct relationship between autonomy accompanied by leadership encouragement, willingness and personal ownership of new Agile meaning making.

5.4.4 Agile maturity-Agile adoption

The value of open communication between working groups appears to play a critical role and could be as important as the personal ownership and accountability (Annexure Epic 5-5.2-P2.ii. 5, 6) of Agile teams. There could be a relational implication between communication, personal ownership and accountability demanded from the SE, especially with regard to communication. Could a lack of communication be the cause of bottlenecks in most meaning making efforts? The inverse could be relevant, as pockets of some teams collaborate effectively but others definitely do not. The underlying culture present as an inter-team baseline seems to vary, which could impede effective communication. The fostering of these personal attributes is especially applicable to communication of the team objectives, as the knowledge worker is granted autonomy (Tourish, 2014).

Insights gained in Lean Coffee session 2 have shown that informal creation of a mechanism for diffusing knowledge throughout the SE could generate exponential learnings, to increase and facilitate new knowledge generation. These knowledge interactions enable teams to achieve strategic learning objectives which is based on the internal and external exchanges of information as proposed by Mazzocchi (2013) and Von Krogh *et al.* (2012). I promote the notion that knowledge socialisation necessitates effective collaboration that emerges from communities of practice within the new Agile paradigm, which encourages and creates new meaning making competencies. The knowledge worker is expected to participate in collaborative knowledge creation and be highly productive, which would increase the SE's competitiveness. I agree with Liker and Convis (2012) and Parker *et al.* (2015) who suggest that multiple learning layers could evolve as a result of meaning making socialisation within an embraced Agile way of work, that could facilitate the creation of internal and external network channels for the generation of new knowledge solutions. All activities of a knowledge driven organisation should be integrated and synchronised to create new learning

concomitance for the achievement of Agile as way of work in unlocking the intended value propositions (Stuart, 2020).

"We are trying to roll out Agile to the rest of the company; however, it has been a struggle to get them to adopt it" (Annexure Epic 5-5.2-P2.iii 5).

The notion that Agile has been adopted (Dimension 2, Pillar 3) as way of work on an individual and a team scale that is echoed by the above comment in the questionnaire. The apparent Agile SE adoption success rate is negligible, as a differentiator mean of 51,6 was attained in the survey (see Annexure Epic 5-5.2-P2.iii). This contrasts with the individual necessity for Agile to be embraced as a way of work; the endorsement of 71,4% (P2.iii.1) emphasised the importance of SE leadership buy-in. The leader's sponsorship is paramount in Agile progression, adoption and sustainment. As a respondent commented: "We used Agile for a while and I thought it worked well, then the team stopped, and our manager is not interested in using it again". This sentiment is echoed on a wider scale by more respondents; a differentiator score of +36,2% was obtained for the question whether the organisation's Agile journey was visibly supported by their leadership (P2.iii.2).

The assessment of the five levels of Agile maturity as depicted in the Agile maturity model (Figure 6.2) is based on responses obtained from Annexure Epic 5-5.2-P2.iii 1-5. The data produced a differentiator mean of 30,92, which positions the SE Agile maturity level between levels 2 and 3. The personal conviction that Agile is a success is reflected in P2.iii.6, where 66,2% of respondents would not revert to the previous way of work, and P2.iii.8, indicating a 86,8% contributor score of Agile meeting (or exceeding) personal expectations. A level 2 allocation on the Agile maturity framework is underscored by an 85,7% conviction that results have improved with Agile as main driver of the way of work (P2.iii.11). This supports the notion that Agile could help alleviate current business challenges experienced if positioned as a collaborative, co-determined excursion.
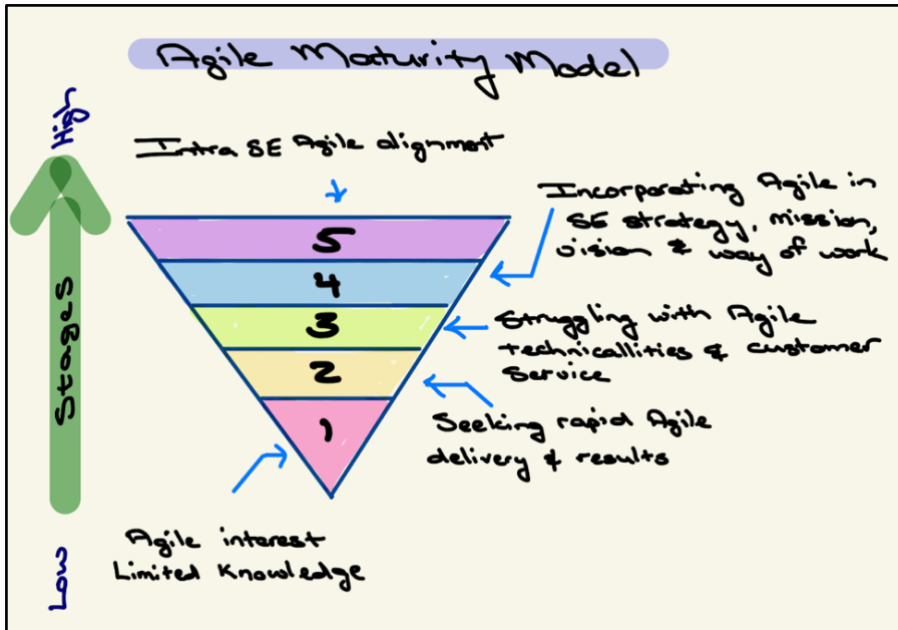
Figure 5.2.a-Agile maturity model (Adapted from Rigby *et al.*, 2018)-hand drawn, (The Writer, 2020).
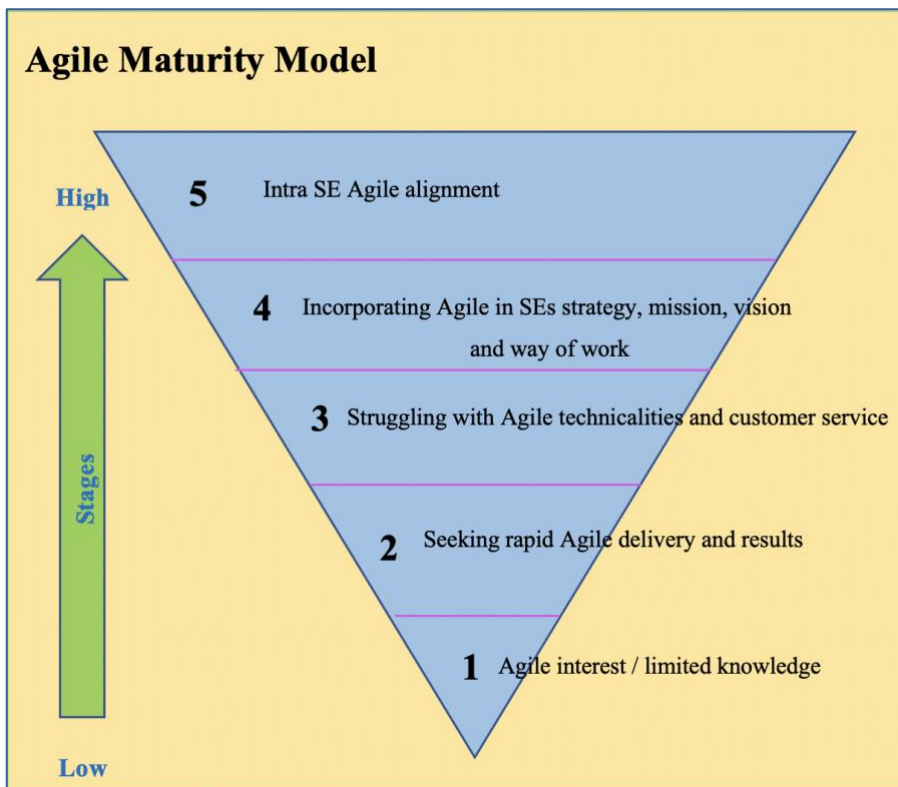
Figure 5.2.b-Agile maturity model (Adapted from Rigby *et al.*, 2018)-digital, (The Writer, 2020).

Figure 5.2, The Agile maturity model (Adapted from Rigby *et al.*, 2018) initiated and evolved in construction that is depicted by inclusion of the hand written accompaniment.

The qualitative data (Annexure Epic 5-5.3 Theme 2.i.b) implies that it is necessary for leaders to cooperate more proactively with knowledge workers, who should be included in applicable SE decision-making processes. This co-determination endeavour is aligned with the views of authors such as Ben-Yshai (2018), Damşa and Ludvigsen (2016) and Katz and Krueger (2016), who believe it to be a sustainable proposition for Agile embarkation and the instilment as a sustainable way of work in addition to co-determination as measure for autonomy. A formal platform is needed where all voices can be heard and new meaning making can become clearly articulated and retained. Co-determination, where communities of experts emerge from communities of practice, is regarded as key for embedding a sustainable Agile culture. These formally instituted communities of practice should facilitate simultaneous referencing; they drive meaning making, which creates a concurrent funnelling process for prioritising SE burning platforms (Toendepi, 2017; Von Krogh *et al.*, 2012).

5.5 Concluding an Agile maturity perspective
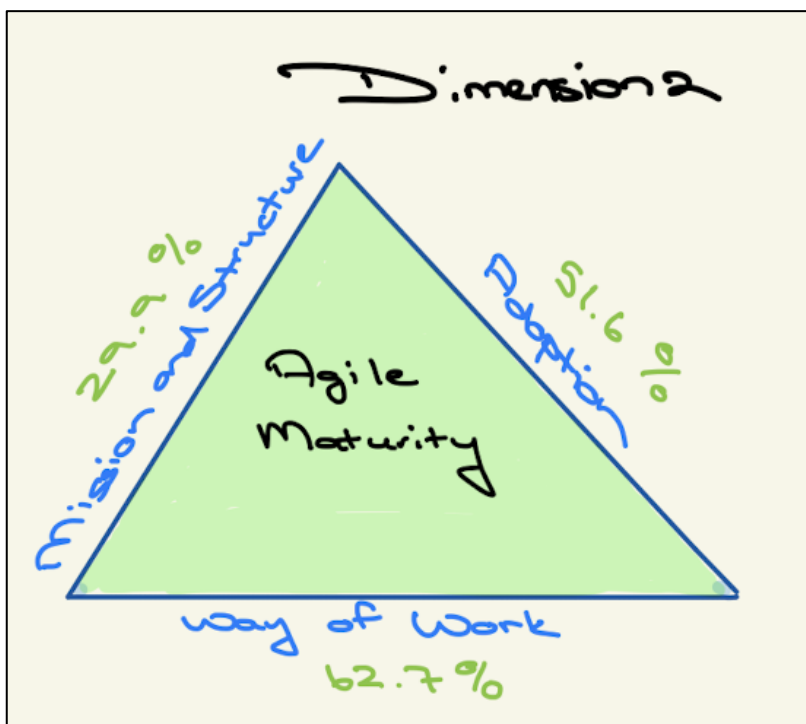
Figure 5.3.a-Dimension 2 Aggregation of Agile maturity pillars-hand drawn, (The Writer, 2020).
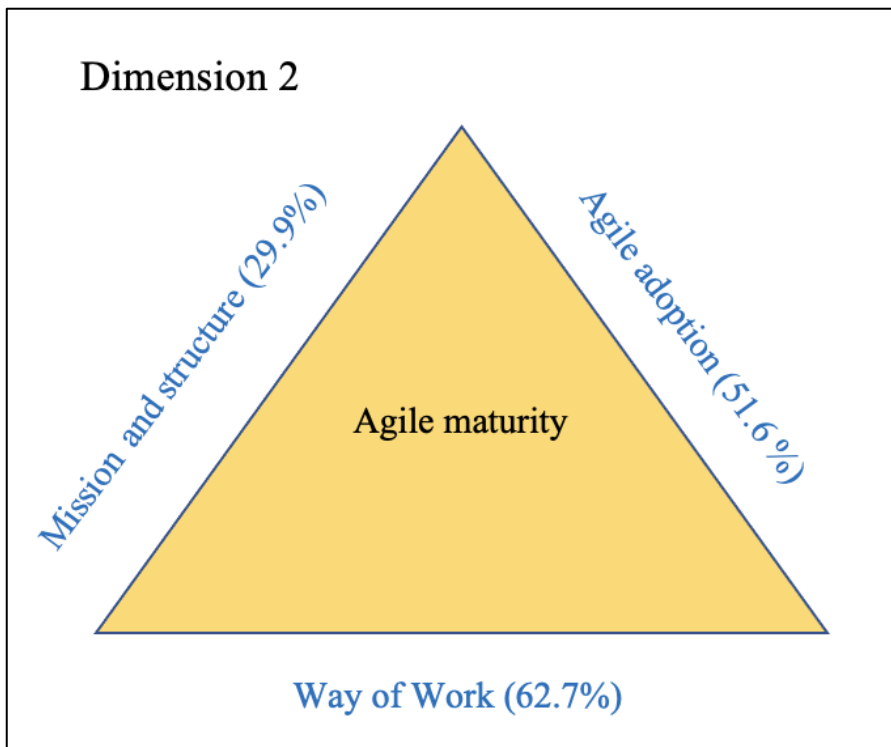
Figure 5.3.b-Dimension 2 Aggregation of Agile maturity pillars-digital, (The Writer, 2020).

I am of the opinion that although leadership proclaims to endorse Agile, that same leadership is not aligned with an understanding of the Agile ethos, hence the true Agile principles, practices and value potential are not implemented. I further believe that leadership applies the concept of Agile loosely and uses Agile as a buzzword; this is evident in the contributor score of 16,4% obtained when asked whether SE leadership applies Agile principles and practices in their day-to-day operations (see Annexure Epic 5-5.2-P2.ii. 5).

A call for leadership to be more proactive regarding the implementation, adoption and sustainment of Agile as a way of work has been made, especially with regard to the COVID-19 landscape, which necessitates working from home. It is confirmed that Agile as New Methodologies Thinking (Question 2.iii.13) is an imperative to confront Covid challenges in particular,, with a differentiator score of +80,2%. This notion requires a progressive leadership standing, as conventional management philosophies have become impractical in an age characterised by openness, accountability, involvement and speed of new meaning making (Dalkir, 2017).

I believe that when progressive, meaningful value-adding work methodologies are introduced, supplementary influences should be considered for optimal way of work, as expressed in the

comment: "I don't think that Agile is the only factor to be taken into consideration in the working from home situation". Besides the clinical mechanism of work performance referred to, this is a request for a holistic, humanistic, multi-intelligence co-determined approach to not only survive expectations in these challenging COVID -19 times, but to impart antifragility capabilities for the new progressive SE as well.

5.6 Aggregation of Dimensions (1) Learning creation and (2)Agile Maturity

This conclusion consolidates findings, observations and insights with respect to the data of Dimensions 1 and 2 and their supporting pillars. EPL aggregation (Figure 6.4-EPL Aggregation Dimensions 1 and 2) illustrates and construes the design of EPL Dimensions 1 and 2, their interaction, relation and augmentation in support of research objective 1 in determining 1. How should knowledge creation methodology adapt to the new world of work?

The Pearson correlation coefficients ranged from a single negative 0,064 (Dimension 1, Pillars 1 and 2) to the strongest positive correlation coefficient of 0,33 (Dimension 1, Pillars 1 and 3). Although positive correlations are found, it should be noted that all r values are less than 0.4, which indicates that the although positive, the relationship between the respective dimensions and their supporting pillars is weak. An interdimensional p value calculated as 0,0453 is of the utmost interest, as it is statistically significant as strong evidence that research objective 1 has a positive outcome (see Annexure Epic 5-5.6 1,2). Figure 6.4, The EPL aggregation initiated and evolved in construction that is depicted by inclusion of the hand written accompaniment.
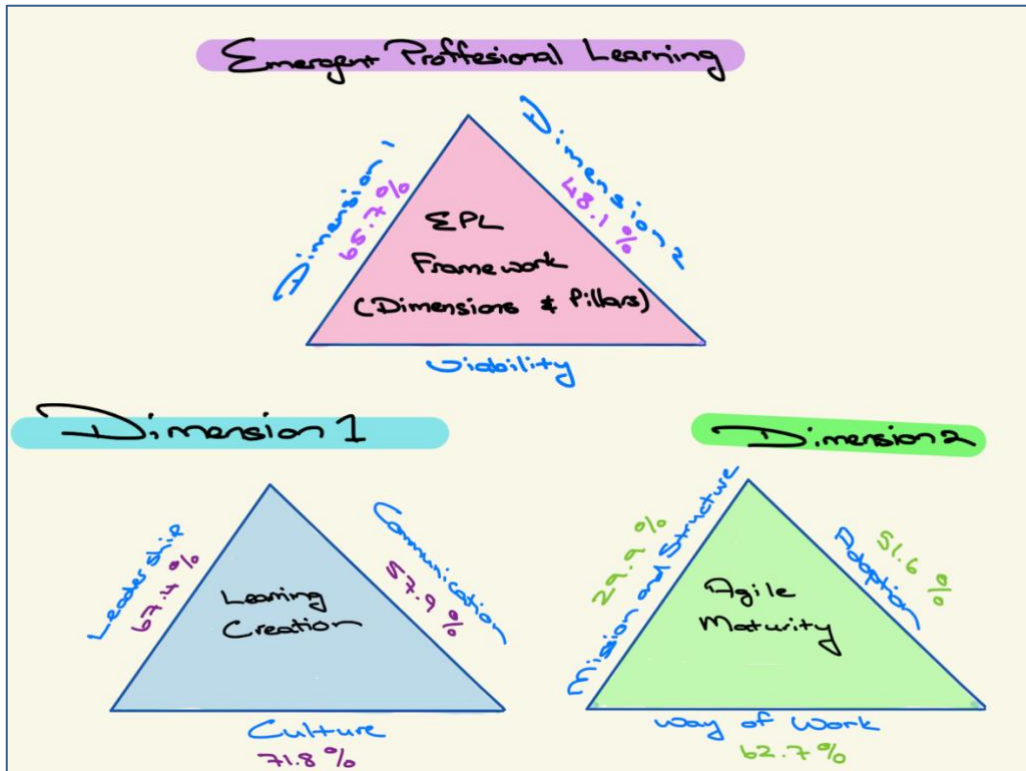
Figure 5.4.a-EPL Aggregation (Dimensions 1 and 2)-hand drawn, (The Writer, 2020).
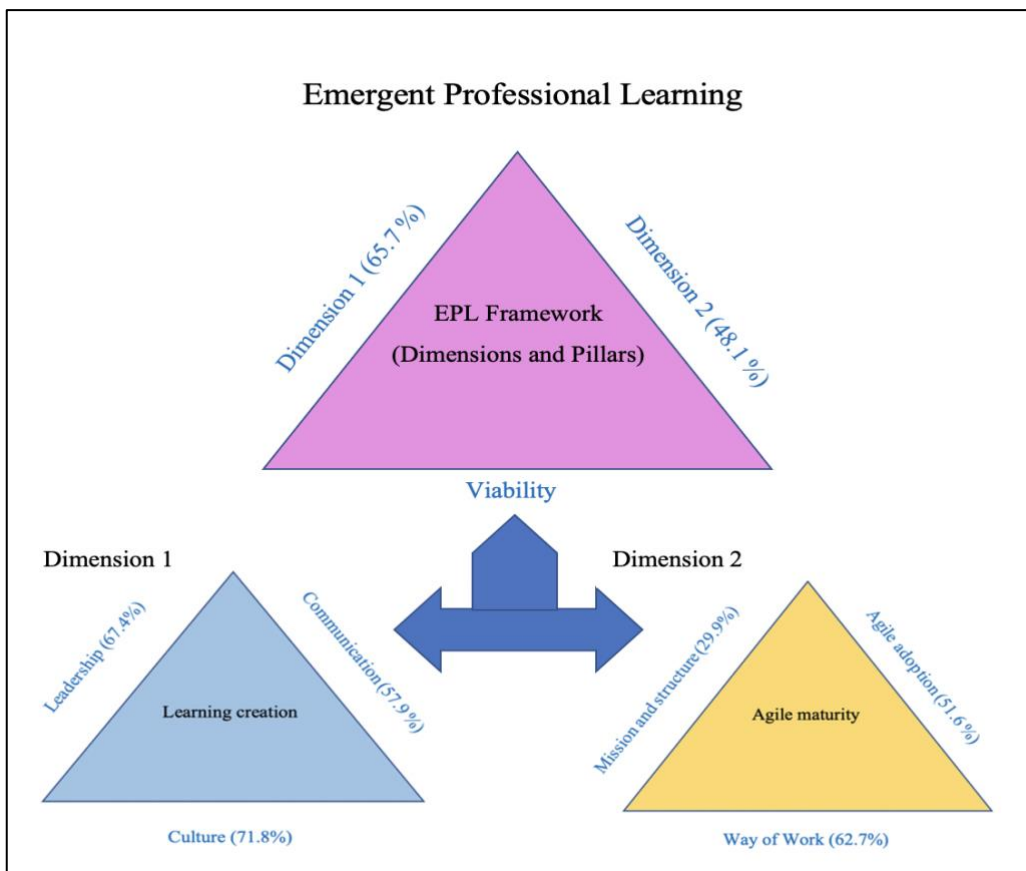
Figure 5.4.b-EPL Aggregation (Dimensions 1 and 2)-Digital (The Writer, 2020).

In this exploratory journey, the most significant correlation was achieved among the variables that constitute the research question, sub questions and overall objectives.

These correlations are emerged as the <u>most significant</u>

1. the **position of leadership** which includes the variable of **responsibility** achieved an **84.0 %.** This measures the organisational hierarchy of executive decision-making capability.
2. Furthermore the capacity of SE culture identity produced a significant correlation supported by the data with the score of 85.9%.

(**SE for this study this term refers to this** term refers to knowledge workers organisations, learning institutions that actively pursue new knowledge creation, the interpretation, socialisation, and co-construction of new meaning. The **SE cultural identity** measures the organisations inclination to facilitate, enable and advocate collaborative and cooperative learning through new meaning making establishment. This could be promoted by focusing on community involvement, responsibility, and group participation, the establishment of formal communities of practice, healthy physical and mental relationships, and to live fulfilling and successful lives).

The second correlation of significance concerns emergent professional learning which consists of learning creation which produced a score of 65.7% and agile maturity which measured at 48.1% and includes Way of Work measuring 62.7 and includes the viability (56.9%) of the practical application of the EPL framework within the Agile working environment.

5.7 Conclusion

The data provided convincing support for a renewed value contribution that can be delivered through inclusive SE positioning for advanced levels of Agile enhancement in the workplace. The triangulated data (See Figure 5.5 Triangulation of collective data) produced compelling themes urging SEs to encourage new meaning making for effective learning and knowledge sharing to occur, as will become evident in Epic 6.

The detailed observations allowed for a holistic depiction of the research process, which incorporated living theory as part of the multi-methodology approach. The multi method option enables for the enhancement of many factors, their examination in connection to one another, and the viewing of the process as a whole in order to gain a better understanding of EPL as a contribution to the new world of work (Lessem and Schieffer, 2016).

A comprehensive framework will be presented, validating support for autonomous knowledge workers to become the pivotal drivers to unlock new meaning making capabilities. The qualitative data reiterates that a SE culture is anticipated where leaders are invited to promote new meaning making with attention to Agile as the way of work by offering instrumental assistance to yield increased knowledge productivity (Dalkir, 2017; Jackson *et al*., 2015; Nonaka and Nishihara, 2018).

Triangulation of collective data

- Transformed culture 65.7%
- Collaboration 68.2.%
- Collaboration 54.6.%
- Antifragility
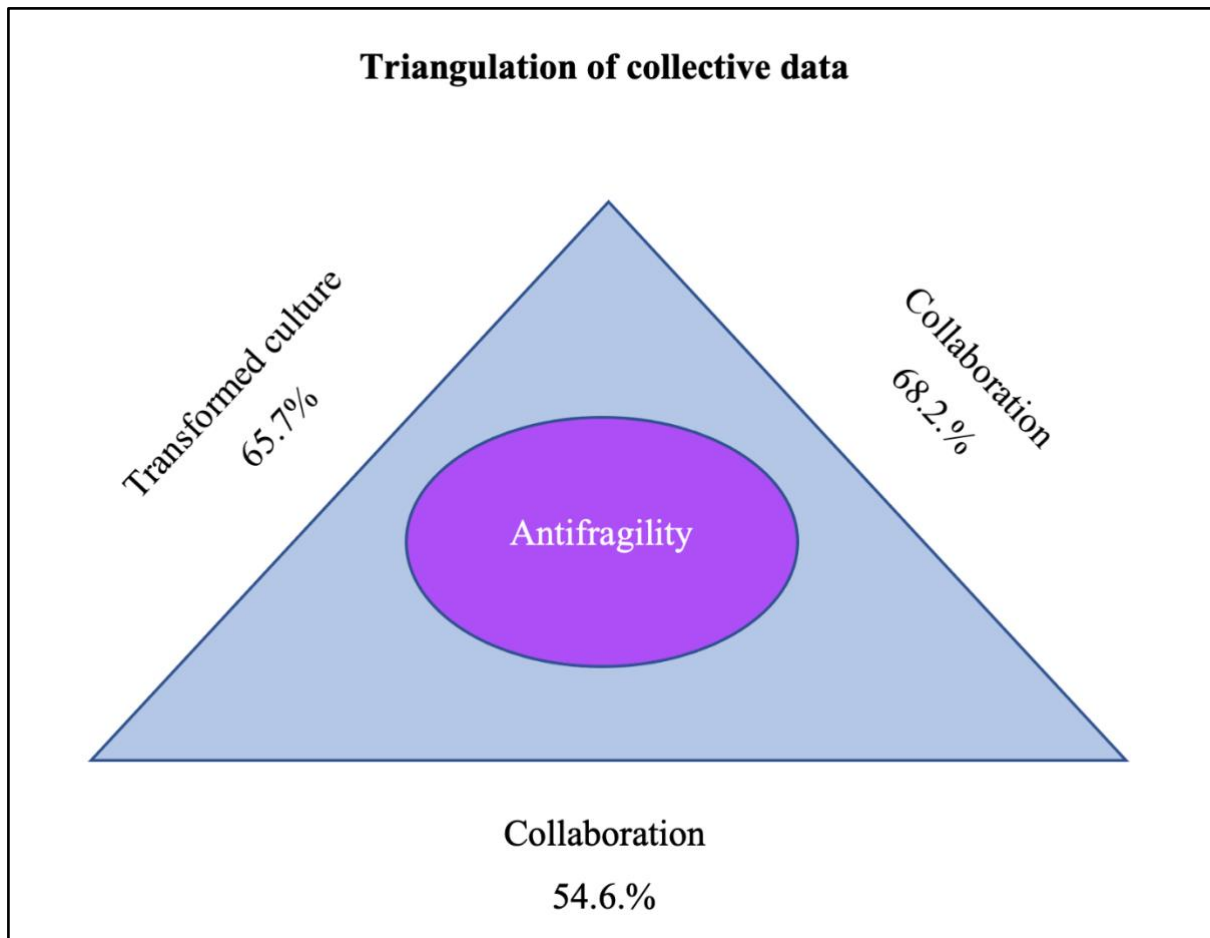
Figure 5.5 Triangulation of collective data (The Writer, 2021).

In Figure 5.5 the data presents evidence that collaboration (68.2%) correlated to transformed culture (65.7%) and collaboration (54.6%) that builds on the transformative action towards anti fragility as reflected in the survey methods and empirical data derived from the questionnaire. As the new economic dispensation is evolving, multilateral connectivity, knowledge sharing, vision and purpose were regarded as the most important considerations that need to be addressed. This could encourage the notion of fostering a shared corporate culture that embraces potential learning anticipation while acknowledging the significance of a meta-cognitive understanding of new meaning making to reshape Agile in the modern workplace.

The new framework presented in Epic 6 advocates the idea that when knowledge workers are granted autonomy, there is greater efficiency and transparency (Tourish, 2014) in applying their meaning making skills (Ben-Yshai, 2018; Damşa and Ludvigsen, 2016) as they are able to motivate and inspire themselves and capitalise on their mutual knowledge to produce higher levels of knowledge generation (Chroinín, 2019; Nonaka, 2018). This progressive SE cultural

identity will encourage anti-fragile, value-driven propositions, including psychological ownership, to become embodied within communities of practice (Von Krogh *et al.*, 2012) within the emerging Agile knowledge paradigm, which encourages exponential knowledge expansion and could make the SE antifragile (Aven, 2015; Taleb, 2013; Nonaka and Nishihara, 2018).

In addition to the SE culture being aligned with and supporting an Agile ethos as a strategic objective, autonomy in cofacilitation accompanied with ownership in crafting tailor-made way-of-work frameworks is necessary. The data gathered suggests an effective and efficient multidirectional communication strategy that enables new Agile ways of work. The affinity between personal experience and the willingness to adopt new meaning making socialisation appear to be augmented in the presence of leadership's positive avocation, encouragement and promotion.

The data could suggest that crafting a tailor-made way of work by means of various methodologies, e.g. Agile, Waterfall, LEAN etc., requires alignment between teams subscribing to the organisational vision. Where leadership truly supports, encourages and endorses Agile principles, for example by granting Agile work teams flexibility and trust to manage and perform their deliverables, a higher yield is anticipated.

This co-constructive approach consisting of incremental improvements, learning through experimentation, reflections, adaptation and implementation accompanied with an established process appears to yield a sustainable future proposition on how teams align and work. An learning ecosystem should be constructed that is positive and supportive of collaboration and codetermination between all essential SE services which could provide productive networks to construct efficiencies and accessibility to knowledge repositories.

It appears that deeper levels of mindfulness and engagement are required from leaders to ensure that SE goals are not only achieved, but sustained. The next epic discusses the prerequisites for learning creation as part of new meaning making in an adapted EPL framework as a reference for the post-modern corporate curriculum strategy.

The data, recommendations, and conclusions urge post-covid organisations to rethink current educational challenges and equip practitioners with a unique framework and approach for co-

initiating the construction of a collective platform for radical inclusive meaning making formation.

Epic 6

Insights, recommendations and proposal for a progressive EPL framework

I'm not a dystopian, futuristic master: I'm a scholar walking the street in this insane reality we're living in, just trying to find diverse interpretations.

The Writer

6.1 Introduction

Epic 5 presented a data perspective on two of the two EPL dimensions (see Figure 6.1-The EPL Dimensions: a multifaceted perspective) that examined the pertinence of knowledge creation and Agile maturity as concreteness for EPL. In this epic, the emergent data conclusions as validated are consolidated, insights are shared and possible considerations for further new meaning making journeys are provided. The essence and clarity of EPL as a meaning making artefact is positioned by combining the triangulated and living theory data and revisiting the rationale of this study. This EPL research investment is brought to the fore as the consummation of emergent mobilisers that are committed to enabling a progressive pan disciplinary EPL framework as an SE knowledge commodity.

This research contributes to a nuanced knowledge and appraisal of the possibility for Agile to serve as a feasible method for establishing an emerging platform for collaborative meaning making. The researcher's goal is to assess which fundamental pillars may facilitate in this journey via evidentiary sources such as documentation, archival materials, interviews, direct observations, and participant observation, and the data collection tools incorporate procedures associated with each pillar.

The detailed observations during this journey created the opportunity for a holistic view of the process which entailed living theory included in the multi methodology method. The multi method methodology enables the ability to enhance diverse variables, examine them in relation and view the process within its total environment towards a wider understanding of EPL as an addition to the new world of work.

The purpose of this research was to determine the viability of the proposed EPL framework as a catalyst for new meaning making. The second objective was to find themes to be included as new meaning making in an amended EPL framework. The EPL dimensional perspective (see Figure 6.1) depicts the two dimensions. Dimensions 1-Knowledge creation and Dimension 2-Agile maturity, with their respective three pillars, demarcate the scope of this study. See Figure 6.2 for a summation of the triangulated laminations regarding Dimensions 1 and 2.
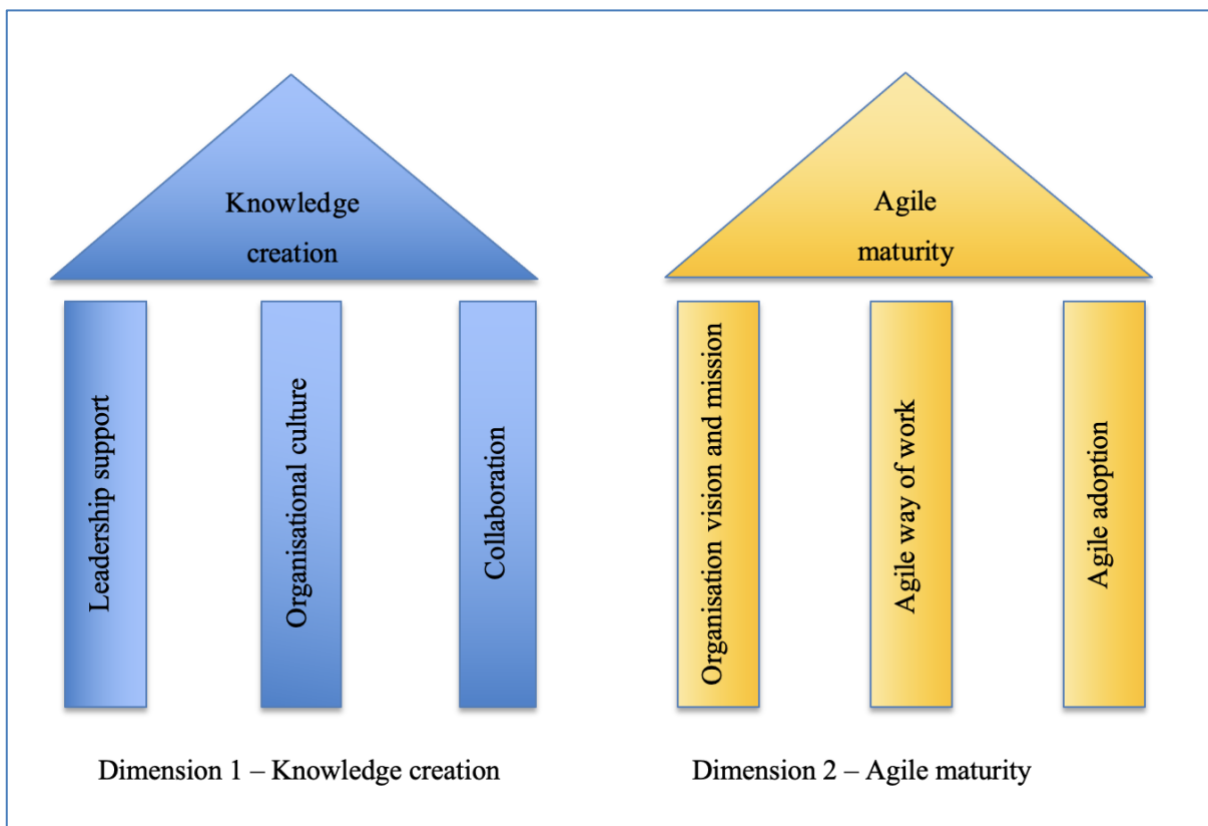
Figure 6.1 The EPL Dimensions: a multifaceted perspective (The Writer, 2017).

6.2 Synthesis of Dimensions 1 and 2

The data indicated that multiple opportunities could be created if a more progressive Agile environment were formally co-initiated where SEs can leverage strategic EPL yield from new meaning making. My insight and observations regarding knowledge contributors (see Epic 4-Conclusion) to knowledge creation are collated and presented as integration of the three strategic pillars scrutinised (see Figure 6.2-Synthesis of Dimensions 1 and 2) and serve as a

substrate for addressing research objective 2 (identifying viable prerequisites regarding Agile learning creation as an inclusion in crafting a new meaning making framework.
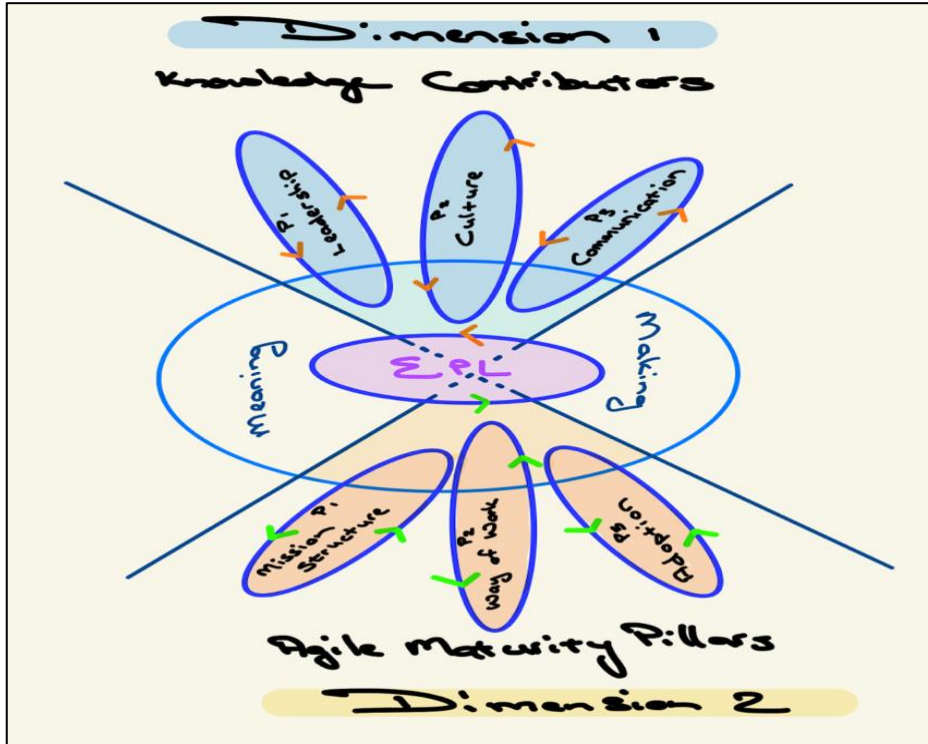
Figure 6.2.a Synthesis of dimensions Knowledge creation (dimension 1) and Agile maturity (dimension 2)-hand drawn, (The Writer, 2020).
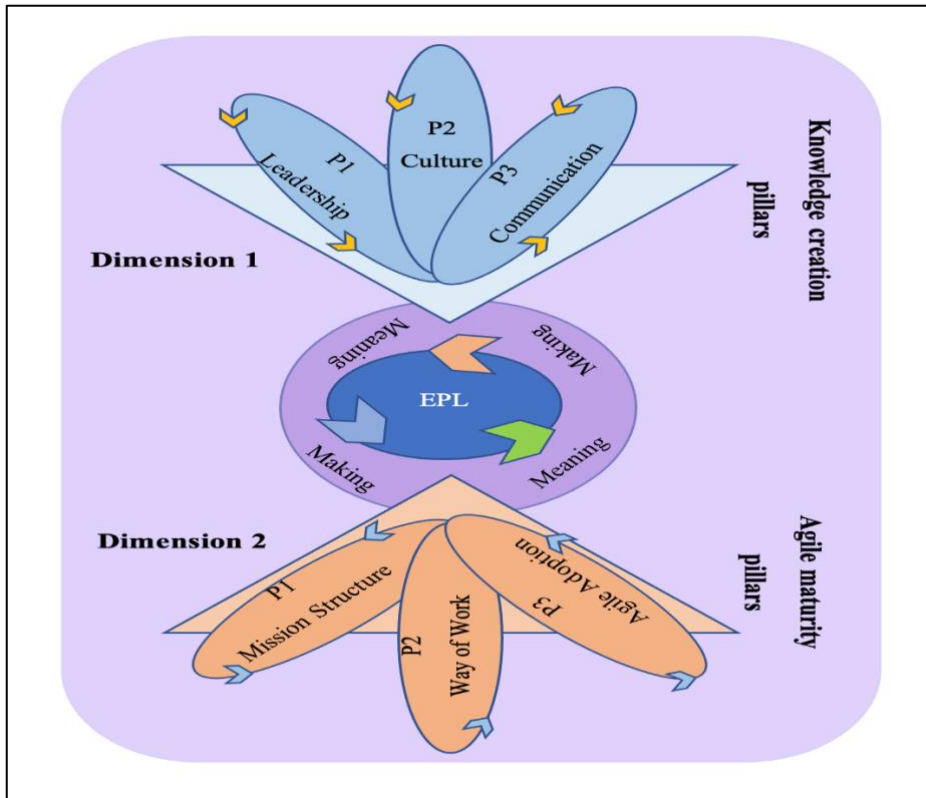
Figure 6.2.b Synthesis of dimensions Knowledge creation (dimension 1) and Agile maturity (dimension 2)-digital, (The Writer, 2020).

6.3 Synthesis of Dimension 1-a fusion of leadership consequence

The synthesis and integration of the thematic perceptions regarding dimension 1 and dimension 2 are grounded and presented as a fusion of leadership ascendancy. This amalgamation encapsulates the integration of Pillars D1 P1 and D2 P1 to 3, which constitute leadership's endorsement and advocacy of learning creation, the SE knowledge mission and vision, learning creation enablement structures present in the SE and the adoption of Agile as sustainable way of work.

6.3.a Synthesis of Dimension 1-a Leadership's role in Learning strategies

The data could suggest that there is a high measure of correlation (84,5% differentiator score (see Annexure Epic 5-5.2) between the individual knowledge workers' personal learning goals and the goals of the learning strategies employed by organisations. The differentiator score of 27,4% (see Annexure Epic5-5.2, P1.ii.13) further suggests that in the sample category relating

to senior leadership the vision, mission and operational structure seem to be set only by certain leaders who have the positional power, which could translate into fractal meaning making.

These seemingly auto reaction-induced learning strategies could explain that although leadership proclaims to endorse new meaning making, this endorsement could be limited in the manifestation and realisation of new learning journeys. This notion underscores the need to provide supporting mechanisms for new learning infrastructure and opportunity. The predominant SEs reflect a sense of leadership aversion and little interest in the ownership of new meaning making. This leadership indifference is evident in the differentiator score of 16,4% (Annexure Epic 5-5.2) obtained when enquiring about the SE leadership's daily application of Agile principles, which is validated by fewer than 2,2% of the 92 respondents that represent senior leadership completing the research survey (Graph 5.2-Incumbent position).

The antipathy of leadership towards Agile practices in their daily operations could indicate that leadership is not aligned with the Agile ethos and that a progressive corporate curriculum is not interpreted in terms of Agile principles, practices or the potential value, which could be obscured in the meaning making process. The perceived disinterest in the same representative sample grouping seems to show that leadership can apply the concept of Agile and new meaning making thoughtlessly and without capitalising on any advantage for the organisation, merely with the expectation of acquiring short-term operational results-which inevitably restricts the SE's Agile maturity to stage 2 (see Epic 6, Figure 6.2 Agile Maturity model).

It is proposed that leadership should exhibiting transformational leadership capabilities. Kezar and Holcombe (2019) encourage the notion of a transformational leadership infusion into learning creation and emphasise the importance of new leadership rubrics that enable open communication and knowledge sharing. The adoption and instilment of transformational leadership capabilities should catalyse new meaning making solutions by facilitating an official forum to deal directly with the complex essence of multiple learning environments in consideration of future knowledge decisions.

It is recommended that as an enabler of learning creation, the new leadership rubrics should accentuate knowledge collaboration, which could be furthered by establishing knowledge socialisation platforms. These new collaboration paradigms could translate and evolve as

organic knowledge co-ordinating biostructures, which should further be perceived as accomplishment of SE's future knowledge aspirations, which could be reliant on the knowledge worker collaborative effort.

It is further proposed that the efficacy of the knowledge worker could be optimised through strategic metamorphic and learning-based implementations, alignment and synthesis of new meaning making frameworks. A possible benefit, according to Von Krogh *et al.,* (2012), is the creation of a sustainable knowledge advantage. Apgar *et al.* (2016) and Jackson *et al.* (2015) concur with Von Krogh that knowledge value gain could be accomplished by combining transformational leadership and the formation of a meaning making cultural milieu.

An additional possible benefit of introducing a meaning making culture could be the transformation of existing knowledge repositories and conventional meaning making that could provide a medium for innovation-driven EPL networks for continuous value realisation (Egan, 2009; Dwivedi *et al.,* 2020; Kelly, 2017:92; Nonaka and Nishihara, 2018).

It can be distilled from the EPL framework (Figure 7.3-EPL Emergent mobilisers) that entrenching meaning making requires dedicated mindfulness, effort and devotion by all parties as a collective, co-constructed effort, with the leadership corps setting an as example as an autoreactive entity. Hence, the introduction and realisation of transformational leadership attributes are critical requirements for establishing a dynamic SE learning culture; this would present a new SE approach aimed at encouraging, inspiring and uncovering the complexities inherent within contemporary knowledge creation (Dhir, 2019; Leibold, *et al.,* 2015).

It is proposed that senior SE leadership should realise that an inclusive Agile meaning making journey is a lifelong process that should manifest as a way of work. It is recommended that the focus and inclination of all stakeholders should be aimed at collectively achieving antifragility as future anticipation for new meaning making and supporting the economisation of knowledge-based assets. Purposeful leveraging of such knowledge assets could position the knowledge driven SE with strategic advantage and economic yield.

6.3.b Synthesis of Dimension 1-Leadership's role in knowledge networks

It is further recommended that transformational leadership's willingness to lead should guide the distribution of knowledge, the retention thereof and propagate effective learning outcomes which are publicly advocated and demonstrates the new future of knowledge value. For example, future knowledge value could be achieved by maintaining support for new learning journeys working towards a formal collaborative, co-constructed knowledge enablement community. This ecological milieu of new meaning making could further manifest itself as an interconnected SE culture primarily brought about by directed leadership intervention. Figure 7.2 confirms the notion that enablement and the support of knowledge workers as co-constructors can better navigate barriers to new Agile meaning making efforts.

It is suggested that leadership should create structured knowledge-creating establishments that promote the involvement and engagement of communities of knowledge practice. The alignment of learning creations is regarded as essential, as collective meaning making cannot occur where SEs are characterised by compartmentalisation (Apgar *et al.,* 2016; Dalkir, 2017; Jiang *et al.,* 2016). The data suggests that communities of practice, as collective co-constructing organisms, could achieve the SE learning objectives by facilitating new, interconnected knowledge networks (see Annexure Epic 5-5.3). The enablement of formal knowledge networks could enable the future knowledge-driven SE to advance consciousness and transform new knowledge insights as implementable strategic benefit. It is recommended that the constructors that enable collective meaning making establishments share and make new learnings available to all knowledge consumers, revealing the eminence and necessity of antifragility as future anticipation to further innovative learning formulations (Leibold *et al.,* 2015).

The data reveals (Annexure Epic 5-5.3) that although recommendations are made to senior leadership, the establishment of learning exchanges and knowledge creation resides in collaborative discussions among knowledge workers. Regarding the constitution of learning communities, the onus, discretion and custodianship reside with the knowledge individual (see Annexure Epic 5-5.2). A possible catalyst for establishing knowledge communities of practice is the philosophical authority for knowledge creators to embrace psychological ownership. This psychological ownership could be brought about by granting accountability for inspiring and

revealing complexities, challenges and realities within the current knowledge-generating landscape. Building higher levels of emotional intelligence could lead to individual agency of phycological ownership. Ownership realisation by all concerned could ensure a collective collaborative knowledge implementation as a co-constructive commitment supported by all stakeholders.

Challenges and realities within the current knowledge-generating landscape highlighted by the data reveal that contemporary knowledge-based SEs could be perceived not to be geared to the harnessing, employment and utilisation of the individual knowledge worker's contribution. Consequently, neither the collective learning transformational potential of knowledge communities nor the extension of learning capabilities may extend beyond SE boundaries. Another result could be the inhibition of new meaning making climates that could position Agile meaning making as SE strategic capacity (Leibold *et al.,* 2015; Nonaka, 2017, 2018).

The apparent abdication of formal championship in the institution of new meaning making journeys could be a factor contributing to an approach where knowledge workers (in the absence of leadership support) establish a collaborative Agile platform addressing and sharing collective knowledge realisations. As knowledge workers appear to be reaching out, embracing self-appropriated psychological ownership, and are now engaging beyond SE physical boundaries, it appears that they understand their knowledge needs and fears and can readily express more appropriate solutions while also redefining their opponents as partners.

Complementary insights into the future of knowledge praxis could include the formal introduction of forums for new meaning making in support of economising knowledge-based assets and thereby possibly establishing antifragility attributes as a competitive advantage. The value in the intangible knowledge assets of the SE could be further extracted through the promotion of collaborative exchanges within the community of practice as it encourages, activates and guides new meaning making.

The cultivation of understanding, investment and ownership is a call to be more proactive regarding the implementation, adoption and sustainment of meaning making as a way of work. These new, networked meaning making economies are stimulated by SE initiatives that could continuously generate and institute new learning experiences and increase the flow of knowledge yield in the progressive SE. The predisposition to embracing new meaning making

endeavours elicited a high contributor score of 80.2% (see Annexure Epic5-5.2), which could indicate a propensity to view these growing knowledge ecologies as mandatory, especially with regard to SEs' successful navigation of the prevailing COVID-19 landscape and emerging, unfamiliar future VUCA dynamics. This positive contribution encourages novel leadership frameworks as the conventional ones are obsolete in an evolving era distinguished by transparency, accountability, engagement and speed (Dalkir, 2017, Nonaka, 2017; Von Krogh *et al.,* 2012).

It becomes apparent that knowledge workers' implicit expertise is translatable into desirable SE knowledge equities, and this tacit-explicit continuum of knowledge accommodates the ability to disperse information and manifest as higher levels of meaning making through active knowledge innovation.

6.4 Synthesis of Dimension 2- A combination of SE soft skills

The composition and integration of Theme 2 constitutes the thematic perceptions regarding Dimension 1 and Dimension 2 that are established and depicted as a possible embracement of SE Agile learning establishment. This amalgamation comprises an integration of dimension 1, P2 and P3 in addition to dimension 2, P2 which incorporates the SE's predisposition to establish an SE knowledge-creating culture, the socialisation of new meaning making effects and positioning Agile as a way of work.

6.4.a Synthesis of Dimension 2-SE's cultural ethos to new meaning making

The data suggests that contemporary information-trading SEs continue to rely on knowledge as an outcome which is dependent on a traditional production approaches, and imply that the postmodern knowledge worker is constrained as they continue to function within standardised management frameworks, which are time constrained, and provide inadequate meaning making artefacts.

This postmodern research contradicts conventional organisational theory, which argues that organisations are knowledge-processing systems that acquire, process and interpret information from the global knowledge community to add value and sustain strategic

competitive advantage, and the belief that knowledge workers should apply themselves to ensure the development of learning communities.

These learning communities could be conceived, nurtured and proliferate in habitats that embrace, sponsor, encourage, facilitate and endorse new meaning making through transformational leadership initiatives (Nonaka, 2017, Von Krogh *et al.*, 2012). A description of transformational leadership is presented that includes multidimensional, open communications (see Dimension 1.3-Knowledge creation contributor-Communication) whereby communities of practice facilitating the underscoring and augmentation of new meaning making capability awareness are achieving an SE culture that embraces the significance of new personal leadership effectiveness and efficacies. The instillment of a positive EPL culture that recognises and values the importance of creating meaning making and the Agile way of work should be further explored as a foundation for a progressive knowledge culture.

Culture could further shape the SE's knowledge accumulation and learning proficiency, and as this study provides context for further research to illustrate the effect of achieving a collective, co-constructive, co-determined SE ethos conducive to new meaning making enhancements. These mobilisation archetypes emerged from this research and could prove cardinal in the introduction of a new flanged organisational EPL framework (see Figure 7.5-EPL emergent mobilisers). Figure 7.3-EPL emergent mobilisers initiated and evolved in construction that is depicted by inclusion of the hand written accompaniment.

## 6.5 EPL Emergent Mobilisers
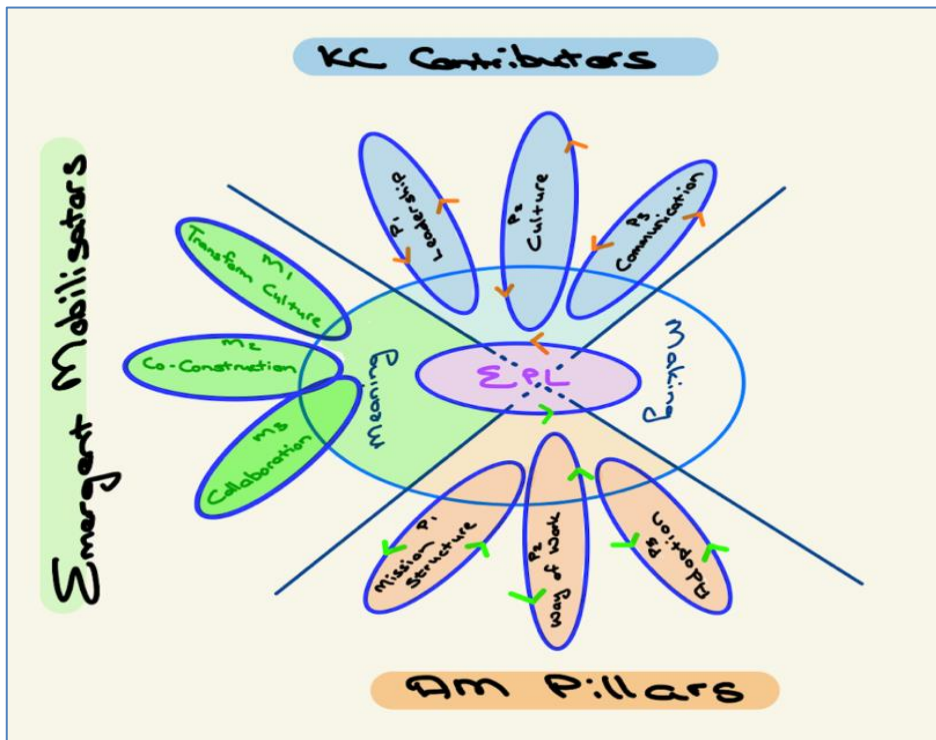
Figure 6.3.a EPL emergent mobilisers-hand drawn, (The Writer, 2020).
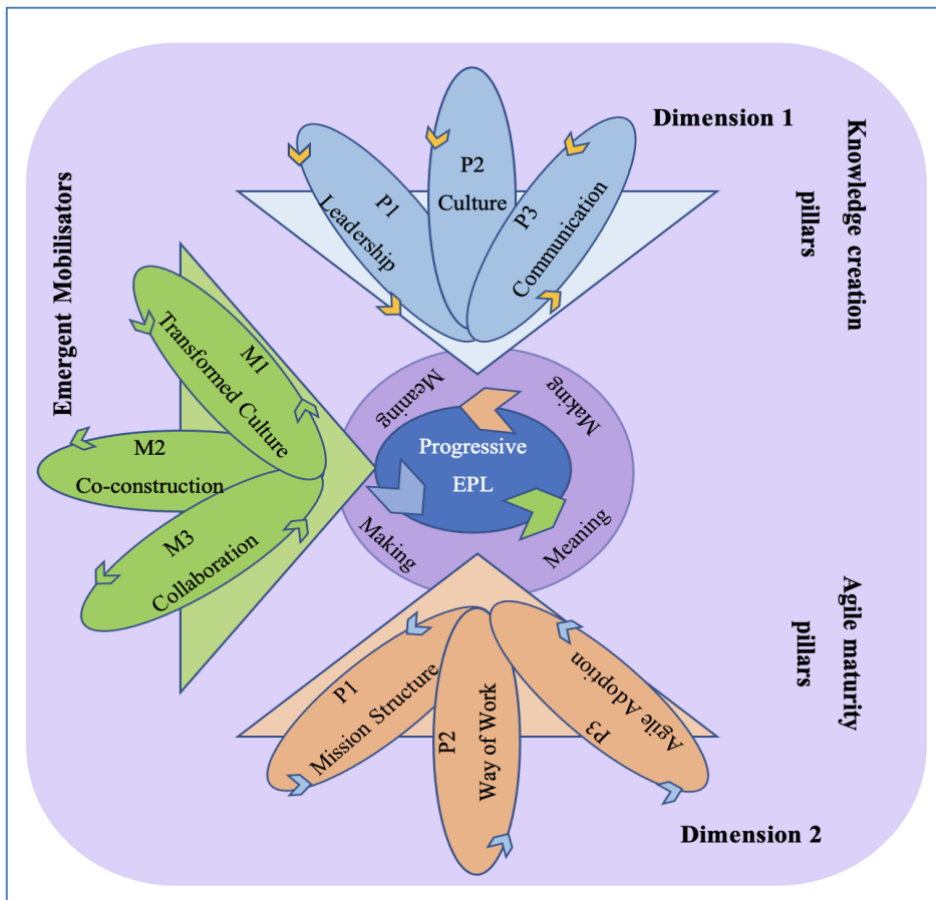
Figure 6.3.b EPL emergent mobilisers-digital, (The Writer, 2020).

In this new, EPL-enriched landscape, participative, directed mobilisers emerge that should be considered as integral to better serve continuous new meaning making journeys where knowledge workers where knowledge workers accelerate their productiveness by improving their established frameworks through co-constructed, collaborative new learning establishment within the collective outcome of a transformed SE EPL culture. Besides these participative, directed mobilisers, it could be an imperative to propose collaboration (M3), co-construction (M2) and a transformed SE culture (M1) in achieving a compelling SE purpose for the creation of innovative knowledge frameworks and the effective propagation of antifragility attributes as future anticipation.

These continuous learning mobilisers should involve all stakeholders and could demand alignment towards a meaning making, transformed SE culture that can be better investigated to exude the fundamental components for the endorsement of anticipated EPL meaning making expeditions. The transformational leadership capabilities could be encouraged to further define future cultural frameworks for the attainment of antifragile indicators as an advantage in navigating unprecedented challenges.

6.4.b Synthesis of Dimension 2-SE's ethos to knowledge proficiency

The present knowledge proficiency appears insufficient in fulfilling the requirements to meet current SE demands for the development of new knowledge. Creative techniques of cognition are requirement for optimal knowledge dissemination and propagation (Apgar *et al.*, 2016; Jackson *et al.,* 2015, Nonaka, 2017).

A coordination deprivation within the knowledge SE could impede the ability of knowledge workers to function consequentially; the conventional hierarchical organisation inhibits the attraction and retention of autonomous knowledge workers, who are required for continued performance and trading of useful, tacit new knowledge (Dalkir, 2017; Nurunnabi, 2017).

These future EPL explorative excursions could question whether transformational leadership serves a vital role in encouraging knowledge workers to become self-managing and self-led leaders (Elkington *et al.,* 2017; Paras, 2020; Von Krogh *et al.,* 2012). Current knowledge-based

organisation seems to be primarily command-oriented with supervisory knowledge managers controlling human capital formations and conserving the hierarchical control structures

Additional research could provide meaningful insights as propositional transformation to SE sustainability that could include the mobilising of collective commitments. These emerged M1-3 commitments should be socialised, mandated and steered by a new transformational leadership approach as actionable outcomes that transcend Agile meaning making as a strategic SE imperative for navigating future anomalies, e.g. Covid-19. In addition, the emerging knowledge equities could recapitalise on the prospective solutions that could position the progressive SE to become a problem-solving solution for the collective that anticipates the future.

M2 (co-determination) as a mobilising commitment necessitates the creation of an inclusive negotiation-centric platform for collective future anticipation, where it is important to drive the implementation of the future world of work. These co-determined knowledge schemas could catalyse the establishment of a transformational SE culture that promotes ownership and cooperation between all stakeholders and vested parties. This realisation of Agile meaning making embarkation and the instilment thereof as strategic driver positioned as a sustainable way of work requires understanding, investment and psychological ownership by all knowledge crafters and creators.

COVID-19 has directly compelled knowledge SEs to reassess their standing, mandate and readiness to become more proactively involved in navigating and mobilising antifragility capabilities and secure a sustainable SE future. These reflections could indicate a rethink and awareness regarding the essence and importance of life itself. The realisation and understanding that our learning landscape has changed should be the catalyst for knowledge openness, where knowledge socialisation and thought sharing improve unified EPL agency.

These systemic interconnections are depicted in Figure 7.4 (Annexure Epic 7.1) and 7.5 (proposed progressive EPL emerging framework) and could indicate a framework as a roadmap to mobilise jointly decided commitments to navigate how the future role players can be collectively encouraged to attain antifragility (AF) properties as an ecological paradigm for the future world of knowledge work. Figure 67.4, The Proposed progressive EPL emerging framework initiated and evolved in construction that is depicted by inclusion of the hand written accompaniment. Figure 7.5-The proposed progressive EPL emerging framework

initiated and evolved in construction that is depicted by inclusion of the hand written accompaniment.
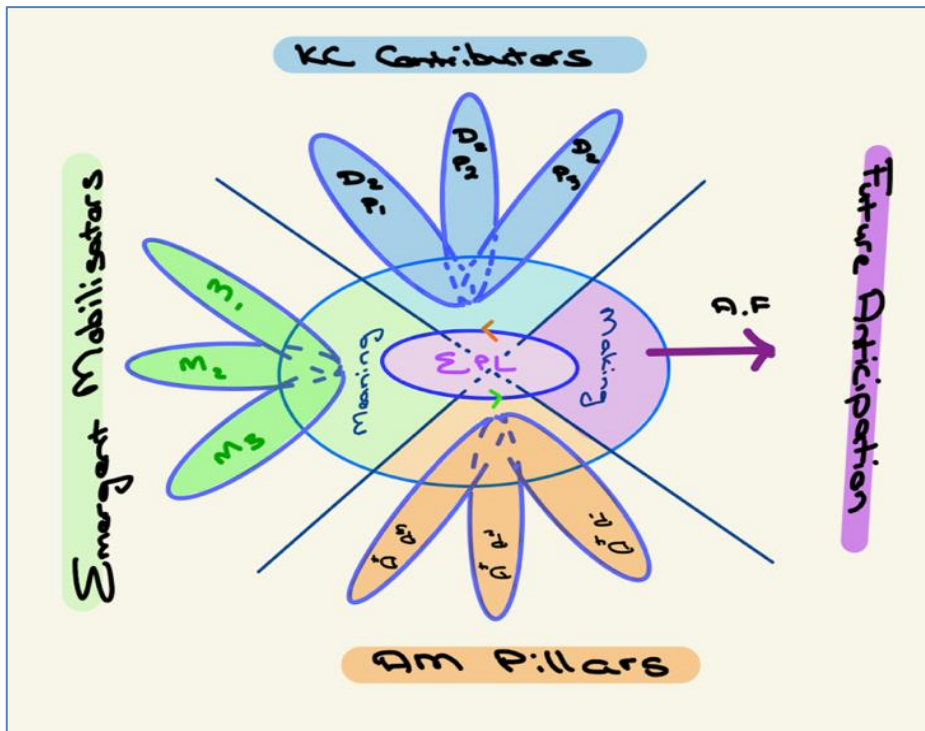
Figure 6.4-Proposed progressive EPL emerging framework-hand drawn, (The Writer, 2020).
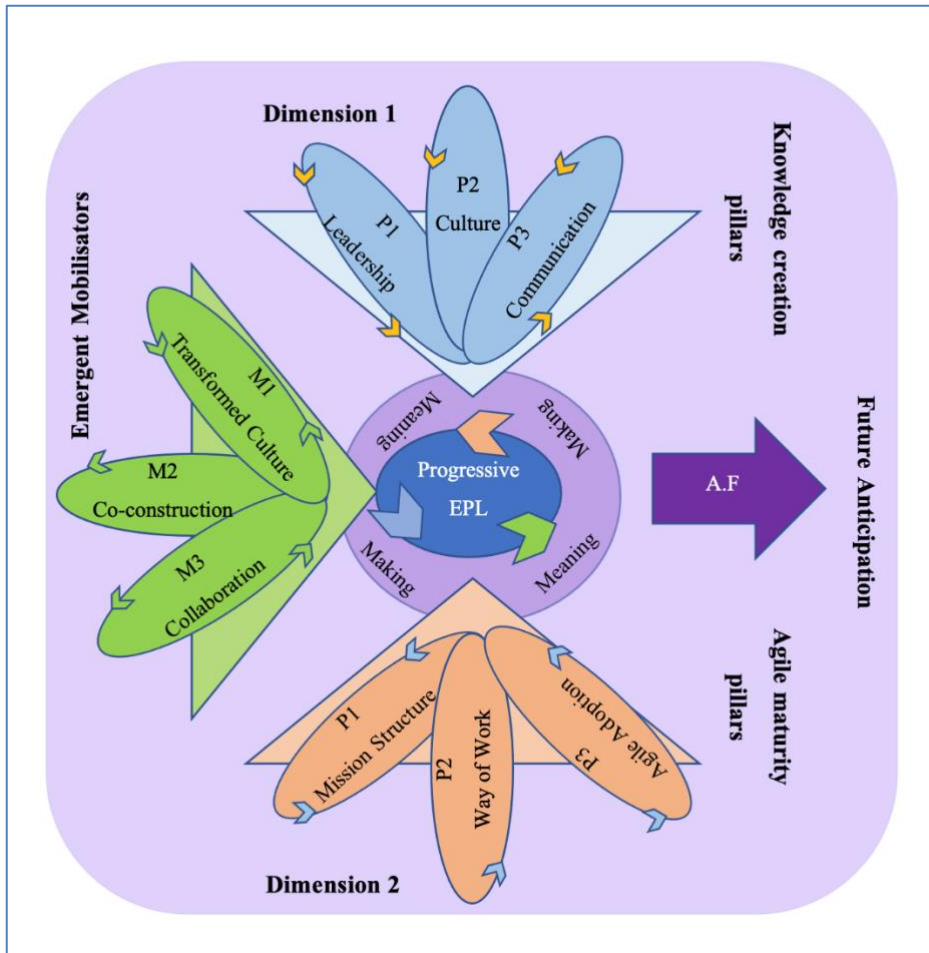
Figure 6.5-Proposed progressive EPL emerging framework-digital, (The Writer, 2020).

6.6 Future anticipation-Antifragility as an emerging education recommendation

According to Taleb (2012), the notion of antifragility proposes a state of accession where the mechanics of traditional cognitive establishments are transcended. This conception of antifragility builds on the Darwinian philosophy (Darwin, 1964), influenced by Bronowski (1973), and argues that growth and prosperity are gained through exposure to volatility, randomness, disorder, stressors, risk and uncertainty.

These insights are echoed by Aven (2015) and Equihua *et al.* (2020) which could have a particular resounding effect as future anticipation in the context of postmodern meaning making on the South African education curriculum as a valuable academic contribution to development and design. This reasoning is based on the urgent precondition of a novel learning accession (see [Annexure Epic 2-2.1 The EPL accession](#)) that could be encapsulated as antifragility in EPL as possible future anticipation. This unprecedented, new landscape has created an urgent need for all SEs', especially the formal education institutions, to rethink the world of learning and knowledge creation. Here an organic postmodern curriculum is required, as contemporary knowledge designs have become obsolete and outmoded in the presence of complexity and chaos.

The pursuit and embracement of incremental innovative learning systems exuding academism founded on mechanistic robustness renders outcomes ineffectual in the present Covid-19 educational landscape. Bauman (2013) alludes to the sentiment of "the society of the spectacle" (Debord, 2012), stating that we now find ourselves in an "interregnum"-a period in which A time in which the old ways of working and the old learned or established ways of thinking are no longer appropriate for the present. That being said, innovative ways of alleviating future challenges and practices better adapted to new environments have not yet been conceived. Hence the dire need for "liquid modernity" (Caldwell and Henry, 2020; Bauman, 2013) and the urgency and importance for EPL to emerge and position itself as a pan disciplinary insight for the next generation of learning facilitation.

This educational, liquid modernity demands a participative knowledge embodiment within a personal responsibility perspective characterised by ownership and stewardship as co-constructive initiators for new EPL explorations. The EPL progressive framework transcends

the traditional knowledge establishment criterion through the application of intellective influencers (Dimensions 1 and 2) as a point of departure, complemented by the inclusion and merging of human ontogeny (M1-3). The actualisation and application of EPL as a malleable, principle-based framework could promote knowledge that is specifically crafted and moulded for the future of new learning creation designs. It is recommended that these newly crafted EPL progressions are developed, designed and encapsulated as a formal reformist curriculum for knowledge consumers.

The EPL futuristic vision of inclusivity and ecological self-writing (Foucault in Hall, 2001) embraces and welcomes environmental turbulence as a new education impetus. The progressive EPL emerging framework should position itself as a catalyst enabling ideation, formulation and explorative construction of the feasible next grand narrative (Angel-Perez, 2016). Here, the newly designed curricula position the future knowledge landscape in readiness for the "el Manana" generation's anticipated destination of turmoil and confusion (Guerrero Iraola, 2020). The persona of antifragile EPL enacts the potential to transcend the current educational theorem design to progress and flourish as an ecological solution for the future of Agile learning facilitation.

As transformational activities in business transcend beyond process bounds, they have an impact on knowledge workers, who are the enablers of organizational renewal. The usefulness of retrospectives and reflection enables us to draw lessons from our past experiences and may help us prepare for future transformative undertakings. The progressive EPL model is by no means static at this point and should change via practical application, from which more analyses and insights may be gathered, allowing the existing EPL framework to be verified while also serving as a launching pad toward the construction of a more progressive model

It has become clear that Agile practitioners and leaders are currently dealing with the fact that they do not have enough information to make sustainable meaning. Agile practitioners present evidence that engages and involves groups of people amidst systemic processes and diverse social units and communities of practice within leadership boundaries to sub indicate interpretive and empathetic meaning making. The future of Agile learning facilitation could be nested in our ability as knowledge creators to embrace and welcome disruptions, imperfections and external influences impacting on the nuances of new Emergent Professional Learning.

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Annexures

Annexure A-Complementary meaning making to the research introduction

Annexure A1-The Babylonian epic of creation

Order and chaos are discussed at length in ancient mythology, which shows that the human distinction between order and chaos is as old as mankind. Order arises out of the mysterious forces of chaos, which it then vanquishes. For example, in the Enuma Elish, the Babylonian epic of creation, the world began under the reign of Tiamat, the mother of all things. In Tiamat's world, "none bore a name, and no destinies were ordained." After several generations, Tiamat's godchildren appointed a champion to seize control, Marduk. Marduk not only defeated his ancestor, but "split her up like a flat fish into two halves" that became heaven and earth. He then proceeded to order the universe in finer detail (Kurt and Snowden, 2003).

Epic 1-Complementary meaning making

Annexure Epic 1-1.1-Multimedia contribution 1–EPL: the WHY

EPL: the Why-Video 1 (The Writer, 2019, February 10) deals with the rationalisation of investment of oneself, the justification of and explanation for choosing this particular research study.

I find myself as an individual with thought (EPL: the Why , The Writer, 2019, compiled February 2020).

Annexure Epic 1-1.2-Multimedia contribution-Momentum Way of Work

An 18-month interview about Agile as a way of work in the Momentum Business Technologies Solutions division.
Momentum Way of Work, The Writer, 2013

Annexure Epic 1-1.3-Multimedia contribution-Proposal submission (2017)

As research proposal submission comments, (Annexure 1.1-Research proposal comments) Professor Wasserman (proposal defence committee evaluator) recommended that each of the five lenses could be dissociated and serve as autonomous, independent studies.
Video 1.2-Proposal submission 2017., the Author 2017.

Annexure Epic1-1.4-Momentum Metropolitan Ltd. Holdings ownership structure (https://www.momentuminv.co.za/home/our-ownership-structure, accessed 10 September 2020).
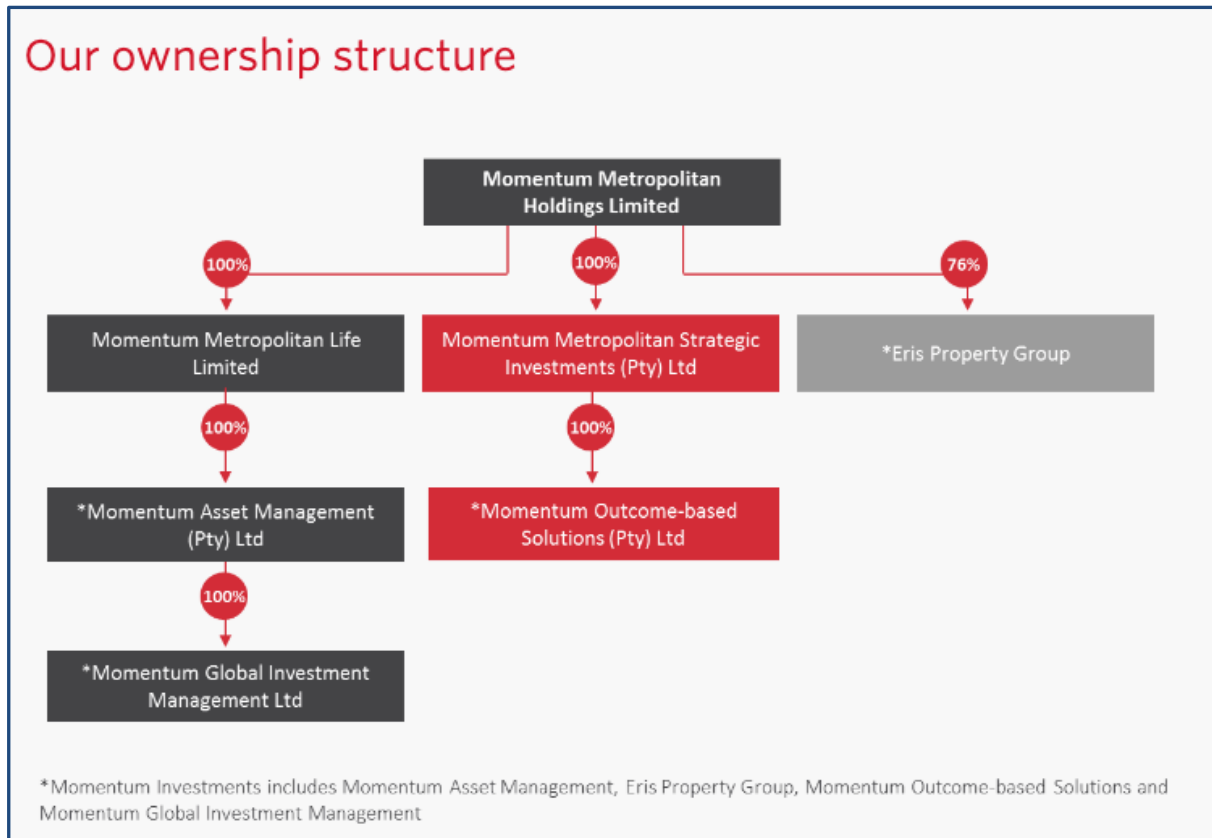
Annexure Epic1-1.5 Multimedia, Momentum Way of Work Testimonial (The Writer, 2015, accessed March 2019).

Annexure Epic 1-1.6-EPL: The Introduction, EPL Introduction (The Writer, 2018).

Annexure Epic 1-1.7-EPL Genesis and construction, the video EPL Genesis and Construct (The Writer, 2018).

Epic 2–Complementary insights to epistemic access

Annexure Epic 2-2.1-[The EPL Accession, multimedia (The Writer, 2017)](#)

I offer an alternative lens of self-determined objectivity as an approach to the EPL accession to counter Pavlovian predisposition.

[The EPL Accession trailer](#).

Annexure Epic 2-2.2-Welcome 2 Agile, multimedia (The Writer, 2017)

Agile as a way of work in the professional workplace is discussed as an introduction. See Annexure Epic 2-2. in [Welcome to Agile?](#) (The Writer, 2019; accessed 17 February 2019).

Annexure Epic 2-2.3-From Agile origins to meaning making

The origin of Agile varies, depending on the authors consulted. Bach, 2017; Cockburn, 2006; Davies, 2013; Franklin, 2014; Loss and Crave, 2011; Kaltnecker, 2014 place it between 1997 and 2003. The Agile Alliance (2018) places it in 1968 (see Annexure A-Map to Agile Practices Timeline-an information technology perspective (Agile Alliance, 2018). Industrial manufacturing systems have been credited to it; Gunneson, 1996; Womack and Jones, 1990 trace the initiation of facets of Agile praxis back to the 1980s and through the systematic introduction of Agility and Lean Manufacturing (Gunasekaran, 2001; Riss and Johansen, 2001; Goldman, Preiss, Nagel, and Dove, 1991).

Agility and Lean Manufacturing mechanisms incorporated LEAN, Kaizen and Just-in-Time principles for the entire supply chain (Iyer, Seshadri and Vasher, 2009). Total Quality Management (TQM) principles (Demming, 1986; Gunneson, 1996; Bisgaard, 2007) with an earlier prominence (1950's/1960's) which initiated post World War II (Human and Chakraborti, 2010; Demming, 1986; Juran, 1988; Thompson and Koronacki, 2002;) and included employee empowerment focus (Riss and Johansen, 2001; McElwee and Warren, 2000; Nguyen and Chau, 2017). The Lean Manufacturing concept was initially demonstrated in the International Motor Vehicle Program (IMVP), which represents the majority of automotive assembly plants in North America, Japan and Europe (Iyer *et al*., 2009; Riss and Johansen, 2001) emphasised quality, performance, flexibility, productivity and elimination of

waste. This practice, in conjunction with core competence and critical technology (Kragh-Schmidt and Johansen, 1998) remains the norm in retaining a competitive positioning in the contemporary motor manufacturing industry (Riss and Johansen, 2001).

From a canonical constructivist-experiential view, I believe I can substantiate that facets of what we know as Agile praxis today were practised and consummated as early as 1600-1046 BC. My corroboration is founded upon the Chang Dynasty, which displayed the earliest recorded Chinese garden (Keswick and Jencks, 1978; Girardot, Miller, and Liu, 2001). Kuck and 岩宮, 武 (1980) state that to maintain the prestigious, distinguished gardens with flawless perfection, the garden keeper would restrict the number of visitors by allocating a predefined number of visiting sticks. To this day the Imperial garden in Tokyo (Schnetzler, 2018) grants access based on a work-in-progress (WIP) system. This practice is also referred to by Keswick and Jencks (1978) and Schnetzler (2018), who elaborate on the practice by noting that the gardens were maintained by "few monks" (Keswick and Jencks, 1978). The work-in-progress practice embodies the core of Agile practice, ensuring value delivery through the creation of "flow" (Leopold, 2017; Kaltenecker, 2019).

Annexure Epic 2-2.4–Gleick's butterfly effect

Gleick (2011) characterised the butterfly as follows: "In weather, for example, this translates into what is only half-jokingly known as the Butterfly Effect – the notion that a butterfly stirring the air today in Peking can transform storm systems next month in New York" (p.8).

Annexure Epic 2-2.5-The Cynefin model (Snowden in Selgert, 2020)
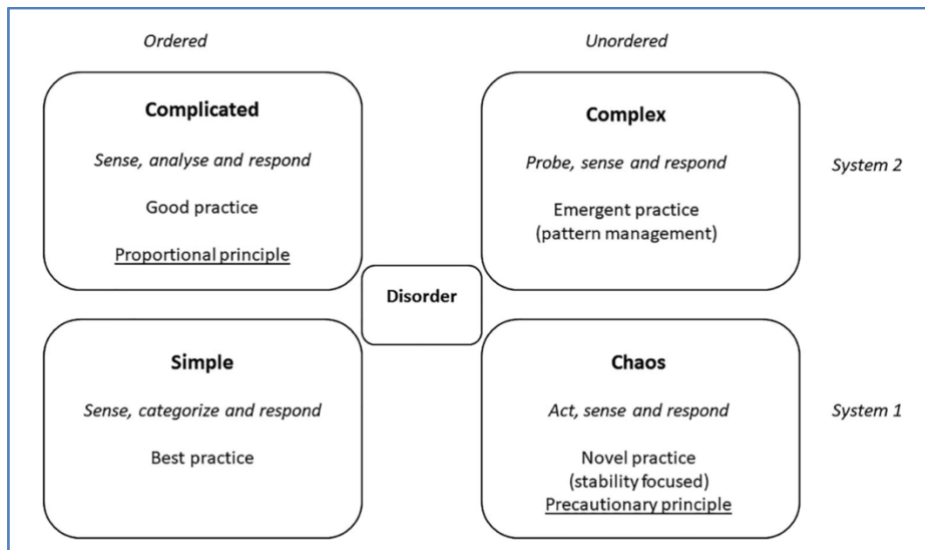
Epic 3–Complementary insights to meaning making design

Annexure Epic 3-3.1-Collated meaning making research approach (Johnson in Hull, 2004:45; Joyner *et al.*, 2018).

In answering the research question and detailed sub-problems, the researcher needs to gather and analyse information. According to Johnson (in Hull, 2004:45), research is a systematic and focussed enquiry that reaches beyond generally available information in order to obtain specialised and detailed knowledge, which provides a basis for analysis and comment. Hull provides four key issues regarding research:

- Research should be focussed, not so general
- Research is systematic: there should be a structured organised approach to the problem.
- Research should uncover information that is not readily available.
- Research should provide a basis for analysis and comment.

Hull (2004:45) views research methodology as the philosophical basis of research and explains that the research methodology acts as a control mechanism for study elements such as data collection and arrangement. Mnkandla (2005) defines methodology as the processes, principles and procedures by which we approach problems and seek answers. The focus of their discussion highlights that everything we do, our assumptions, interests and goals are greatly influenced by the methodological procedures we choose. Mnkandla (2005:42) furthermore defines a paradigm as the entire constellation of beliefs, values, techniques and theories shared by the members of a scientific community. This is echoed by Jankowicz (in Mhulungu, 2004), who defines research methodology as the analysis of, and rationale for, the particular method or methods used in a given study. Mnkandla (2005) concludes that a paradigm therefore serves to define what questions should be asked, how they should be asked and what rules should be followed in interpreting the answers obtained. See figure 4.1-EPL research approach, a generic approach to attaining insight into the EPL study.
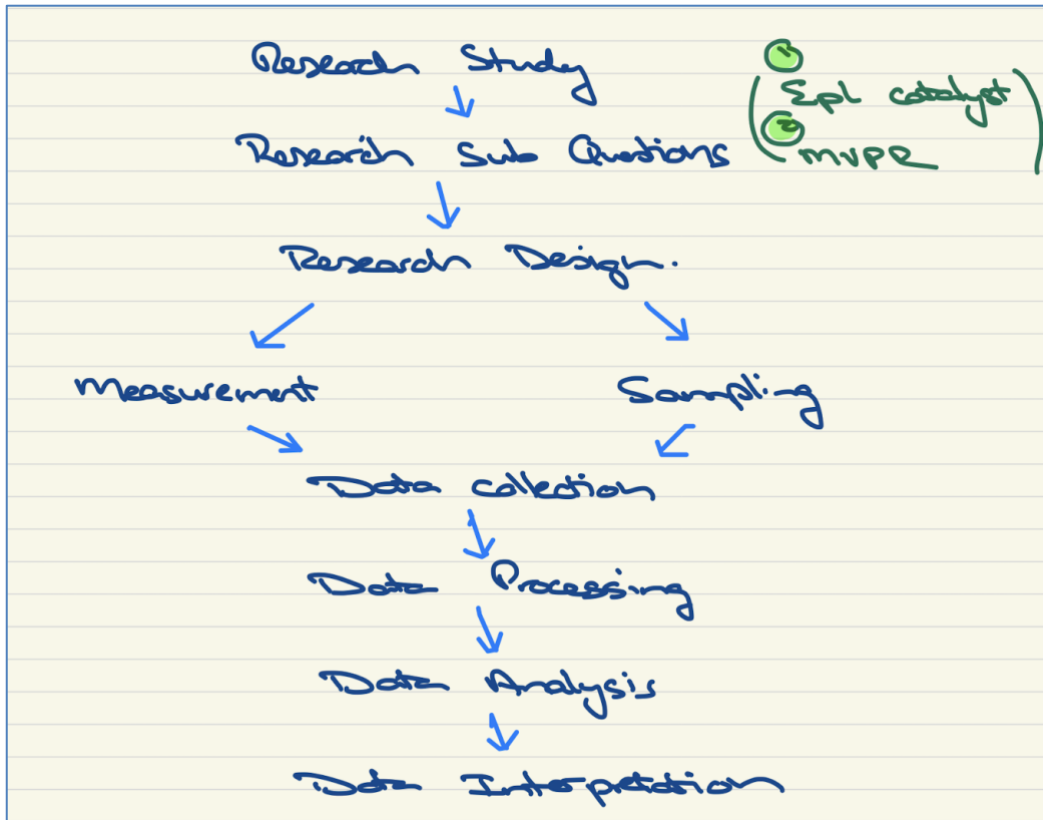
Figure Annexure 3.1-Collated meaning making research approach

Annexure Epic 3-3.2-The Babylonian epic of creation

Order and chaos in antiquity highlights that the human distinction between order and chaos goes back to an abundant presence in mythology, in which order arises out of (and thus requires) and then vanquishes (and thus destroys) the mysterious forces of chaos. As example, in the Enuma Elish, the Babylonian epic of creation, the world began under the reign of Tiamat, the mother of all things. In Tiamat's world, "none bore a name, and no destinies were ordained." After several generations, Tiamat's godchildren appointed a champion to seize control, Marduk. Marduk not only defeated his ancestor, but "split her up like a flat fish into two halves" that became heaven and earth. He then proceeded to order the universe in finer detail (Kurt and Snowden, 2003) ...the Babylonian epic of creation, the initiation and origin of meaning making.

Annexure Epic 3-3.3-Participatory co-constructive action research

The compounded benefit of the participatory co-constructive action research I envision should be an indent in transgression in development of the current knowledge economy by undertaking meaning making journeys as a collaborative co-constructive realisation of the value of intangible assets, i.e. knowledge work and new EPL formation journeys.

In this PCAR approach, a two-pronged commitment presents itself: to study a system, using scientific methods, and to concurrently collaborate with members of the system in changing the system from an undesirable to a desirable state. Accomplishing this dual goal requires the active collaboration of researcher and client, and thus AR stresses the importance of co-learning as a primary aspect of the research process (Gilmore, Krantz, Ramirez, 1986).

Annexure Epic 3-3.4-Distinction between inductive and deductive research

See Figure 3.3–Illustration of thematic research reasoning (see video Differences between Inductive and Deductive Research; multimedia contribution (Lee *et al.,* 2019), accessed 19 April 2020:18:46).
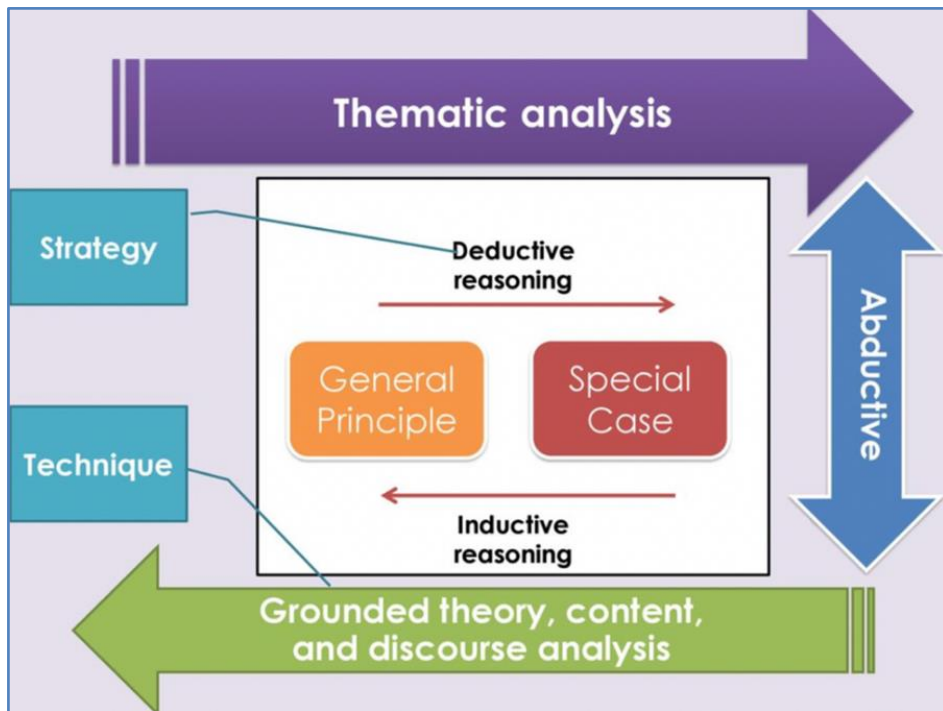
Figure 4.4 Merging Deductive and Inductive Logic (Adapted from Lee *et al.,* 2019).

A comparative analysis between meaning making and the 1967 Beatles hit Strawberry Fields Forever. Multimedia contribution; https://www.dropbox.com/s/79a6cxt5zj5scev/Strawberry%20Fields%20Forever%20-%20%20Restored%20HD%20Video.mp4?dl=0, accessed, 14 May 2018; 10:06).

Parallels drawn and observations: Strawberry Fields Forever

0:00:00 – 0:00:10-Symbolism of the tree as inception of life and growth. Similarly, EPL resembles novel thinking and modish meaning making capability and facilitates understanding, which a catalyst for new growth should be. This conception of advancement could be personal, communal or societal.

0:00:11-0:00:28-"Let me take you down, Cause I'm going to Strawberry Fields Nothing is real and nothing to get hung about". These lines represent a return to familiarity as John Lennon reminisces about playing in the garden of the Salvation Army house named "Strawberry Field" (Daily Telegraph, 2005). This reminds of human behaviour, where we as knowledge creators have to guard against returning to familiarity, as true growth occurs outside comfort areas.

0:00:29-0:00:53-This section addresses the following humanistic facets of the EPL journey:

a)   "Living is easy with eyes closed, misunderstanding all you see", refers to "ignorance of Man" with the sole purpose of "being right' in advocating non-benevolent man-made structures and outmoded practices.

b)   0:00:39-The transformation of Ringo Star, walking hunched and morphing into an elder recalls the notion of life as a journey; EPL displays denaturing capabilities while producing new artefacts (…or not), based on the individual's personal choice.

c)   0:00:44-"It's getting hard to be someone, but it all works out, it doesn't matter much to me" – represents a distinct decision of distancing between life's turbulent journey and being mindful of oneself in a state of tranquillity, acceptance and rest in new meaning making.

0:00:54-0:01:06-I believe that Paul McCartney's leap into the tree (0:00:59), and then adjusting and tweaking levers for an alternate, hopefully better outcome resonates as a metaphor for the

EPL meaning making process. The EPL meaning making passage is founded on Demming's (1986); Plan, Do, Check, Act (PDCA) model, the rationale being the introduction of a cadence with quick feedback loops, to constantly reflect and act on planned progress, to adapt and secure a potentially better outcome by fine tuning EPL journey triggers.

0:00:02-0:00:04; 0:00:59-0:01:17-I feel that the lever adjustment occurring in red light present above Paul McCartney is a metaphor for being mindful of "human" representation and presence. My association is based on the Herrmann Whole Brain model (Cloete and du Toit, 2013), where the colour red is an exhibit of human-centeredness. The relationship of human focus with EPL manifestation resides within the differentiating craftsmanship capability, artistry and artefact, which could only be accomplished by being truly, honestly human. Human-centred leadership attributes capacitate an enabling organisational culture in fostering one's individual relationship to oneself; the degree of self–mastery, self–leadership, and self–management (Parker, Holesgrove, and Pathak, 2015) in the quest for new meaning making.

Annexure Epic 3-3.6 Development of the engine for the scientific method: Deductive and Inductive Logic

Galileo Galilei (1564-1642) is considered by many to be the father of modern science. Galileo made original contributions to the science of motion and strengths of materials by combining designed experiments and mathematics (Hamilton, 1990; Juran, 1992; Steffens, 2006). Conducting designed experiments is a cornerstone of science and the scientific method. These experiments were documented in Galileo's last book, The Discourses and Mathematical Demonstrations Relating to Two New Sciences. Moen, Nolan and Provost (1991:11) support the Galileo endeavour and highlight that Galileo carried out experiments on the strengths of materials and the study of objects in motion, establishing a major part of what we know as the scientific method.

Dewey (1916) compares Galileo and Francis Bacon (1561-1626), who could not be more different. Galileo was first and foremost a scientist. Bacon made his contribution as a philosopher who was very concerned about the manner in which knowledge is developed. Bacon believed that the generation of knowledge needs to follow a planned structure. Science at the time depended on deductive logic to interpret nature. Bacon insisted that the scientist

should instead proceed through inductive reasoning, from observations to axiom to law. Bacon's contribution completed the interplay between deductive and inductive logic that underlies how we advance knowledge (Dewey, 1916; Steffens, 2006). Figure 4.2: Merging Deductive and Inductive Logic describes this movement from theory to observation and back again.

Kant's book, Critique of Pure Reason (Dewey, 1916, 1997, Menand, 2001) was probably the source of the term "pragmatism."

Menand quotes Kant:

"Such contingent belief, which yet forms the ground for the actual employment of means to certain actions, I entitle pragmatic belief...that is firm belief—is betting...Thus pragmatic belief always exists in some specific degree, which, according to differences in the interests at stake, may be large or small." (Menand, 2001)

John Dewey Delivers Pragmatism to the 20th Century: Furthers the Need for Experiments. Dewey notes that Pierce credits Kant with the distinction between pragmatic and practical, where the latter term applies to moral laws (which Kant regards as a priority), whereas the former term applies to the rules of art and technique which are based on experience. Dewey (1916) elaborates further on the thinking of Pierce. As a logician he was interested in the art and technique of real thinking, and especially interested, as far as the pragmatic method is concerned, in the art of making concepts clear or of construing adequate and effective definitions in accord with the spirit of the scientific method.

While the pragmatist school of philosophy was founded in the 19th century, a follower of these founders would become paramount in the philosophy of how we learn and act on our beliefs in the world. John Dewey (1859-1952) became a leading proponent of pragmatism, and his works would influence philosophy, education, religion, government and democracy (Moen, Nolan, 1991). Moen *et al*. conclude Dewey's contribution of pragmatism by defining the scientific experimental method as a trial of ideas; "hence even when practically—or immediately— unsuccessful, it is intellectual, fruitful; for we learn from our failures when our endeavours are seriously thoughtful" (Dewey, 1916).

Steyn (2018) argues that a compelling reason why a majority of interventions fail when applied in real world settings is that they do not account for contextual factors (Steyn, 2018), such as resource constraints and fit of the intervention with existing culture and concerns. Action research engages context directly through cooperation between investigators and frontline workers, referred to in this study as knowledge workers. While this results in inconsistencies in the implementation of an intervention, it ensures that the intervention is responsive to problems experienced in real life scenarios. This notion is supported by Kemmis and Mc Taggart (1992), 2013), who note that action research involves learning – not abstract, but actual practices of particular people in particular places, leading to real and material changes in what people do, how they interact with the world and with others, and what they mean and what they value. This underscores the ability to engage and demonstrate practical workplace scenarios where the participation of co-constructor's rationale for AR employment, application and selection has an impact.

Annexure Epic 3-3.9-Co-contributor scope
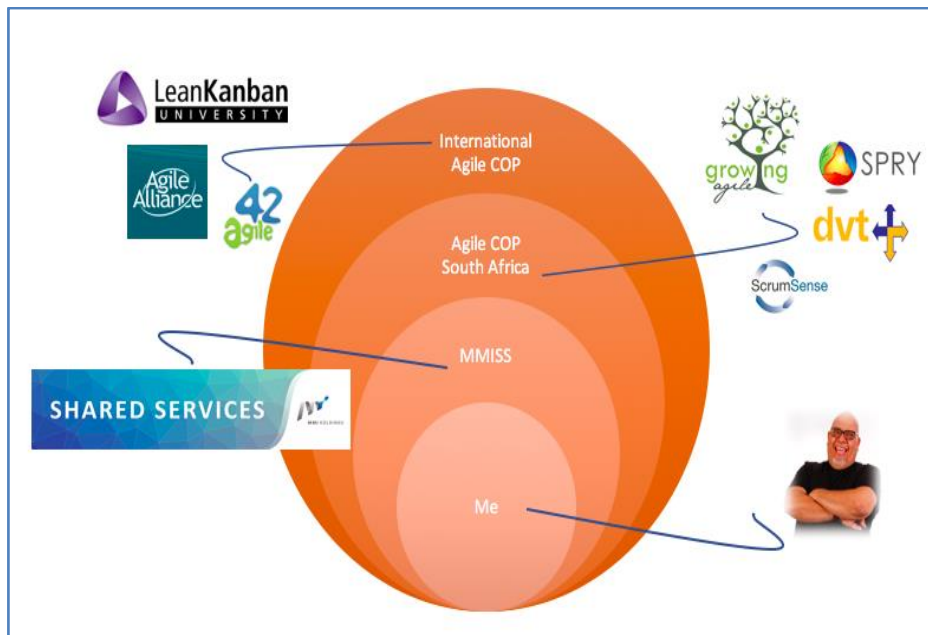
Annexure Epic 3-3.10 Parallels between VAR and Deming's PDCA model for improvement
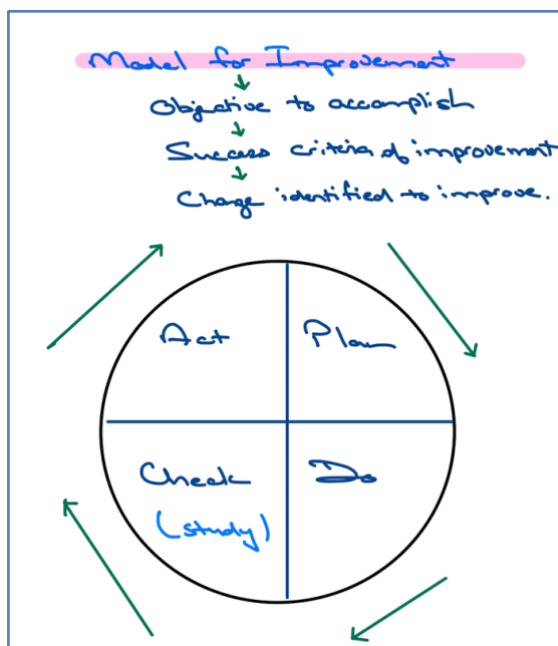
Figure 3.5–Deming's PDCA model (Adapted from Moen and Nolan, 1991)

The selection of action research with specific focus on PCAR as preference is based on its three advantages (Singer, 2013):

- Its responsiveness to context, as professional, work-based meaning making should be experienced first-hand with practicing co-creators/knowledge workers sharing their real-life experience.

- Its ability to engage and demonstrate practical workplace scenarios where the impact and participation of co-constructors can manifest as benefit to Momentum Metropolitan's value proposition.

- Its ability to extend inclusivity to co-creators/knowledge workers in serving as motivation based on the Hawthorne effect, where involvement facilitates implementation and promotes sustainability.

In this research study the generic principles and process of Lean Coffee will be applied as is a lightweight inclusive structure for an informal gathering where the participants decide the agenda at the start of the gathering in a just-in-time way. The purpose is to have many shallow discussions about a broad range of topics instead of deeply discussing only one or two topics. Figure 4.5 depicts four random Lean Coffee sessions hosted by me (permission was obtained from participants to display photos).

Lean Coffee was originally developed to discuss Agile/Lean coaching, which serves as preferred mechanism for exploring the five lenses of Agile learning. My intention is to initially host two individual Lean Coffee sessions each addressing the lenses respectably. Rationale in underscoring this approach is to extricate a practical approach to the workplace Agile learning challenges. Agile learning challenges should manifest as random and voluntary as contributors reflect on their individual work place environments in which the problems, opportunities or situations of interest are likely to reside. In addition, salient factors should emerge as variables found might be of relevance to the research.

Figure 3.5-Typical Lean Coffee framework (adapted from Agile Alliance 2018; Kaltenecker 2019).

Epic 4-Complementary insights to data presentation

Annexure Epic 4-4.1-Learning creation survey

All questions are duplicated in Annexure Epic 4-4.2-How prone is your organisation towards meaning making as a process for learning?

Questionnaire link: https://docs.google.com/forms/d/1IyOeVQldigLaQu2cOqBzbLcBPty-fuPOHkRkBV40eRs/edit

Learning creation in the Agile workplace Questionnaire

We would like to solicit your insight and assistance in the needed data and information of my study as stated above. In view of this, may I please request to complete the following questionnaire.

This questionnaire asks you about your Learning and Agile experience in your current workplace. For each question, please select (tick) in the one box that best describes your answer. Please answer the questions as you feel best. There are no right or wrong answers.

This is a 95 question questionnaire with the option to include a comment after each section. There are 6 sections. The 6 sections we refer to as pillars as they underpin and support Learning creation and Agile maturity.

It is recommended to complete the 95 questions in a single session which should take approximately 40 minutes.

We have high regard for your privacy so, if you prefer to stay anonymous, please enter 1@a.co.za in the email field.

If you have any queries, questions, or comments please feel free to contact me.

Thanking you for your time and participation

Henk
email4henkviljoen@gmail.com
+27 82 8050 139

Email address *

Valid email address

This form is collecting email addresses. Change settings

After section 1   Continue to next section

Section 2 of 4

About Yourself

The purpose of this section is to obtain an insight with regard to Agile maturity and Learning creation trends within different industries and levels of employment.

In the "About Yourself" we ask you 2 questions, if you are uncomfortable to answer please choose "Prefer not to answer" as your selection.

Question 1: What industry are you're currently working in? *

1. Education

2. Energy

3. Financial Industry

4. Food

5. Health Care

6. Hospitality

7. Industrials

8. Information Technology

9. Marketing

10. Materials

11. Real Estate / Accommodation

12. Telecommunication Services

13. Utilities

14. Other

15. Prefer not to answer

:::

Question 2: What is your position in your company? *

1. Administrative Staff

2. Consultant

3. EXCO

4. Junior Management

5. Lower management

6. Middle Management

7. Researcher

8. Self-employed/Partner

9. Skilled Labourer

10. Specialist

11. Student

12. Supervisor

13. Support Staff

14. Temporary Employee

15. Trained Professional

16. Upper Management

17. Prefer not to answer

After section 2   Continue to next section   ▾

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Learning Creation

In this section, we address and gain insight into the Learning-creating capacity of your organisation. We scrutinise 3 sections which include:

Pillar 1i - Leaderships role in learning creation

Pillar 1ii - Organisation's learning creation culture

Pillar 1iii - Collaboration in learning creation

Thank YOU very much! &, Warp speed ahead !!

Image title

Learning Creation

Pillar 1i - Leaderships role in learning creation

Here we ask your insight and real-life experience regarding your Organisations leadership's influence in creating a learning environment.

This section has 13 questions.

Please only select a single tick per question.

In completion, please do complete the "Comment" free text section as we appreciate your thoughts.

Leadership role *

	Strongly Disagree	Disagree	Agree	Strongly Agree
P1.i.2. My Leader k...	☐	☐	☐	☐
P1.i.3. My Leader a...	☐	☐	☐	☐
P1.i.4. My Leader e...	☐	☐	☐	☐
P1.i.5. In my Organi...	☐	☐	☐	☐
P1.i.6. My Leader tr...	☐	☐	☐	☐
P1.i.7. The objectiv...	☐	☐	☐	☐
P1.i.8. The objectiv...	☐	☐	☐	☐
P1.i.9. I am aligned ...	☐	☐	☐	☐
P1.i.10. My Leader ...	☐	☐	☐	☐
P1.i.11. I trust that ...	☐	☐	☐	☐
P1.i.12. The Organi...	☐	☐	☐	☐
P1.i.13. I trust that t...	☐	☐	☐	☐

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Pillar 1ii - Organisations Learning creation culture

Here we ask your insight and real-life experience regarding your Organisation's culture in creating a learning environment.

This section has 24 questions.

Please only select a single tick per question.

In completion, please do complete the "Your comment" free text section as we appreciate your thoughts.

:::

Organisation's culture *

	Strongly Disagree	Disagree	Agree	Strongly Agree
P1.ii.1. I enjoy diver…	☐	☐	☐	☐
P1.ii.2. I can clearly …	☐	☐	☐	☐
P1.ii.3. I have acces…	☐	☐	☐	☐
P1.ii.4. I am able to …	☐	☐	☐	☐
P1.ii.5. Opportunitie…	☐	☐	☐	☐
P1.ii.6. I am enthusi…	☐	☐	☐	☐
P1.ii.7. I am able to …	☐	☐	☐	☐
P1.ii.8. My Organisa…	☐	☐	☐	☐
P1.ii.9. Each team …	☐	☐	☐	☐
P1.ii.10. I am motiv…	☐	☐	☐	☐
P1.ii.11. I believe st…	☐	☐	☐	☐
P1.ii.12. The memb…	☐	☐	☐	☐
P1.ii.13. The whole …	☐	☐	☐	☐
P1.ii.14. I have the …	☐	☐	☐	☐
P1.ii.15. I take the o…	☐	☐	☐	☐
P1.ii.16. My compa…	☐	☐	☐	☐
P1.ii.17. I utilise the…	☐	☐	☐	☐
P1.ii.18. Trust and r…	☐	☐	☐	☐
P1.ii.19. I am willing…	☐	☐	☐	☐
P1.ii.20. Staff are e…	☐	☐	☐	☐
P1.ii.21. I am perso…	☐	☐	☐	☐
P1.ii.22. My work te…	☐	☐	☐	☐
P1.ii.23. I feel my w…	☐	☐	☐	☐
P1.ii.24. My learnin…	☐	☐	☐	☐

Pillar 1iii – Collaboration in Learning creation

Here we ask your insight and real-life experience regarding collaboration and the effect it has on learning to happen in your Organisation.

This section has 16 questions.

Please only select a single tick per question.

In completion, please do complete the "Your comment" free text section as we appreciate your thoughts.

Collaboration *

	Stronly Disagree	Disagree	Agree	Strongly Agree
P1.iii.1. Senior man…	☐	☐	☐	☐
P1.iii.2. I take the le…	☐	☐	☐	☐
P1.iii.3. I initiate tw…	☐	☐	☐	☐
P1.iii.4. The commu…	☐	☐	☐	☐
P1.iii.5. I frame, org…	☐	☐	☐	☐
P1.iii.6. I am able to…	☐	☐	☐	☐
P1.iii.7. There are s…	☐	☐	☐	☐
P1.iii.8. I can share …	☐	☐	☐	☐
P1.iii.9. I have the c…	☐	☐	☐	☐
P1.iii.10.There is ali…	☐	☐	☐	☐
P1.iii.We have an ac…	☐	☐	☐	☐
P1.iii.12.I trust that …	☐	☐	☐	☐
P1.iii.13.There is ad…	☐	☐	☐	☐
P1.iii.14. It is easy t…	☐	☐	☐	☐
P1.iii.15. The object…	☐	☐	☐	☐
P1.iii.16. My team e…	☐	☐	☐	☐

Please comment on the above

Long answer text

After section 3   Continue to next section   ▾

Agile Maturity

Agile maturity is the 2nd pillar under scrutiny in this study. In this section, we look at and gain insight into the state of your Organisation's Agile maturation. The Agile maturity state is determined in addressing the following 3 sections:

Pillar 2i - Organisation's mission and structure underpinning Agile as Way of Work

Pillar 2ii - Agile as Way of Work

Pillar 2iii - Organisation's Agile adoption journey

We initiate this conversation with 3 questions in attaining insight as to your application of Agile as Way of Work

Thank YOU...Timewarp ahead !!

About My Agile *

	Yes	No
We, as Organisation utilise Agile a…	○	○
We apply Agile frameworks like SC…	○	○
My Organisation has embarked up…	○	○

Image title

Agile Vision, Mission and Leadership

Pillar 2i – Organisation's mission and structure underpinning Agile as Way of

Here we ask your insight and real-life experience regarding your Organisation's mission and vision with a particular focus on Leadership's support of Agile as a Way of Work.

This section has 13 questions.

Please only select a single tick per question.

In completion, please do complete the "Comment" free text section as we appreciate your thoughts.

Pillar 2i - Organisation's mission and structure underpinning Agile as Way of

Here we ask your insight and real-life experience regarding your Organisation's mission and vision with a particular focus on Leadership's support of Agile as a Way of Work.

This section has 13 questions.

Please only select a single tick per question.

In completion, please do complete the "Comment" free text section as we appreciate your thoughts.

Leadership role *

	Strongly Disagree	Disagree	Agree	Strongly Agree
P2.i.1. The Organis…	☐	☐	☐	☐
P2.i.2. The Organis…	☐	☐	☐	☐
P2.i.3. There is a cl…	☐	☐	☐	☐
P2.i.4. Leaders hav…	☐	☐	☐	☐
P2.i.5. The strategie…	☐	☐	☐	☐
P2.i.6 Agile initiativ…	☐	☐	☐	☐
P2.i.7 Agile team mi…	☐	☐	☐	☐
P2.i.8 Leadership o…	☐	☐	☐	☐
P2.i.9 Leadership li…	☐	☐	☐	☐
P2.i.10 Agile is key i…	☐	☐	☐	☐
P2.i.11 We as Orga…	☐	☐	☐	☐
P2.i.12 Leadership …	☐	☐	☐	☐
P2.i.13 Leadership …	☐	☐	☐	☐

Pillar 2.iii - Agile Adoption

Here we ask your insight and real-life experience regarding the adoption and integration of Agile as Way of Work in your professional workplace. This final section observes and elicits insight as to how Agile has been accepted and developed as Way of Work in your organisation.

This section has 13 questions.

Please only select a single tick per question.

In completion, please do complete the "Comment" free text section as we appreciate your thoughts.

Adoption *

	Strongly Disagree	Disagree	Agree	Strongly Agree
P2.iii.1 We as Organ…	☐	☐	☐	☐
P2.iii.2 Our Agile jo…	☐	☐	☐	☐
P2.iii.3 I am actively…	☐	☐	☐	☐
P2.iii.4 All work gro…	☐	☐	☐	☐
P2.iii.5 Agile work t…	☐	☐	☐	☐
P2.iii.6 I will gladly r…	☐	☐	☐	☐
P2.iii.7 Agile facilita…	☐	☐	☐	☐
P2.iii.8 Agile is livin…	☐	☐	☐	☐
P2.iii.9 We are comf…	☐	☐	☐	☐
P2.iii.10 Retrospect…	☐	☐	☐	☐
P2.iii.11 Our results…	☐	☐	☐	☐
P2.iii.12 We have h…	☐	☐	☐	☐
P2.iii.13 Agile enabl…	☐	☐	☐	☐

Please comment on the above

Long answer text

Closing

I thank you dearly for your time, dedication, and effort in completing this questionnaire.

Your insight and participation are of value as it facilitates a new flanged discourse of meaning-making as a building block for Emergent Professional Learning.

I thank you

Pillar 2ii- Agile as Way Of Work

Here we ask your insight and real-life experience regarding Agile as Way of Work in your professional workplace. This refers to the actual practicing of Agile principles and practices in the completion of your daily work routine.

This section has 16 questions.

Please only select a single tick per question.

In completion, please do complete the "Comment" free text section as we appreciate your thoughts.

Agile as Way Of Work *

	Strongly Disagree	Disagree	Agree	Strongly Agree
P2.ii.1. Agile as Wa…	☐	☐	☐	☐
P2.11.2 Work group…	☐	☐	☐	☐
P2.ii.3 We follow Ag…	☐	☐	☐	☐
P2.ii.4 The Agile tea…	☐	☐	☐	☐
P2.ii.5 All work grou…	☐	☐	☐	☐
P2.ii.6 Agile metrics…	☐	☐	☐	☐
P2.ii.7 Work groups …	☐	☐	☐	☐
P2.ii.8 We as a tea…	☐	☐	☐	☐
P2.ii.9 I am comfort…	☐	☐	☐	☐
P2.ii.10 Our project…	☐	☐	☐	☐
P2.ii.11 We as a tea…	☐	☐	☐	☐
P2.ii.12 Agile make…	☐	☐	☐	☐
P2.ii.13 We as a tea…	☐	☐	☐	☐
P2.ii.14 We as a tea…	☐	☐	☐	☐
P2.ii.15 Agile make…	☐	☐	☐	☐
P2.ii.16 Agile make …	☐	☐	☐	☐

Annexure Epic 4-4.2-Survey Results

How prone is your organisation to meaning making as a process for learning?

Quantitative Findings/Data-Dimension 1-Knowledge Creation

Pillar 1i-Leaderships role in knowledge creation									
Q number	**Question**	**Variables (dependent and relational)**	**Calculations**						
			SD	**D**	**A**	**SA**	**Contributors %**	**Destructors %**	**Difference %**
P1.i.1.	Leaders in the Organisation are receptive and respond to learning suggestions?	V1.i.c	2(2.2%)	4(4.4 %)	61(67%)	24(26.4%)	+93.4%	-6.6%	+86.8

P1.i.2.	My leader keeps me informed about important and current learning information.	V1.i.a V1.iii.b		5(5.5%)	15(16.5%)	49(53.8%)	22(24.2%)	+88.0%	-22.0%	+66.0%
P1.i.3.	I and my leader have a clear vision of my professional development.	V1.iii.b		2(2.2%)	28(31.0%)	44(48.4%)	17(18.7%)	+66.8%	-33.2%	+33.6%
P1. i.4	My leader encourages me to be innovative and to present my ideas.	V1.i.c V1. ii. b		2(2.2%)	12 (13.2%)	44(48.4%)	33(36.3%)	+84.7%	-15.3%	+69.4%
P1. i.5.	In my Organisation all staff are encouraged to take responsibility for their own learning development.	V1.i.b V1.iii.b		0 (0%)	6(6.6%)	57(62.6%)	28(30.8%)	+93.4%	-6.6%	+86.8%
P1. i.6.	My Leader trusts the quality of my work	V1. ii. b		1(1.1%)	7(7.7%)	56(61.5%)	27(29.7%)	+91.2	-8.8%	+82.4%
P1. i.7.	The objectives of working groups are coordinated	V1.i. a		5 (5.5%)	15(16.5%)	58(63.8%)	13(14.2%)	+80.3%	-19.7%	+60.6%

P1. i.8.	The objectives of the Organisation are clearly defined and communicated.	V1.i.c	1(1.1%)	17(19.8%)	52(60.5%)	21(23,1%)	+79.1	-20.9%	+58.2%
P1. i.9.	I am aligned with my Organisation's vision.		0(0%)	8(8.8%)	54(59.3%)	29(31.9%)	+91.2%	-8.8%	+82.4%
P1. i.10.	My Leader consistently provides support and advice	V1.i.c V1.ii.c	1(1.1%)	18(19.8%)	44(48.4%)	28(30.8%)	+79.1%	-20.9%	+58.2%
P1. i.11	I trust that Leadership has the skills and abilities to overcome the learning challenges we face as an Organisation.	V1.i. a	1(1.1%)	15(16.5%)	56(61.5%)	19(20.9%)	+82.4%	-17.6%	+64.8%
P1. i.12	The Organisation's Leadership are aligned to work together collaboratively.		3(3.3%)	16(17.6%)	56(61.5%)	16(17.6%)	+79.1%	-20.9%	+58.2%
P1. i.13.	I trust that the members of my work group will behave in a reliable manner.	V1.iii.b	3(3.3%)	11(12.1%)	61(67.0%)	16(17.6%)	+84.6%	-15.4%	+69.2%

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Pillar 1ii-Organisations knowledge creation culture									
P1.ii.1.	I enjoy diversity in opinions as it causes more richness in group discussions.	V1.i.c V1.ii.c		0(0%)	5(5.5%)	44(48.4%)	42(46.2%)	+94.5%	-5.5%	+89.0%
P1.ii.2	I can clearly articulate and explain my needs and opinion to others.	V1. ii. b		0(0%)	10(11%)	54(59.3%)	27(29.7%)	+89.0%	-11%	+78.0%
P1.ii.3.	I have access to all the information I require to do my job.	V1.i.c		1(1.1%)	11(12.1%)	56(61.5%)	23(25.3%)	+86.8%	-13.2%	+73.6%
P1.ii.4	I am able to search and have access to information.	V1.i.c		0(0%)	6(6.6%)	56(61.5%)	29(31.9%)	+93.4%	-6.6%	+86.8%
P1.ii.5.	Opportunities for continuous learning are encouraged,	V1.i.a V1.ii.c V1.iii.b		2(2.2%)	14(15/4%)	50(54.9%)	25(27.5%)	+82.4%	-17.6%	+64.8%

	facilitated and provided by my Organisation.								
P1.ii.6.	I am enthusiastic to work with others rather than work on my own.			4(4.4%)	8(8.8%)	55(60.4%)	24(26.4%)	+86.8%	-13.2%	+73.6%
P1.ii.7.	I am able to source knowledge that I might not process.			1(1.1%)	4(4.4%)	59(64.8%)	27(29.7%)	+94.5%	-5.5%	+89.0%
P1.ii.8.	My Organisation values learning.	V1.i.a V1.iii.b		0(0%)	7(7.7%)	58(63.7%)	26(28.6%)	+92.3%	-7.7%	+84.6%
P1.ii.9.	Each team member is encouraged to express their views on how the learning of Agile teams progresses	V1.i.c		4(4.4%)	17(18.7%)	53(58.2%)	17(18.7%)	+76.9%	-23.1%	+53.8%
P1.ii.10.	I am motivated to find and enhance similarities and common elements between my team members.			1(1.1%)	19(20.9%)	54(59.3%)	17(18.7%)	+78.0%	-22.0%	+56.0%

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P1.ii.11.	I believe strongly in my Organisation 's vision.	V1.i. b		2(2.2%)	5(5.5%)	58(63.7%)	26(28.6%)	+92.3%	-7.7%	+84.6%
P1.ii.12.	The members of my Organisation have a set of shared values.			1(1.1%)	15(16.5%)	57(62.6%)	18(19.8%)	+82.4%	-17.6%	+64.8%
P1.ii.13.	The whole Organisation is included in the visioning process.			5(5.5%)	28(30.8%)	43(47.3%)	15(16.5%)	+63.7%	-36.3%	+27.4%
P1.ii.14.	I have the necessary decision-making skills to take an active and effective leadership	V1. ii. b		1(1.1%)	11(12.1%)	60(65.9%)	19(20.9%)	+86.8%	-13.2%	+73.6%
P1.ii.15.	I take the opportunity for leadership roles by initiating learning initiatives.	V1. ii. b		0(0%)	21(23.1%)	51(56.0%)	19(20.9%)	+76.9%	-23.1%	+53.8%
P1.ii.16.	My company provides me with the opportunity for online training (I.e. Udemy access).	V1.i.c V1.iii.b		4(4.4%)	15(16.5%)	47(51.6%)	25(27.5%)	+79.1%	-20.9%	+58.2%

P1.ii.17.	I utilise the Organisation's learning opportunities.	V1.i.c	1(1.1%)	9(9.9%)	62(68.1%)	19(20.9%)	+89.0%	-11%	+78.0%
P1.ii.18.	Trust and respect are core values of my Organisation.		2(2.2%)	7(7.7%)	48(52.7%)	34(37.4%)	+90.1%	-9.9%	+80.2%
P1.ii.19.	I am willing and prepared to take on more responsibilities.	V1.ii.c	0(0%)	4(4.4%)	52(57.1%)	35(38.5%)	+95.6%	-4.4%%	+91.2%
P1.ii.20.	Staff are encouraged to set personal learning goals.	V1.i.b V1.iii.a	1(1.1%)	9(9.9%)	56(61.5%)	25(27.5%)	+89.0%	-11.0%	+78.0%
P1.ii.21.	I am personally committed to learning and encourage my team to do the same.	V1.i.c	0(0%)	6(6.6%)	55(60.4%)	30(33.0%)	+93.4%	-6.6%	+86.8%
P1.ii.22.	My work team has the resources necessary for achieving the learning objectives they are responsible for.	V1.iii.a	1(1.1%)	15(16.5%)	57(62.6%)	18(19.8%)	+82.4%	-17.6%	+64.8%

P1.ii.23.	I feel my workplace community supports me in my professional learning.	V1.i.c	3(3.3%)	14(15.4%)	55(60.4%)	19(20.9%)	+81.3%	-18.7%	+62.6%
P1.ii.24.	My learning opportunities are exciting and challenging as it contributes to my professional development.	V1.ii.c	0(0%)	11(12.1%)	51(56.0%)	29(31.9%)	+87.9%	-12.1%	+75.8%

Pillar 1iii-Collaboration in knowledge creation

P1.iii.1.	Senior management is committed to making the company more collaborative	V1.i. a	2(2.2%)	9(9.9%%)	55(60.4%)	25(27.5%)	+87.9%	-12.1%	+75.8%
P1.iii.2.	I take the learning needs of others into account when communicating with them.	V1.iii.a V1.iii.c	1(1.1%)	11(12.1%)	61(67.0%)	18(19.8%)	+86.8%	-13.2%	+73.6%

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P1.iii.3.	I initiate two-way communication to promote and enhance professional learning in the Organisation.	V1. ii. a	0(0%)	7(7.7%)	66(72.5%)	18(19.8%)	+92.3%	-7.7%	+84.65
P1.iii.4.	The communication infrastructure in my Organisation is adequate.	V1.iii.a	3(3.3%)	17(18.7%)	51(56.0%)	20(22.0%)	+78.0%	-22.0%	+56.0%
P1.iii.5.	I frame, organise and communicate my learning ideas to others.	V1.i.b V1.iii.a	2(2.2%)	19(20.9%)	56(61.5%)	14(15.4%)	+76.9%	-23.1%	+53,8%
P1.iii.6.	I am able to organise and build knowledge structures (both independently and in a team format)	V1. ii. b	2(2.2%)	15(16.5%)	62(68.15)	12(13,25)	+81.3%	-18.7%	+62.6%
P1.iii.7.	There are sufficient opportunities to have informal learning sharing.	V1.1.a V1.iii.a V1.iii.b V1.iii.c	1(1.1%)	15(16.5%)	58(63.7%)	17(18.7%)	+82.4%	-17.6%	+64.8%

P1.iii.8.	I can share and integrate my knowledge easily with others.	V1.1.a V1.i.b V1.iii.b	1(1.1%)	12(13.2%)	59(64.8%)	19(20.9%)	+85.7%	-14.3%	+71.4%
P1.iii.9.	I have the communication and collaboration tools necessary to perform my work.	V1.i. a	1(1.1%)	3(3.3%)	58(63.7%)	29(31.9%)	+95.6%	-4.4%	+91.2%
P1.iii.10.	There is alignment and integration of contribution and knowledge between staff.	V1.ii.c V1.iii.c	2(2.2%)	23(25.3%)	49(53.8%)	17(18.7%)	+72.5%	-27.5%	+45.0%
P1.iii.11	We have an active Community of Practice specifically for the promotion of new learning initiatives.	V1.i.b V1. ii. a	9(9.9%)	31(34.1%)	37(40.7%)	14(15.4%)	+56.0%	-44%	+12%
P1.iii.12.	I trust that the members of my team will be supportive to my learning needs.	V1.iii.b	3(3.3%)	9(9.9%)	60(65.9%)	19(20.9%)	+86.8%	-13.2%	+73.6%

P1.iii.13.	There is adequate communication flow between different Agile teams	V1.i.b V1.iii.a	3(3.3%)	29(31.9%)	47(51.6%)	12(13.2%)	+64.8%	-35.2%	+29.6%
P1.iii.14.	It is easy to work with my co-workers as we all contribute towards promoting new learning.	V1.i. b	5(5.5%)	19(20.9%)	52(57.1%)	15(16.5%)	+73.6%	-26.4%	+47.2%
P1.iii.15.	The learning objectives of individual working groups are communicated to each other.	V1. ii. a V1.iii.a	6(6.6%)	26(28.6%)	49(53.8%)	10(11.0%)	+64.8%	-35.2%	+29.6%
P1.iii.16.	My team encourages all members to actively participate in creating new learning objectives.	V1.i.b V1. ii. b V1.ii.c V1.iii.a	5(5.5%)	15(16.5%)	56(61.5%)	15(16.5%)	+78.0%	-22.0%	+56.0%

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Dimension 2-Agile Maturity

Demographics

	Use Agile as Way of Work	Apply Agile Frameworks	Formal Agile journey
Yes	78	71	71
No	13	20	20

Dimension 2–Agile Maturity

Pillar 2i-Organisation's mission and structure underpinning Agile as WOW									
Q number	**Question**	**Variables (dependent and relational)**	**Calculations**						
			SD	**D**	**A**	**SA**	**Contributors %**	**Destructors %**	**Difference %**

P2. i.1.	The Organisation Agile vision is dynamic.		2(2.2%)	26(28.6%)	49(53.8%)	14(15.4%)	+69.2%	-30.8%	+38.4%
P2. i.2.	The Organisation Agile vision has captured my imagination and passion		3(3.3%)	25(27.5%)	52(57.1%)	11(12.1%)	+69.2%	-30.8%	+38.4%
P2. i.3.	There is a clearly defined Agile mission for my Organisation's operations.		7(7.7%)	26(28.6%)	47(51.6%)	11(12.1%)	+63.7%	-36.3%	+27.4%
P2. i.4.	Leaders have a clear understanding of the Organisation Agile approach as business.		7(7.7%)	33(36.3%)	41(45.1%)	10(11.0%)	+56.0%	-44.0%	+12%
P2. i.5.	The strategies of the different working groups and departments are aligned		4(4.4%)	36(39.6%)	44(48.4%)	7(7.7%)	+56.0%	-44.0%	+12.0%
P2. i.6.	Agile initiatives are aligned to the Organisation's mission and vision.		3(3.3%)	23(25.3%)	51(56.0%)	14(15.4%)	+71.4%	-28.6%	+42.8%

P2. i.7.	Agile team missions are aligned with the Organisation's mission and vision.		2(2.2%)	23(25.3%)	53(58.2%)	13(14.3%)	+72.5%	-27.5%	+45.0%
P2. i.8.	Leadership openly advocates Agile as Way of Work.		6(6.6%)	17(18.7%)	52(57.1%)	16(17.6%)	+68.1%	-31.9%	+36.25
P2. i.9.	Leadership lives up to Agile principles.		7(7.7%)	29(31.9%)	43(47.3%)	12(13.2%)	+60.4%	-39.6%	+20.8%
P2. i.10.	Agile is key in our Organisations differentiating ability.		4(4.4%)	23(25.3%)	49(53.8%)	15(16.5%)	+70.3%	-29.7%	+40.6%
P2. i.11	We as Organisation prefer to deal with external parties who embrace Agile		4(4.4%)	30(33.0%)	46(50.5%)	11(12.1%)	+62.6%	-37.4%	+25.2%
P2. i.12	Leadership uses Agile principles in setting the mission and vision		6(6.6%)	24(26.4%)	52(57.1%)	9(9.9%)	+67.0%	-33.0%	+34.0%

P2. i.13	Leadership applies Agile practices as a norm		8(8.8%)	30(33.0%)	42(46.2%)	11(12.1%)	+58.2%	-41.8%	+16.4%

Pillar 2ii-Agile as Way of Work

P2.ii.1.	Agile as Way of Work is of benefit in these unprecedented Covid Lock down times		1(1.1%)	3(3.3%)	55(60.4%)	32(35.2%)	+95.6%	-4.4%	+91.2%
P2.ii.2	Work groups follow Agile principles and practices		3(3.3%)	16(17.6%)	58(63.7%)	14(15.4%)	+79.1%	-20.9%	+58.2%
P2.ii.3	We follow Agile practices (i.e. Stand-ups / Sprints) on a daily basis.		5(5.5%)	16(17.6%)	50(54.9%)	20(22.0%)	+76.9%	-23.1%	+53.8%
P2.ii.4	The Agile teams work is clearly prioritised.		6(6.6%)	17(18.7%)	54(59.3%)	14(15.45)	+73.6%	-26.4%	+47.2%

P2.ii.5	All work groups are aligned in employing an Agile Way of Work		8(8.8%)	24(26.4%)	48(52.7%)	11(12.1%)	+64.8%	-35.2%	+29.6%
P2.ii.6	Agile metrics (i.e. Burn downs, Cycle times) is important to us as a team		8(8.8%)	26(28.6%)	50(54.9%)	7(7.7%)	+62.65	-37.4%	+25.2%
P2.ii.7	Work groups are small in size (5-9 people)		5(5.5%)	15(16.5%)	52(57.1%)	19(20.9%)	+78.0%	-22.0%	+56.0%
P2.ii.8	We as a team are self-sufficient in completing our workload		2(2.2%)	15(16.5%)	60(65.9%)	14(15.4%)	+81.3%	-18.7%	+62.6%
P2.ii.9	I am comfortable to use Agile as Way of Work		1(1.1%)	3(3.3%)	60(65.9%)	27(29.7%)	+95.6%	-4.4%	+91.2%
P2.ii.10	Our projects are broken down into smaller value adding features		5(5.5%)	20(22.0%)	56(61.5%)	10(11.05)	+72.3%	-27.7%	+44.6%

P2.ii.11	We as a team embrace "continuous improvement" as motto		4(4.4%)	11(12.1%)	57(62.6%)	19(20.9%)	+83.5%	-16.5%	+67.0%
P2.ii.12	Agile makes my life easier		4(4.4%)	5(5.5%)	60(65.9%)	22(24.2%)	+90.1%	-9.9%	+80.2%
P2.ii.13	We as a team have a say in work prioritisation		9(9.9%)	14(15.4%)	54(59.3%)	14(15.4%)	+74.7%	-25.3%	+49.4%
P2.ii.14	We as a team focus on getting work done.		2(2.2%)	5(5.5%)	60(65.9%)	24(26.4%)	+92.3%	-7.7%	+84.6%
P2.ii.15	Agile makes working from home easier		0(0%)	10(11.0%)	57(62.6%)	24(26.4%)	+89.0%	-11.0%	+78.0%
P2.ii.16	Agile makes collaboration easier within the team.		1(1.1%)	6(6.6%)	62(68.1%)	22(24.2%)	+92.3%	-7.7%	+84.6%

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	Pillar 2.iii-Agile Adoption								
P2.iii.1	We as Organisation are committed to Agile as Way of Work			5(5.5%)	21(23.1%)	50(54.9%)	15(16.5%)	+71.4%	-28.6%	+42.8%
P2.iii.2	Our Agile journey is visibly supported by our Leadership.			8(8.8%)	21(23.1%)	49(53.8%)	13(14.3%)	+68.1	-31,9%	+36.2%
P2.iii.3	I am actively involved in setting Agile Way of Work goals.			6(6.6%)	25(27.5%)	46(50.5%)	14(15.4%)	+65.9%	-34,1%	+31.8%
P2.iii.4	All work group objectives are well defined			4(4.4%)	32(35.2%)	46(50.5%)	9(9.9%)	+60.4%	-39.6%	+20.8%
P2.iii.5	Agile work teams are self sufficient			3(3.3%)	14(15.4%)	60(65.9%)	14(15.4%)	+61.5%	-38.5%	+23.0%
P2.iii.6	I will gladly revert back to waterfall as Way of Work			31(34.1%)	32(35.2%)	22(24.2%)	6(6.6%)	+33.8%	-66,2%	-32.4%

P2.iii.7	Agile facilitates a positive organisational environment.		0(0%)	8(8.8%)	68(74.7%)	15(16.5%)	+91.2%	-8.8%	+82.4%
P2.iii.8	Agile is living up to my expectations		4(4.4%)	8(8.8%)	63(69.2%)	16(17.6%)	+86.8%	-13.2%	+73.6%
P2.iii.9	We are comfortable to showcase our Agile journey		8(8.8%)	14(15.4%)	54(59.3%)	15(16.5%)	+75.8%	-24.2%	+51.6%
P2.iii.10	Retrospectives as formality is important		4(4.4%)	7(7.7%)	62(68.1%)	18(19.8%)	+87.9%	-12.1%	+75.8%
P2.iii.11	Our results have improved with Agile		2(2.2%)	11(12.1%)	63(69.2%)	15(16.5%)	+85.7%	-14.3%	+71.4%
P2.iii.12	We have happier staff since we adopted Agile		3(3.3%)	20(22.0%)	58(63.7%)	10(11.0%)	+74.7%	-25.3%	+49.4%
P2.iii.13	Agile enables the Organisation to endure the Covid-19 challenges		3(3.3%)	6(6.6%)	59(64.8%)	23(25.3%)	+90.1%	-9.9%	+80.2%

Variable 1.i.a-Communication/Strategy/Leadership

Leaders in the organisation are forthcoming with information and they do encourage staff to challenge meaning making (in the organisation).
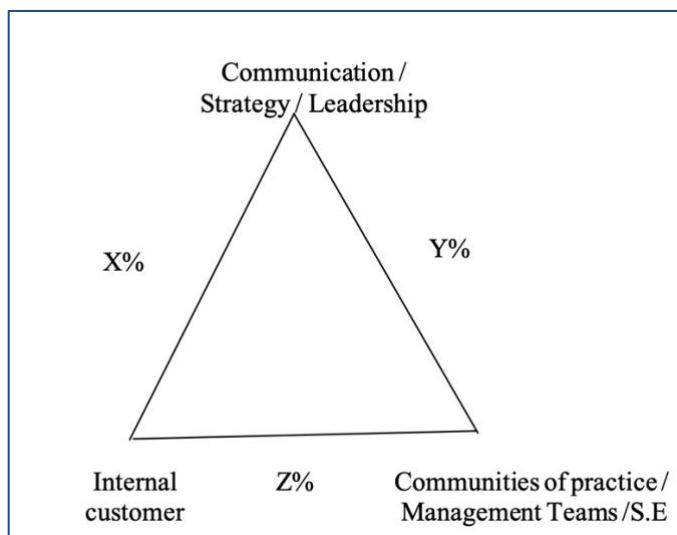
Propositional standing

It can be argued that more cognitive learning and the reiteration of agile working principles can lead to higher levels of productivity.

Relational perspective

If organisations focus on their human element meaning making emerges-the data provides evidence that when working for a learning organisation (excellent company) which embraces people as a true asset (put their people first).

Seemingly when leadership becomes disconnected with their human element in effective communication strategies becomes a hindrance to systemic learning. A practical case study depicting experience notes that "At times and my experience is that they (leaders) do not effectively communicate the organisational learning empowerment strategy to my team."

The data sheds light and produces evidence that strategic leadership communication (x%) directly impacts SE Entities (y%) which indirectly (z%) affects the internal customer experience on meaning making in the workplace. This is supported in the comment from a respondent who notes that " My Experience-Management is supportive as we can attend most courses we ask for

There are a lot of people who are resistant to learning ("I don't want to learn"-how can you grow and improve your value and contribution?)
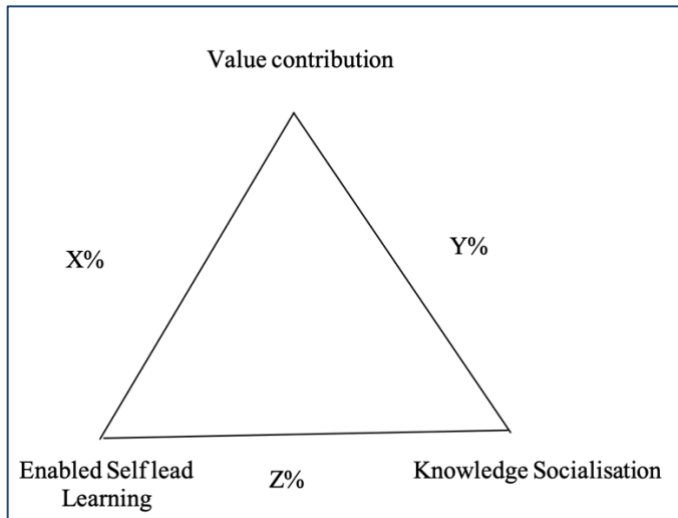
Propositional standing

It can be argued that the more cognitive learning and socialisation of new meaning making can have a direct correlation to higher levels of productivity. It can further be argued that that self-motivated (regulated) learning could underscore enhancement in value contribution.

Relational perspective

It is postulated that if organisations focus on their human element meaning making emerges-the data provides evidence that when working for a learning organisation (excellent company) which embraces people as a true asset (put their people first).

It is observed that the socialisation and sharing of new meaning making (knowledge) could be seen as diminishing of the individuals mandate and thus the loss of "power" / authoritative standing they have in the organisation. It is proposed that management intervention should be required as

self-motivated learning (intrinsic by nature) could be kindled through formalised persuasion and process.

Variable 1.i.c-Organisational Goals

"I work in a Supportive Team with a Supportive Manager where i am encouraged to contribute to the organisation"
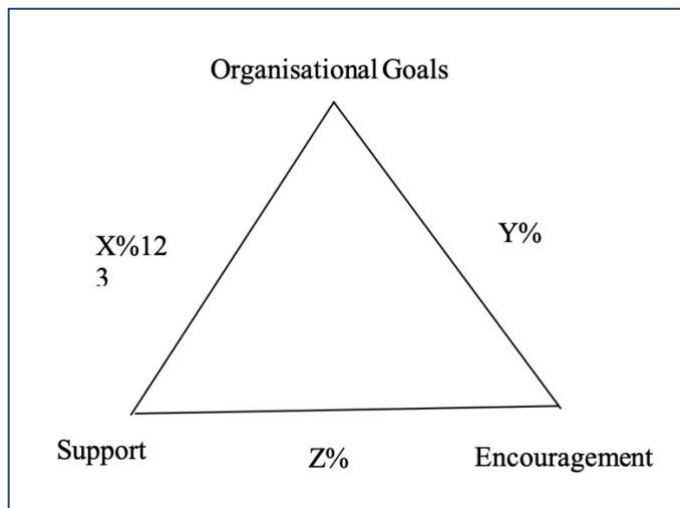
Propositional standing

It can be proposed that the more cognitive learning and socialisation of new meaning making can have a direct correlation to higher levels of productivity. It can further be argued that that self-motivated (regulated) learning could underscore enhancement in value contribution.

Relational perspective

Could it be that if organisations focus on supporting their human element in meaning making journeys through enablement, encouragement and clear organisational goal socialisation, the vision of the SE could be attained?

Could meaning making support be if all elements (management support + encouragement + organisational goals) are availed to the SE entity / knowledge worker that self regulated learning is emboldened?

Would a proactive investment by leadership in an individual knowledge worker with vested interest in meaning making encourage the achievement of short and long term organisational objectives?

It appears that deeper levels of mindfulness and engagement are necessitated and required from Management in ensuring organisational goals not only to be achieved but sustained.

The data shows that leaders in organisations are forthcoming with information and encourage staff to challenge themselves in personal development through embracing ownership, accountability and responsibility for self-regulated lifelong learning.

Hence it can be argued that seemingly pockets of transformational leadership attributes emerge in the organisation. The question then emerges as to what extent are transformational leadership qualities in comparison to that of traditional leadership attributes a pre-set requirement in the establishment of a sustainable meaning making process?

Pillar 1ii-Organisations Learning creation culture

Variable 1.ii.a-Customer Experience

As a reflection on CX (Customer Experience)   which 1 diminishes and could become non-existent, where there is no established learning
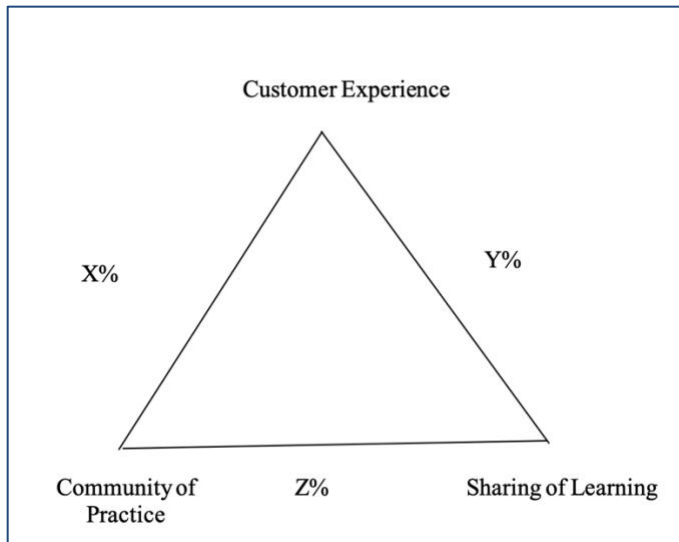
Propositional standing

The qualitative data suggests that as a reflection on CX (Customer Experience) as independent variable regress with diminishment and could become non-existent, where there is no established meaning making community of practice where sharing of new learnings are socialised.

Relational perspective

The inverse to customer experience (CX) regression and diminishment could be dependent on the level of new meaning making and the sharing thereof. However, the contradictory appease to presents itself as pockets of SE entities emerge and establish themself in the organisational learning culture. The establishment and emergence of meaning making sharing communities of practice appears to present itself more prominent in the information technology sector especially in the following disciplines; User Experience (UX) and software development where multimodal applications of learning and meaning making are employed.

The data further eludes that there is a direct proportional dependency relationship between increased levels of customer experience and further educational levels (i.e. meaning making capability) of service deliverers. It can then be deduced that the level of customer centrism could

be dependent on the level of openness to learning enablement and meaning making endorsed and supported by the organisation and the incumbent.

Our team's value contributing capability is dependent on purpose and improvement resulting in tangible benefits.
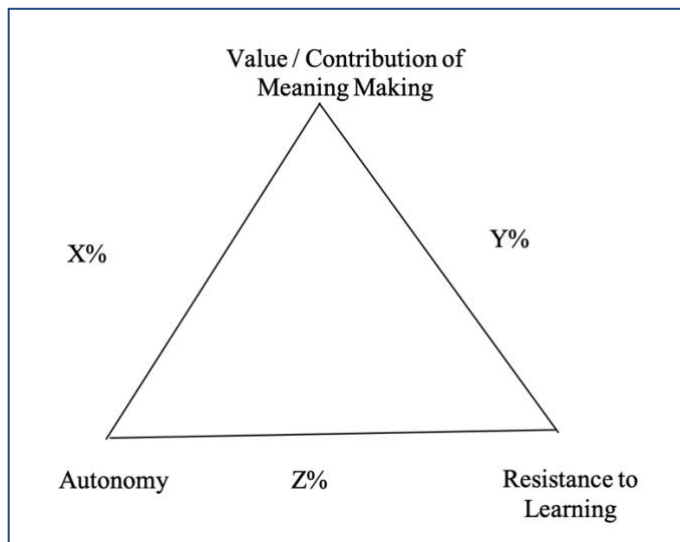
Propositional standing

The artefact from comment provided in the Learning creation survey is supported by outcomes of the the Lean Coffee Session no 1 which suggests that value creation could be seen as both personal and professional which facilitates a postmodern discourse on blurring of boundaries between the traditional professional vs. personal work life balance duality in comparison to the emerging reality with new meaning making in these unprecedented COVID working from home times.

It could be argued that the achievement of (real) value contribution could be directly proportional to the availability and capability of learning in new meaning making technologies?

Relational perspective

Could it be that if organisations focus on supporting their human element in meaning making journeys through enablement, encouragement and instilling the practicality of new meaning making, that those organisations are more resilient in weathering exceptional environmental challenges?

What could the relationship between autonomy, power and mandate be. Are these variables interlinked and what role does self-will and the individuals intrinsic motivation for further learning be?

Does the organisation which provisions encouragement, support and enablement (through the fostering of novel learning and further education) of meaning making exhibit an established internal motivation for value creation?

Variable 1.ii.c-Organisational Contribution

I work in a Supportive Team (agency) with a Supportive Manager (the steward which embodies transformational leadership) where i am encouraged to contribute to the organisation
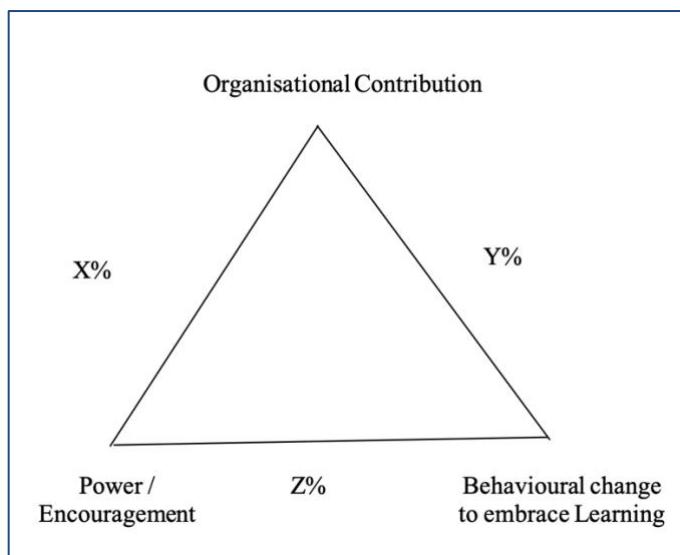
Propositional standing

The qualitative data suggests as noted in Variable 1.ii.c that the process of value creation could be bi-dimensional in embracing both personal and professional contributions. Could it then be postulated that organisational contribution embodies a wider spectra of personal investment? This is evident as the attainment and provision of organisational contribution could have a possible direct relationship between autonomy accompanied by leadership encouragement, willingness and personal ownership of new meaning making.

Relational perspective

Could it be that autonomy accompanied with enablement through leadership encouragement, necessitates a personal willingness, investment, realisation and ownership for true novel meaning making?

Could it then be further implied that if organisations focus on the provision of autonomy of their human capital to encourage, enable and ownership of the individual knowledge worker for initiating new meaning making journeys?

In consideration of Organisational contribution what could the significance of personal consent as investment for new meaning making processes be? How does personal contribution establish agency for independent learning and autonomous decision making regarding acutely needed information which is foundational to new flanged meaning making?

What significance does the concept of "power" have influence and effect on new meaning making endeavors? What are the power dynamics and behavioural change required for the individual knowledge worker to embrace learning as substance for meaning making?

What is the organisation's leadership contribution to new flanged meaning making endeavours?

Variable 1.iii.a-Team Objectives

Objectives of the team can seemingly not be prioritised and sequenced for action as ineffective communication eradicates the personal responsibility of the individual knowledge worker.
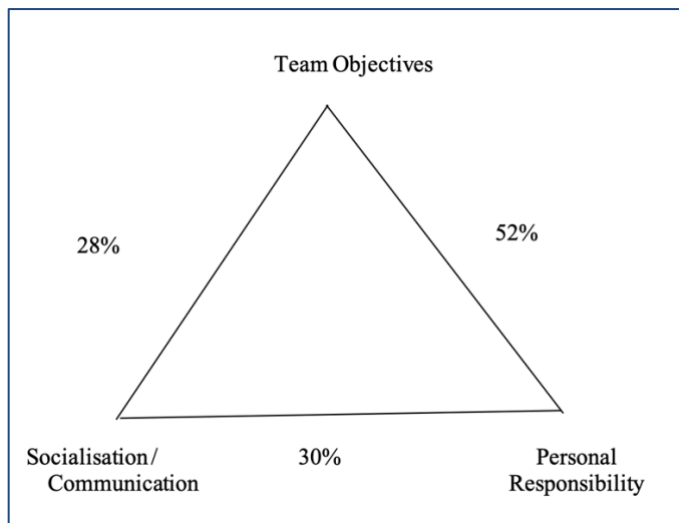
Propositional standing

The data proposes that on a tactical, work group level, the team's ability to achieve and maintain its productivity standard in meeting their Key Performance Indicators could be directly correlated to the socialisation and communication of new meaning making and the maturity of personal accountability and responsibility of the team's individual knowledge worker.

Relational perspective

A notion where the objective of the team can seemingly not be prioritised and sequenced for action as it appears that ineffective communication eradicates the personal responsibility of the individual knowledge worker.

The value of open communication between working groups appears to have a critical role and be of equal standing in prominence to the personal ownership and accountability of each team member. There could be a relational implication between communication and personal ownership and accountability demanded from the SE especially with regards to the communication of objectives of each team are highlighted as personal ownership of accountability could be undermined in the absence thereof.

The inquiry presents itself in asking if it could be that a lack of communication could be the cause of bottleneck in most meaning making embarkations? The inverse could be relevant as pockets of some teams collaborate effectively but some teams definitely do not. The underlying culture in teams seems to differ which could impede effective communication.

It appears that a positive correlation of team support and meaning making development could be expressed in the presence of transformational and empowerment organisations. The data propounds that where learning and novel meaning making endeavours are treated as a personal responsibility with support from leadership and peers the creation of new learning paths are prolific. An interest for exploration presents itself as inquiry into the concept of how to mobilise the individual knowledge worker's commitment to self-regulated new meaning making journeys as it was proposed that an intervention is necessitated from their management to "push them (the knowledge worker) for a change in their behaviour".

New meaning making is a collective responsibility which is affected by agency deliverables where there is a dependency on the other teams.
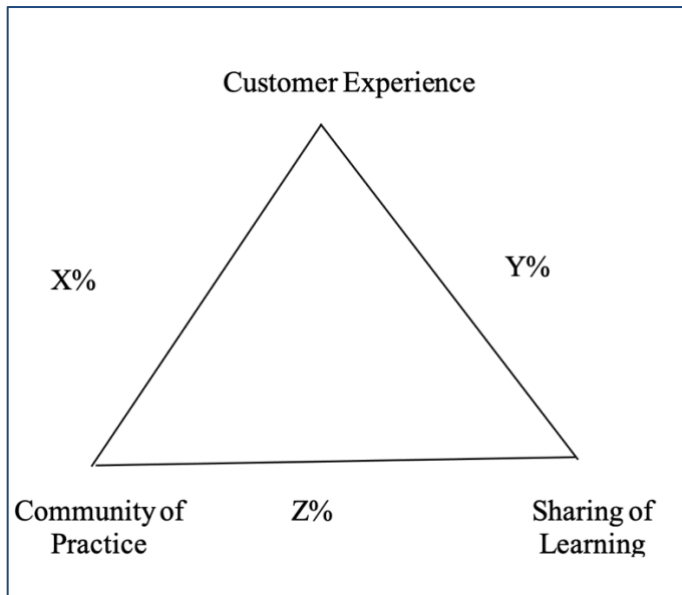
Propositional standing

The data suggests that for proliferation and differentiation of new meaning making to succeed as a continuous improvement initiative a collective approach with alignment and co-ordination between work groups could be necessitated. Could it be that the positioning of new meaning making could be a collective approach and what could the impact of agency deliverables in the presence of external dependencies be? This collective approach to new meaning making could possibly be achieved through the employment (importance) of retrospectives (Question P2.iii.10-75.8%), continuous and open feedback (Question P1.iii.13-29.6%) accompanied with the sharing of new meaning making learnings Question P1.iii.16-56.0%.

Relational perspective

Qualitative data could assert a possible notion that to subscribe to the notion of continuous improvement in meaning making journeys the potential dependencies between work groups should be negated through effective, positive and open communication. In addition the possibility of collective retrospectives as concerted learning mechanisms could contribute in the establishment of an intrinsic ingrained cadence for meaning making enhancement.

The data as case study highlighted a positive contribution to meaning making improvement with the introduction of retrospectives as progression apparatus. The advancement of continuous improvement of meaning making mechanisms could be dependent on the frequency and cadence of retrospectives conducted. Improvement (of organisational learning) is seemingly directly influenced which is possibly directly proportional to improvement of the SE as knowledge worker. The organisational learning progression appears to be reliant on regular feedback sessions where issues and opportunities for development are discussed.

Variable 1.iii.c-Communication Strategy

Leadership can be disconnected at times and my experience is that they don't effectively communicate.
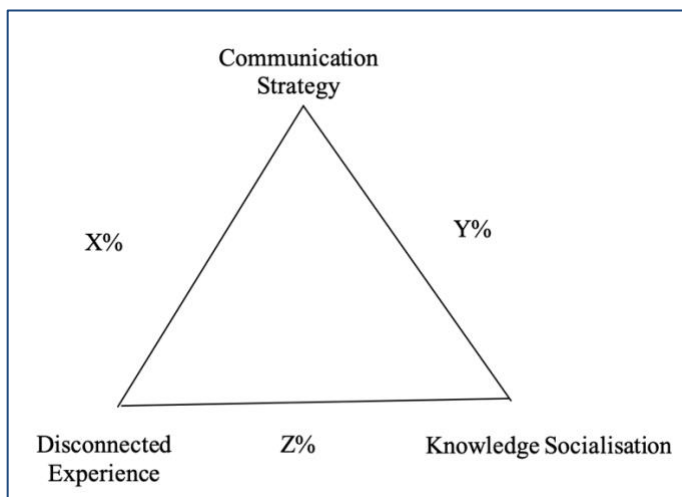
Propositional standing

The data could promote the notion which suggests that an effective and efficient multidirectional communication strategy in enablement of new meaning making a disconnected experience could be experienced which further inhibits new knowledge socialisation. The affinity between personal experience, and the willingness for new meaning making socialisation appears to be augmented in gain in the presence of leadership's positive avocation, encouragement and promotion. The data produces evidence that the relevancy of specific meaning making is crucial to ensure strategic fit assisted by a collectively accepted communication strategy.

It could be deducted that knowledge socialisation is dependent on a strategic fit between experience, relationship and clearly communicated organisational objectives. The inverse could cause fractal communication as the communicational roots have not been foundational in meaning making initiatives.

Relational perspective

The concept of effective communication (or the absence thereof) and as subset the socialising of new meaning making outcomes could be scrutinised as pockets of diversity are at play. As a case study it was mentioned that they (subject specialists) appear to be hesitant in the sharing of their knowledge ("as if they are scared of losing power".

The absence of leadership endorsement and / or an inclusion of meaning making prominence in the organisational strategy accompanied visible championship from leaders could have a stifling effect in meaning making journeys. As case study, the knowledge workers (in absence of leadership support) established a collaborative platform (Interview with S. Strydom, 23 July 2020), seemingly between "rival" companies in addressing and sharing knowledge gain on possible coaching possibility learnings specific for call centre staff who are working from home as necessitated by COVID-19. An informal community of practice (COP) emerged within the learning enablers of the insurance industry in South Africa. Gatherings are anticipated to be monthly virtual meetings where experiences, challenges and ideas are shared. From the interview

it emerged that although formal leadership could be absent in meaning making journeys, spheres of influence (Archer, DeWitt and Wong, 2014) should be established by the passionate Knowledge Worker as distributor of new meaning making.

Authors Reiter-Palmon and Illies (2004:58) and Taylor-Bianco and Schermerhorn (2006:461) underscore this assumption suggesting that knowledge workers pose the capacity to promote self-leadership and thereby facilitate ownership of knowledge within their sphere of influence. Knowledge socialisation is contingent on learning which leverages increased knowledge productivity according to Easterby-Smith, Grossan and Nicolini (2000:785). Duguid (2005:110) suggests furthermore that by improving innovative knowledge access to facilitate the changing of the current knowledge environment exploits the economic application in the economy of knowledge. This is critical to establish communities of practice with a common knowledge intent to obtain a competitive lead. According to Davenport and Prusack (2006:78) the fluid blending of framed skills and knowledge applications provide knowledge workers with an agenda to evaluate and integrate new implicit and tacit knowledge, which resides within the knowledge worker and the community of practice.

Pillar 2i-Organisation's mission and structure underpinning Agile as Way of Work

Variable 2.i.a-Establishing Agile work groups

- **"I'm not 100% convinced the overall Leadership truly understands Agile and all that it entails."**
- **"We also have leadership within our Agile arm of our business and overall Leadership for the company. "**
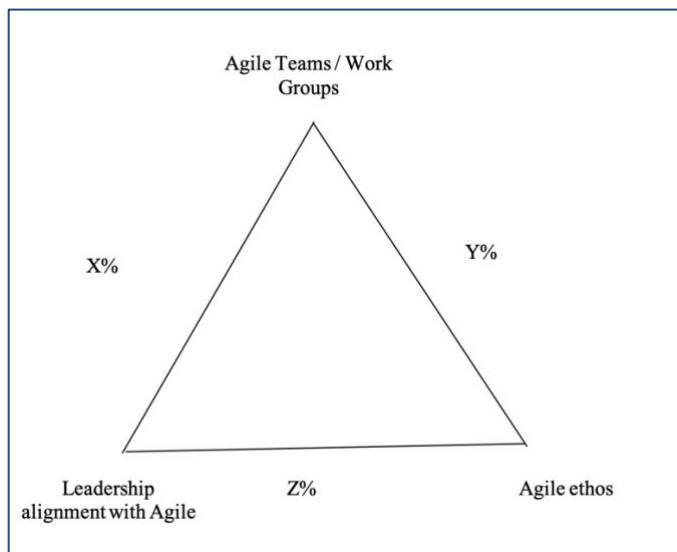
Propositional standing

The data supports the notion that for teams and work groups in embracing Agile adoption as a Way of Work capability, the leaders who construct and form organisational hierarchisches (employing traditional management principles based of functionality and application of incumbents) are not aligned nor understand the ethos of Agile Way of Work Principles.

Relational perspective

The data proposes that although leadership proclaims Agile as Way of Work, and that leadership is "generally aligned" with regard to an Agile understanding, the true Agile ethos is missed in translation.

Leadership applies the concept of Agile loosely and uses Agile Way of Work as a "buzzword". This is evident as leadership seldom lives up to the ideas of self-organising teams and transparency. However, where leadership truly supports, encourages and endorses Agile principles, for example by bestowing flexibility and trust to Knowledge Workers to manage and perform their deliverables a higher yield of return is anticipated. The data presents an indication that Agile could be separated as a stand-alone function and not be ingrained as a Way of Work in the organisation as whole.

Variable 2.i.b-Organisational Agile vision
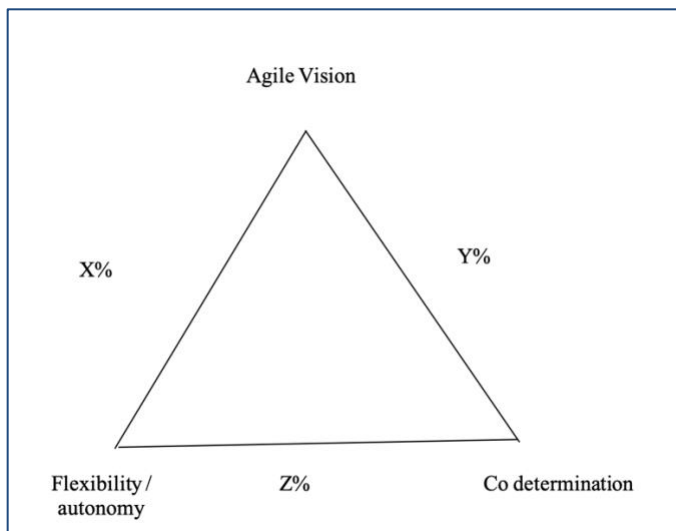
It is important for leaders to become far more proactive in these challenging times.

Proportional standing

The necessity of Agile as a way of work to be embraced, endorsed and implemented by leadership has been reiterated in the data. It is believed that Agile as a way of work could contribute in alleviating current business challenges experienced. Responses are diverse in reply as the distribution of respondents are:

Relational perspective

The data further suggests that It is important for leaders to become more proactive in cooperation between management and workers as inclusion in decision-making. This codetermination is believed to be a sustainable proposition for Agile embarkation and the instilment as a sustainable way of work.

In addition to codetermination as measure for autonomy the importance of a formal platform (or the creation thereof) where all voices can be heard and learning can become clearly articulated and retained was reiterated.

Codetermination is regarded as key to embed a sustainable Agile culture where communities of experts emerge from / out of Communities of Practice. These formally instituted Communities of Practice should facilitate simultaneous referencing as this drives meaning making which creates a concurrent funnelling process for the prioritisation of burning platforms.

The allowance of flexibility signs with Agile tenant in initiating and delivering the smallest value adding feature and from there as base, developing the scope of requirements through experimentation, adaptation and clear multidirectional communication.

It is important for leaders to become far more proactive in these challenging times.
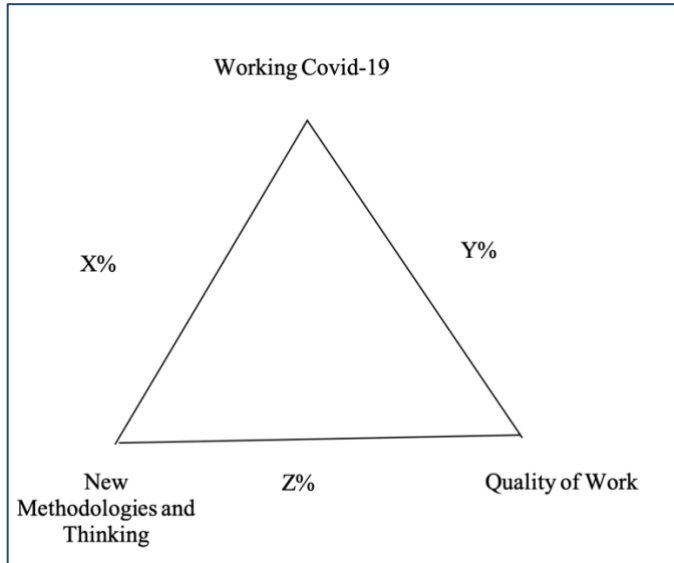
Proportional standing

The traditional way of work has been disturbed by COVID-19, working from home is necessitated and mandatory. The acuteness of immediate transition highlights the dependency and urgency of technology as an enabler.

A call for leadership to be more proactive regarding the implementation, adoption and sustainment of Agile as Way of Work praxis has been urged especially with regard to the COVID-19 landscape which necessitates working from home as mandatory compliance. It is confirmed that Agile as New Methodologies Thinking (Question 2.iii.13) is an imperative to endure Covid challenges with a differentiator score of +80.2%.

In addition additional factors for optimal way of work has been expressed as the comment: " I don't think that agile is the only factor to be taken into consideration in the working from home situation" eludes and describes transcending the clinical mechanism of work performance but in

addition yearns and requests a holistic, humanistic multi intelligence approach to not only surviving exceeding expectation in these challenging COVID -19 times.

Relational perspective

The data proposes that in these challenging unprecedented times new thinking regarding how work is performed should be reconsidered. Agile as a way of work is now not only seen as a theorem but as a possible enabler of people, work and the maintaining of quality of work.

The data suggests that there is a variance of psychological factors (lack of physical human contact and socialising) to be considered in work optimisation. It is further suggested that the mechanics of work methodology could be irrelevant as there is no absolute single solution for each situation. A possible approach could be the proposition of a hybrid approach to way of work. The journey in defining a way of work process, with continuous adaptation and adjustment of levers alludes to Shu Ha Ri (Liker and Convis, 2012) a Japanese terminology for Agile adoption.

The focus should be on what works for both the knowledge worker, organisation and wider ecosystems and what aids SE's the best value and quality for new meaning making results.

Variable 2.ii.b-Way of Work construction

The focus should be on what works for both the knowledge worker, organisation and wider ecosystems
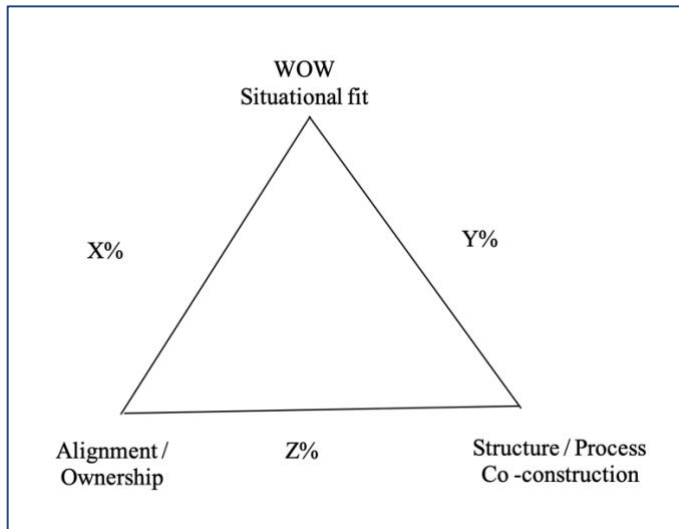
Proportional standing

The data projects in augmentation of crafting a tailormade way of work through employment of various methodologies i.e. Agile, waterfall , LEAN requires alignment between teams underscoring the organisational vision.

Relational perspective

In addition to the team's vision being aligned and supporting the organisation strategic objectives, autonomy in co facilitation accompanied with ownership in crafting a tailor made way of work are necessitated. A co-constructive approach consisting of incremental improvements, learning through experimentation, reflections, adaptation and implementation accompanied with an established process appears to yield a sustainable future proposition on how teams align and work.

A New modern thought on how we work and should work should also include a process mechanism for possible implementation which aligns people, process and platforms (technical). The alignment of the two supporting pillars i.e. Alignment/Ownership and Process Structure through Co-Creation appears to have a direct influence of the successful creation of an alternative Way of Work.

With reference to the Momentum BTS case study (the Writer, 2014), where Agile principles, ethos and values were applied in facilitating organisational re-engineering a positive outcome it is believed could only be realised through authentic co-construction between leadership, teams and people. Annexure Epic 1-1.2-Multimedia contribution-Momentum Way of Work

Pillar 2.iii-Agile Adoption

Variable 2.iii.a-Way of Work construction

" In my experience with those areas adopting Agile has not improved.
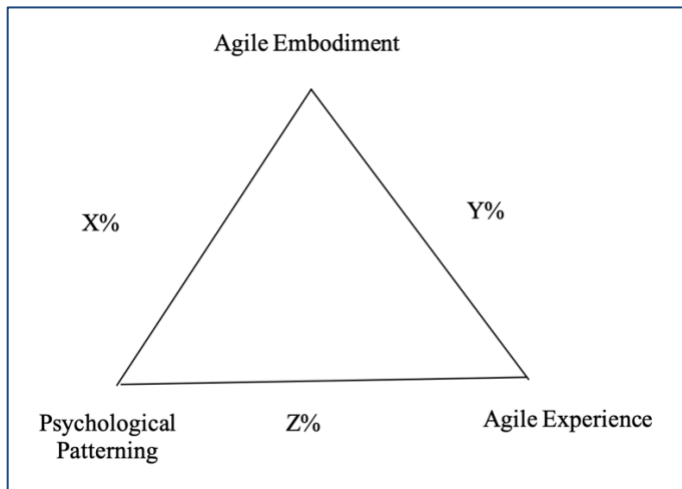
Proportional standing

The data projects a strong sense of Agile belonging, in Question P2.iii.6 an inverse proposition in asking to return to a non-Agile way of work was objected with 66.2%. The Agile embodiment

patterning appears to be founded on personal experience, time and duration of Agile adoption journey and psychological patterning as behavioural outcome of meaning making.

Relational Perspective

The data notes various Agile experiences, both positive and negative experiences are portrayed. Positive illustrations include the Agile practice of a regular cadence of "stand-up" meetings as the daily virtual stand-ups helps to prioritise and complete tasks. Interestingly the importance of Agile metrics are negated (Question P2.ii.6) with a differentiator score of 25.2% which introduces a search for understanding on continuous improvement without metrics. Adverse experiences include the absence of quicker and better service delivery in the presence of dogmatic mechanical following of Agile processes and rituals. The presence of mechanical adherence to agile dogma could negate true embodiment of Agile learning which could in turn be an intrinsic motivational behaviour for new meaning making. It is believed that true Agile endorsement should have a different (positive) workplace experience with authentic new meaning making efficacy. It is believed that Psychological ownership could be the foundational gravitus of Agile embodiment in new meaning making. The psychological ownership, I believe resides with both the Organisation's receptiveness (Question: P2.i.3) which reflects a relatively low differentiating score of + 27.4% in comparison with the individual Knowledge worker score or +62.6% (Question; P2.ii.8).

The comfortability of Agile application as a way of work is actively sanctioned (Question P2.ii.9) and embraced with a 91.2% acceptance from all recipients.

Variable P.2.iii.b-Disparity in Agile progression

"The organisation has adopted agile but the mindset of most leaders is still waterfall."
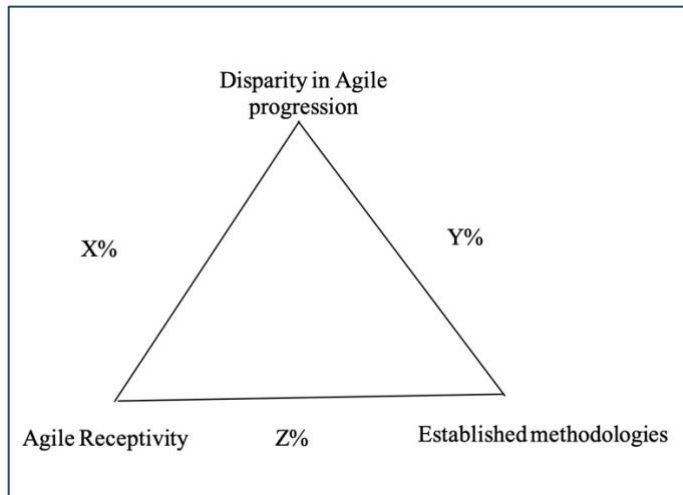
Proportional standing

The data suggests that although Organisations seemingly proclaim and embark upon an Agile adoption journey, a true sense of Agile adoption has not occurred. Agile progression in the organisation has found no true belonging nor does leadership have a genuine understanding of Agile (Questions P2.i.3. and P2.i.13) with an adequacy rating of +14%.

The disparity in Agile progression is apparent as various organisations do not subscribe to Agile as a Way of Work (Question P2.iii.1: +42.8%) despite being exposed to Agile formal training. It is noted that the progression of Agile adoption could be due to experience in Agile methodologies as a responded noted "We are still in the beginning stages of agile adoption throughout the enterprise and have pockets of agile in disparate development teams". This statement is supported and aligned with other views as a +64.8% was obtained in posing the question id work groups are aligned in employing Agile as Way of Work (Question P2.ii.3).

Relational Perspective

Agile receptivity is rated very positively (Question P2.ii.9) with a differentiator score of + 91%. This is echoed by (Question P2.ii.12) depicting a differentiator score of +80.2% when asked if Agile made the respondents' life better. It appears as if Agile practice is more prominent on individual and team level as pockets of excellence (Question P2.ii.16: +84.6%) emerged, in

contrast to an Organisational response rate of +42.8% (Question P2.iii.1) where respondents believed that their organisation is committed to Agile as a Way of Work. Questions P2.iii.7 and P2.iii.8 augments these statements with an average differentiator score of + 78.0%.

Although Agile as work methodology has been welcomed by recipients (P2.iii.8: + 73.6%) in delivering to their expectations, it is interesting that a differentiator score of +82.4% (Question P2.iii.7) which underpins the notion that Agile makes lives better is contradicted with a +49.4% (Question P2.iii.12) when asked if staff are happier with Agile as way of work.

The leader's role as sponsor is paramount in Agile progression, adoption and sustainment as a recipient commented; "We used Agile for a while and I thought it worked well, then the team stopped and our manager is not interested in using it again". This sentiment is echoed on a wider scale by more respondents as a differentiator score of +36.2% was obtained in asking if the organisation's Agile journey was visibly supported by their leadership (P2.iii.2).

Variable P.2.iii.c-Disparity in Agile progression

"We are trying to rollout Agile to the rest of the company however it has been a struggle to get them to adopt."
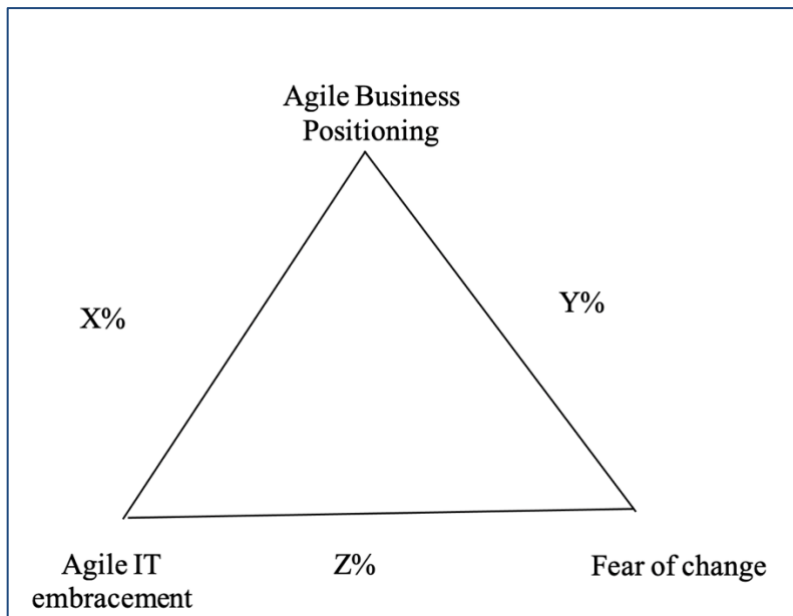
Proportional standing

The data suggests that Agile could be ring fenced and more prevalent in the Information divisions of technology in comparison to other organisational departments. Question 2.iii.1 underpins this deduction as a differentiator score of +42.6% is obtained when asked if the Organisation as a whole is committed to Agile as a Way of Work. a Possible further deduction could be made in stating that Agile as a way of work is more welcomed on an individual basis, which then diminishes proportionally as the size of the population increases. This statement is supported by the following; a positive feedback rating of +83.5% (Question P2.ii.8) which depicts work group perspectives and Question P2.ii.12 representative of individuals with a positive differentiator score of 80.2%.

Relational standing

The data suggests that on an operational level although some IT teams have adopted Agile as a way of work and do collaborate, they (IT) do not see the task to completion as the impact of work methodology on the downstream portion of the value chain is diminished.

The understanding and adoption of Agile as a work methodology is received with diverse reactions (Question P2.ii.7) as a positive differentiator score of +56.0% was obtained in eluding to team size as an indicator of maturity in Agile adoption.

Technology

Sometimes waterfall works, sometimes agile, sometimes iterative but most people mingle it up. I believe that larger projects need some of the structure that a waterfall brings.

Work flows from business to IT in a waterfall way, creating a disconnect in expectations and delivery. Work is often reprioritised without regard for work in progress and PM's dictate end dates without giving teams a chance to plan and advise effort.
-

03 August 2020/09:00-09:30 AM/ZOOM CONFERENCE

Attendees

Kayla Steyn, Henk The Writer

Purpose

To gain insight and obtain perspectives on meaning making as a pre graduate student in COVID-19 times.

Demographics

Third Year BCom student at University of Pretoria

Discussion Themes-Learning

1. What is your experience as a student during this COVID-19 times?
2. How did Lockdown influence your studies?
3. What is your view on the future state of learning?

What is your Experience as a student?

A lack of information and communication as no direction was provided regarding commencement of online classes which was to start 26 April 2020.

Other universities started i.e. University of Stellenbosch and KOVSIES.

Uncertainty as communication was provided on short notice (the Friday before) regarding extension of two weeks on online class commencement.

Leadership was not steadfast in their decision and got swayed by SRC (Student Representative Council) demands.

Management did not inform staff as lecturers did not know nor could convey future plans to students.

How did lockdown influence your studies?

Click-up provided no notifications; it was cumbersome as each subject line had to be accessed on a daily basis for updates and changes to schedules.

Residence payments were still demanded although students were not utilising the facilities.

The Business management faculty was uncoordinated which necessitated intervention from the HOD (Head of Department).

The assessment for Supply chain management was presented as a practical case study (instead of a theory examination) which was welcomed as it provides "real life" experience which supports resume building.

The freedom of weekly live sessions to be accessed at own discretion made personal time management easier, which provided opportunity for additional work and earnings.

Ownership and responsibility regarding study work completion resides completely with the individual.

Social life and interaction with peers are missed.

It appears that the standard of the university lowered as it was "easier for students to pass, but harder to do well in subjects".

What is your view on the future state of learning?

The future of online learning could be very dependent on the field of study. E.g. practical subjects might require more face to face interaction.

Notes

- Leadership could enquire social media as a true representative of the student's views and comments. Suggestion Instagram "cry @ UP".

End

Annexure Epic 4-4.5.a-Lean Coffee Session1

Learning creation in the Professional Agile Workplace, 13 August 2020.
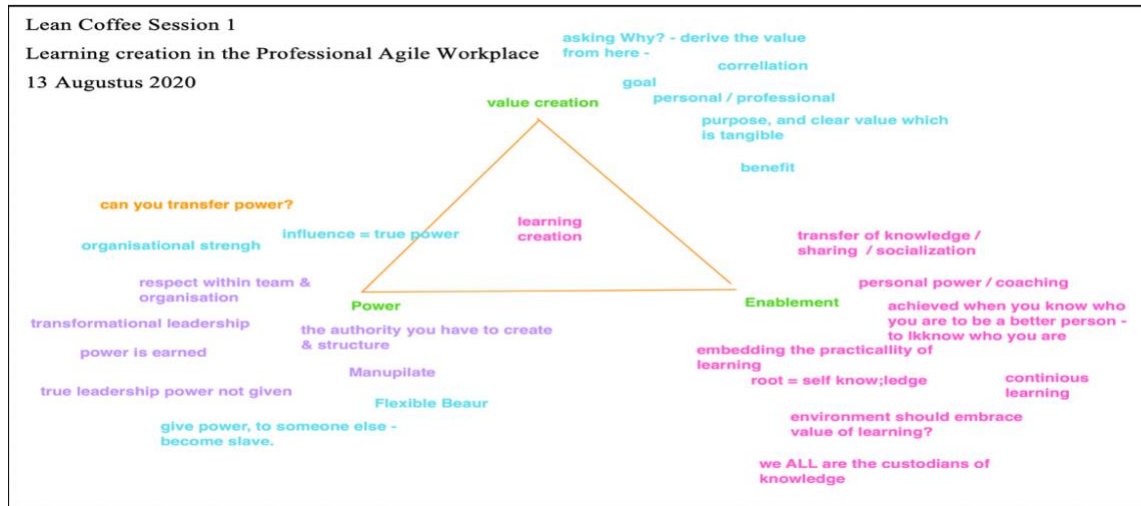
Annexure Epic 4-4.5.b-Lean Coffee Session 2

Agile Maturity, 10 September 2020.

Annexure Epic 4-4.6-Pearson Correlations

Annexure Epic 4-4.6.1-Learning Creation Pearson Correlations

Pearson Correlation Coefficient Calculator

The value of R is: 0.3087.

Want to know how to report Pearson's *r* in your work? (Opens in a new tab so you don't lose your calculation.)

[How to report Pearson's *r* (APA)]

Explanation of results

As you have probably already noticed, the output of this calculator is... verbose. Although most of the information provided below is self-explanatory, there are a few things worth noting. First, the five text boxes spread across the middle of the page represent the calculations that would be required if you were to calculate the R value in stages. Second, there is more than one way to calculate the R value, but these are all mathematically equivalent, so you shouldn't worry if you don't recognize the equation used here. Third, in the "Result Details & Calculations" box, you'll find what we've called a cross-check value, which is the R value calculated using an algorithm supplied by the Meta Numerics statistical library. This should be identical to the value that we've calculated.

Note: If you want to calculate a P value from your R score, we have a calculator here (before clicking, remember to note your r score and record any calculation details you require).

X Values	Y Values
87	76
66	74
74	85
69	56
67	54
83	63
61	55
58	52
82	45
72	52
68	74
65	50
58	47
69	30
67	56
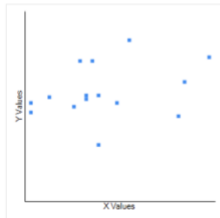
$X - M_x$	$Y - M_y$	$(X - M_x)^2$	$(Y - M_y)^2$	$(X - M_x)(Y - M_y)$
17.267	18.067	298.138	326.404	311.951
-3.733	16.067	13.938	258.138	-59.982
4.267	27.067	18.204	732.604	115.484
-0.733	-1.933	0.538	3.738	1.418
-2.733	-3.933	7.471	15.471	10.751
13.267	5.067	176.004	25.671	67.218
-8.733	-2.933	76.271	8.604	25.618
-11.733	-5.933	137.671	35.204	69.618
12.267	-12.933	150.471	167.271	-158.649
2.267	-5.933	5.138	35.204	-13.449
-1.733	16.067	3.004	258.138	-27.849
-4.733	-7.933	22.404	62.938	37.551
-11.733	-10.933	137.671	119.538	128.284
-0.733	-27.933	0.538	780.271	20.484
-2.733	-1.933	7.471	3.738	5.284
Mx: 69.733	My: 57.933	Sum: 1054.933	Sum: 2832.933	Sum: 533.733

Result Details & Calculation

X Values
Σ = 1046
Mean = 69.733
$\Sigma(X - M_x)^2 = SS_x = 1054.933$

Y Values
Σ = 869
Mean = 57.933
$\Sigma(Y - M_y)^2 = SS_y = 2832.933$

X and Y Combined
N = 15
$\Sigma(X - M_x)(Y - M_y) = 533.733$

R Calculation
$r = \Sigma((X - M_y)(Y - M_x)) / \sqrt{((SS_x)(SS_y))}$

$r = 533.733 / \sqrt{((1054.933)(2832.933))} = 0.3087$

Meta Numerics (cross-check)
r = 0.3087

Key

X: X Values
Y: Y Values
M_x: Mean of X Values
M_y: Mean of Y Values
$X - M_x$ & $Y - M_y$: Deviation scores
$(X - M_x)^2$ & $(Y - M_y)^2$: Deviation Squared
$(X - M_x)(Y - M_y)$: Product of Deviation Scores

278

Annexure Epic 4-4.6.2-Agile Maturity Pearson Correlations

Pearson Correlation Coefficient Calculator

The value of R is: 0.0875.

Want to know how to report Pearson's *r* in your work? (Opens in a new tab so you don't lose your calculation.)

[How to report Pearson's *r* (APA)]

Explanation of results

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Note: If you want to calculate a P value from your R score, we have a calculator here (before clicking, remember to note your r score and record any calculation details you require).

X Values	Y Values
38	91
38	58
27	54
12	47
12	30
43	25
45	56
36	63
21	91
41	45
25	67
34	80
16	49
30	85
30	78
30	85

$X - M_x$	$Y - M_y$	$(X - M_x)^2$	$(Y - M_y)^2$	$(X - M_x)(Y - M_y)$
8.125	28.250	66.016	798.062	229.531
8.125	-4.750	66.016	22.562	-38.594
-2.875	-8.750	8.266	76.562	25.156
-17.875	-15.750	319.516	248.062	281.531
-17.875	-32.750	319.516	1072.562	585.406
13.125	-37.750	172.266	1425.062	-495.469
15.125	-6.750	228.766	45.562	-102.094
6.125	0.250	37.516	0.062	1.531
-8.875	28.250	78.766	798.062	-250.719
11.125	-17.750	123.766	315.062	-197.469
-4.875	4.250	23.766	18.062	-20.719
4.125	17.250	17.016	297.562	71.156
-13.875	-13.750	192.516	189.062	190.781
0.125	22.250	0.016	495.062	2.781
0.125	15.250	0.016	232.562	1.906
0.125	22.250	0.016	495.062	2.781
Mx: 29.875	My: 62.750	Sum: 1653.750	Sum: 6529.000	Sum: 287.500

Result Details & Calculation

X Values
Σ = 478
Mean = 29.875
$\Sigma(X - M_x)^2 = SS_x = 1653.75$

Y Values
Σ = 1004
Mean = 62.75
$\Sigma(Y - M_y)^2 = SS_y = 6529$

X and Y Combined
$N = 16$
$\Sigma(X - M_x)(Y - M_y) = 287.5$

R Calculation
$r = \Sigma((X - M_y)(Y - M_x)) / \sqrt{((SS_x)(SS_y))}$

$r = 287.5 / \sqrt{((1653.75)(6529))} = 0.0875$

Meta Numerics (cross-check)
$r = 0.0875$

Key
X: X Values
Y: Y Values
M_x: Mean of X Values
M_y: Mean of Y Values
$X - M_x$ & $Y - M_y$: Deviation scores
$(X - M_x)^2$ & $(Y - M_y)^2$: Deviation Squared
$(X - M_x)(Y - M_y)$: Product of Deviation Scores

Pearson Correlation Coefficient Calculator

The value of R is: 0.3105.

Want to know how to report Pearson's *r* in your work? (Opens in a new tab so you don't lose your calculation.)
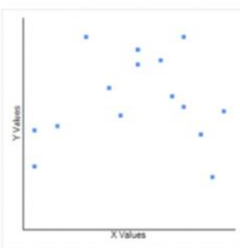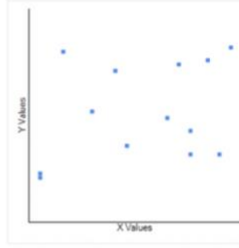
[How to report Pearson's *r* (APA)]

Explanation of results

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Note: If you want to calculate a P value from your R score, we have a calculator here (before clicking, remember to note your r score and record any calculation details you require).

X Values	Y Values
38	43
27	36
38	32
12	21
12	23
43	32
45	82
36	74
21	52
41	76
25	71
34	49
16	80

$X - M_x$	$Y - M_y$	$(X - M_x)^2$	$(Y - M_y)^2$	$(X - M_x)(Y - M_y)$
8.154	-8.615	66.485	74.225	-70.249
-2.846	-15.615	8.101	243.840	44.444
8.154	-19.615	66.485	384.763	-159.941
-17.846	-30.615	318.485	937.302	546.367
-17.846	-28.615	318.485	818.840	510.675
13.154	-19.615	173.024	384.763	-258.018
15.154	30.385	229.639	923.225	460.444
6.154	22.385	37.870	501.071	137.751
-8.846	0.385	78.254	0.148	-3.402
11.154	24.385	124.408	594.609	271.982
-4.846	19.385	23.485	375.763	-93.941
4.154	-2.615	17.254	6.840	-10.864
-13.846	28.385	191.716	805.686	-393.018
Mx: 29.846	My: 51.615	Sum: 1653.692	Sum: 6051.077	Sum: 982.231

Result Details & Calculation

X Values
Σ = 388
Mean = 29.846
$\Sigma(X - M_x)^2 = SS_x = 1653.692$

Y Values
Σ = 671
Mean = 51.615
$\Sigma(Y - M_y)^2 = SS_y = 6051.077$

X and Y Combined
$N = 13$
$\Sigma(X - M_x)(Y - M_y) = 982.231$

R Calculation
$r = \Sigma((X - M_y)(Y - M_x)) / \sqrt{((SS_x)(SS_y))}$

$r = 982.231 / \sqrt{((1653.692)(6051.077))} = 0.3105$

Meta Numerics (cross-check)
$r = 0.3105$

Key
X: X Values
Y: Y Values
M_x: Mean of X Values
M_y: Mean of Y Values
$X - M_x$ & $Y - M_y$: Deviation scores
$(X - M_x)^2$ & $(Y - M_y)^2$: Deviation Squared
$(X - M_x)(Y - M_y)$: Product of Deviation Scores

Maturity Pearson Correlations

Pearson Correlation Coefficient Calculator

The value of R is: 0.0875.

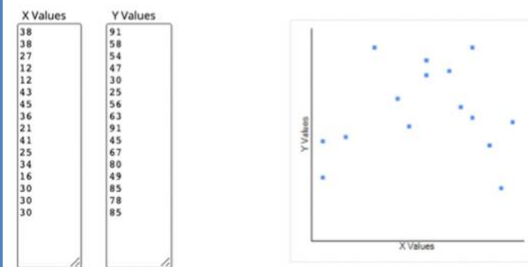Want to know how to report Pearson's *r* in your work? (Opens in a new tab so you don't lose your calculation.)

How to report Pearson's *r* (APA)

Explanation of results

As you have probably already noticed, the output of this calculator is... verbose. Although most of the information provided below is self-explanatory, there are a few things worth noting. First, the five text boxes spread across the middle of the page represent the calculations that would be required if you were to calculate the R value in stages. Second, there is more than one way to calculate the R value, but these are all mathematically equivalent, so you shouldn't worry if you don't recognize the equation used here. Third, in the "Result Details & Calculations" box, you'll find what we've called a cross-check value, which is the R value calculated using an algorithm supplied by the Meta Numerics statistical library. This should be identical to the value that we've calculated.

Note: If you want to calculate a P value from your R score, we have a calculator here (before clicking, remember to note your r score and record any calculation details you require).

X Values	Y Values
38	91
38	58
27	54
12	47
12	30
43	25
45	56
36	63
21	91
41	45
25	67
34	80
16	49
30	85
30	78
30	85

$X - M_x$	$Y - M_y$	$(X - M_x)^2$	$(Y - M_y)^2$	$(X - M_x)(Y - M_y)$
8.125	28.250	66.016	798.062	229.531
8.125	-4.750	66.016	22.562	-38.594
-2.875	-8.750	8.266	76.562	25.156
-17.875	-15.750	319.516	248.062	281.531
-17.875	-32.750	319.516	1072.562	585.406
13.125	-37.750	172.266	1425.062	-495.469
15.125	-6.750	228.766	45.562	-102.094
6.125	0.250	37.516	0.062	1.531
-8.875	28.250	78.766	798.062	-250.719
11.125	-17.750	123.766	315.062	-197.469
-4.875	4.250	23.766	18.062	-20.719
4.125	17.250	17.016	297.562	71.156
-13.875	-13.750	192.516	189.062	190.781
0.125	22.250	0.016	495.062	2.781
0.125	15.250	0.016	232.562	1.906
0.125	22.250	0.016	495.062	2.781
Mx: 29.875	**My: 62.750**	**Sum: 1653.750**	**Sum: 6529.000**	**Sum: 287.500**

Result Details & Calculation

X Values
$\Sigma = 478$
Mean = 29.875
$\Sigma(X - M_x)^2 = SS_x = 1653.75$

Y Values
$\Sigma = 1004$
Mean = 62.75
$\Sigma(Y - M_y)^2 = SS_y = 6529$

X and Y Combined
$N = 16$
$\Sigma(X - M_x)(Y - M_y) = 287.5$

R Calculation
$r = \Sigma((X - M_y)(Y - M_x)) / \sqrt{((SS_x)(SS_y))}$

$r = 287.5 / \sqrt{((1653.75)(6529))} = 0.0875$

Meta Numerics (cross-check)
$r = 0.0875$

Key

X: X Values
Y: Y Values
M_x: Mean of X Values
M_y: Mean of Y Values
$X - M_x$ & $Y - M_y$: Deviation scores
$(X - M_x)^2$ & $(Y - M_y)^2$: Deviation Squared
$(X - M_x)(Y - M_y)$: Product of Deviation Scores

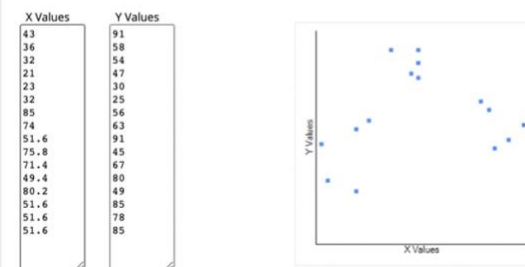### Pearson Correlation Coefficient Calculator

The value of R is: 0.1822.

Want to know how to report Pearson's *r* in your work? (Opens in a new tab so you don't lose your calculation.)

How to report Pearson's *r* (APA)

Explanation of results

As you have probably already noticed, the output of this calculator is... verbose. Although most of the information provided below is self-explanatory, there are a few things worth noting. First, the five text boxes spread across the middle of the page represent the calculations that would be required if you were to calculate the R value in stages. Second, there is more than one way to calculate the R value, but these are all mathematically equivalent, so you shouldn't worry if you don't recognize the equation used here. Third, in the "Result Details & Calculations" box, you'll find what we've called a cross-check value, which is the R value calculated using an algorithm supplied by the Meta Numerics statistical library. This should be identical to the value that we've calculated.

Note: If you want to calculate a P value from your R score, we have a calculator here (before clicking, remember to note your r score and record any calculation details you require).

X Values	Y Values
43	91
36	58
32	54
21	47
23	30
32	25
85	56
74	63
51.6	91
75.8	45
71.4	67
49.4	80
80.2	49
51.6	85
51.6	78
51.6	85

$X - M_x$	$Y - M_y$	$(X - M_x)^2$	$(Y - M_y)^2$	$(X - M_x)(Y - M_y)$
-8.825	28.250	77.881	798.062	-249.306
-15.825	-4.750	250.431	22.562	75.169
-19.825	-8.750	393.031	76.562	173.469
-30.825	-15.750	950.181	248.062	485.494
-28.825	-32.750	830.881	1072.562	944.019
-19.825	-37.750	393.031	1425.062	748.394
33.175	-6.750	1100.581	45.562	-223.931
22.175	0.250	491.731	0.062	5.544
-0.225	28.250	0.051	798.062	-6.356
23.975	-17.750	574.801	315.062	-425.556
19.575	4.250	383.181	18.062	83.194
-2.425	17.250	5.881	297.562	-41.831
28.375	-13.750	805.141	189.062	-390.156
-0.225	22.250	0.051	495.062	-5.006
-0.225	15.250	0.051	232.562	-3.431
-0.225	22.250	0.051	495.062	-5.006
Mx: 51.825	**My: 62.750**	**Sum: 6256.950**	**Sum: 6529.000**	**Sum: 1164.700**

Result Details & Calculation

X Values
$\Sigma = 829.2$
Mean = 51.825
$\Sigma(X - M_x)^2 = SS_x = 6256.95$

Y Values
$\Sigma = 1004$
Mean = 62.75
$\Sigma(Y - M_y)^2 = SS_y = 6529$

X and Y Combined
$N = 16$
$\Sigma(X - M_x)(Y - M_y) = 1164.7$

R Calculation
$r = \Sigma((X - M_y)(Y - M_x)) / \sqrt{((SS_x)(SS_y))}$

$r = 1164.7 / \sqrt{((6256.95)(6529))} = 0.1822$

Meta Numerics (cross-check)
$r = 0.1822$

Key

X: X Values
Y: Y Values
M_x: Mean of X Values
M_y: Mean of Y Values
$X - M_x$ & $Y - M_y$: Deviation scores
$(X - M_x)^2$ & $(Y - M_y)^2$: Deviation Squared
$(X - M_x)(Y - M_y)$: Product of Deviation Scores

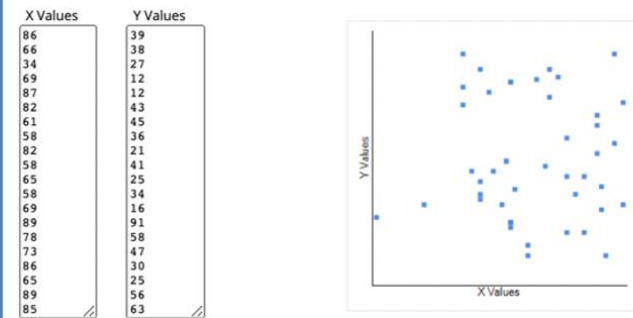## Pearson Correlation Coefficient Calculator

The value of R is: 0.004.

Want to know how to report Pearson's *r* in your work? (Opens in a new tab so you don't lose your calculation.)

| How to report Pearson's *r* (APA) |

Explanation of results

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Note: If you want to calculate a P value from your R score, we have a calculator here (before clicking, remember to note your r score and record any calculation details you require).

X Values	Y Values
86	39
66	38
34	27
69	12
87	12
82	43
61	45
58	36
82	21
58	41
65	25
58	34
69	16
89	91
78	58
73	47
86	30
65	25
89	56
85	63

$X - M_x$	$Y - M_y$	$(X - M_x)^2$	$(Y - M_y)^2$	$(X - M_x)(Y - M_y)$
3.773	35.114	14.233	118.513	−171.708
−16.227	28.114	263.324	141.286	50.247
−12.227	35.114	149.506	523.786	829.111
7.773	−6.886	60.415	1435.377	46.497
9.773	−13.886	95.506	1435.377	−635.458
20.773	−17.886	431.506	47.422	−81.071
7.773	−28.886	60.415	23.877	45.088
−5.227	−26.886	27.324	192.831	169.792
−7.227	−17.886	52.233	834.422	−340.071
5.773	32.114	33.324	78.967	108.656
3.773	24.114	14.233	619.331	130.088
14.773	2.114	218.233	252.377	194.247
−10.227	26.114	104.597	1148.286	41.588
−16.227	21.114	263.324	1690.331	771.815
−6.227	−0.886	38.779	65.831	63.065
−5.227	30.114	27.324	8.331	−8.003
0.773	31.114	0.597	395.467	−313.662
20.773	22.114	431.506	619.331	130.088
−25.227	−17.886	636.415	37.377	114.770
			171.967	193.724
Mx: 70.227	My: 49.886	Sum: 7641.727	1690.331	−667.163

Result Details & Calculation

X Values
$\Sigma = 3090$
Mean = 70.227
$\Sigma(X - M_x)^2 = SS_x = 7641.727$

Y Values
$\Sigma = 2195$
Mean = 49.886
$\Sigma(Y - M_y)^2 = SS_y = 23878.432$

X and Y Combined
$N = 44$
$\Sigma(X - M_x)(Y - M_y) = 54.136$

R Calculation
$r = \Sigma((X - M_y)(Y - M_x)) / \sqrt{((SS_x)(SS_y))}$

$r = 54.136 / \sqrt{((7641.727)(23878.432))} = 0.004$

Meta Numerics (cross-check)
$r = 0.004$

Key

X: X Values
Y: Y Values
M_x: Mean of X Values
M_y: Mean of Y Values
$X - M_x$ & $Y - M_y$: Deviation scores
$(X - M_x)^2$ & $(Y - M_y)^2$: Deviation Squared
$(X - M_x)(Y - M_y)$: Product of Deviation Scores

Sanet Strydom

23 July 2020

Interview

Miro. /

SOT report -

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New Hope School - Rits.
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Epic 6-Complementary insights to recommendations

Annexure Epic 6-6.1 Proposed progressive EPL emerging framework
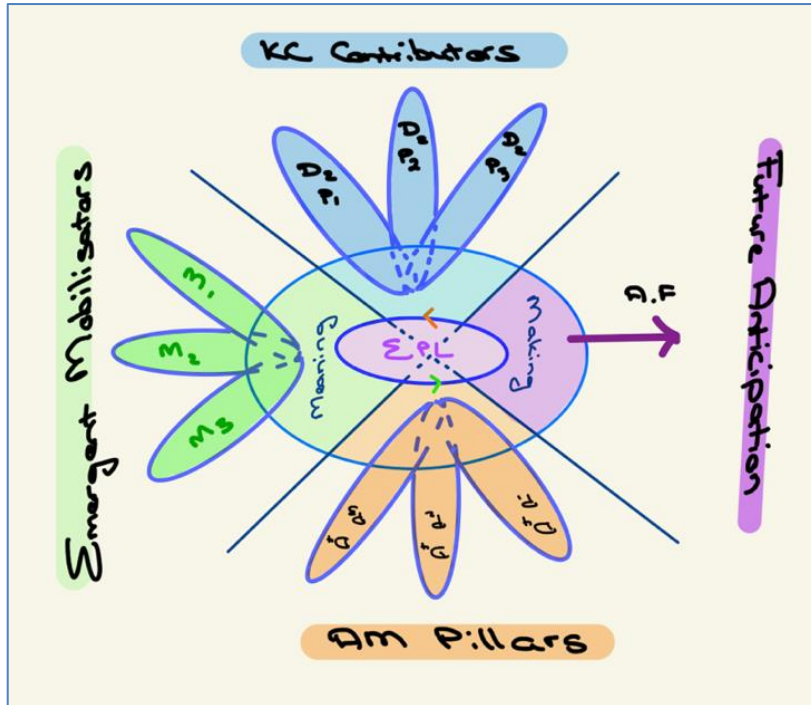
Figure 6.4-Proposed progressive EPL emerging framework (The Writer, 2020) .
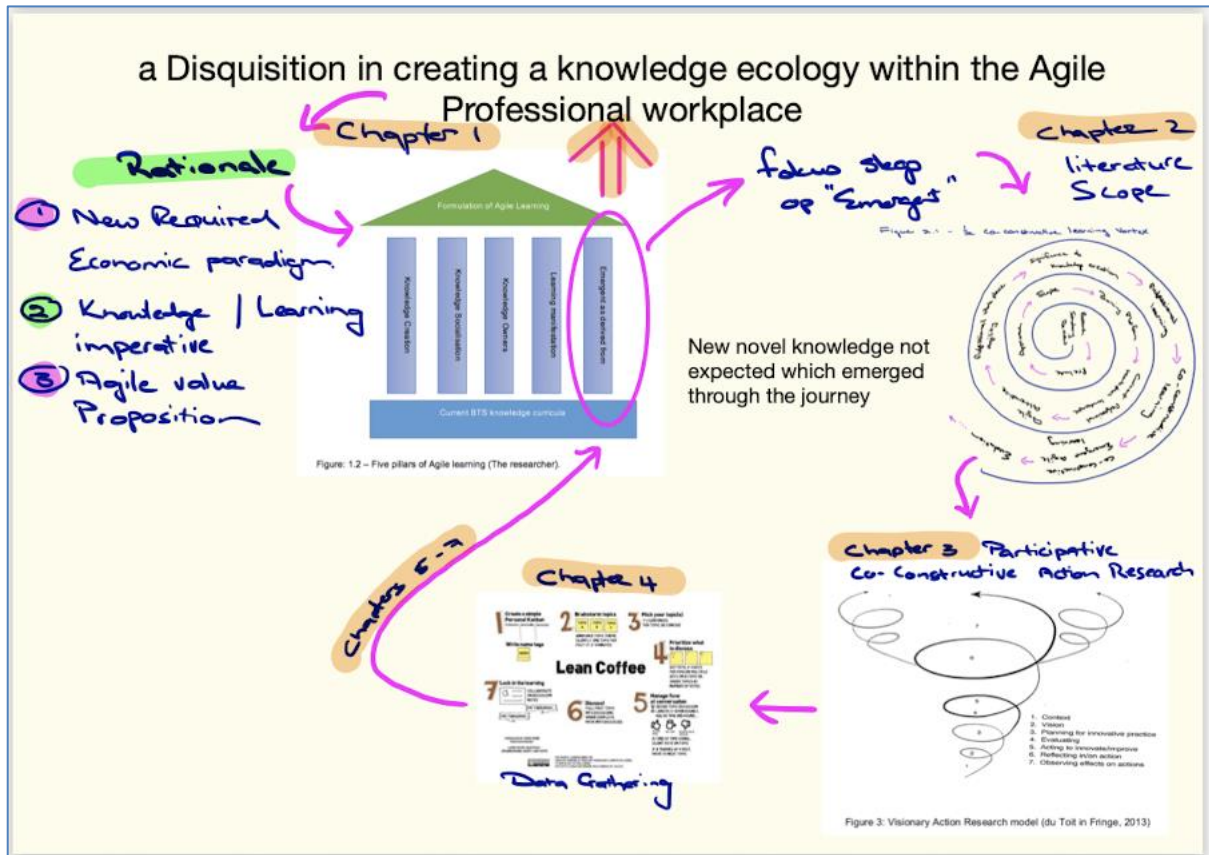
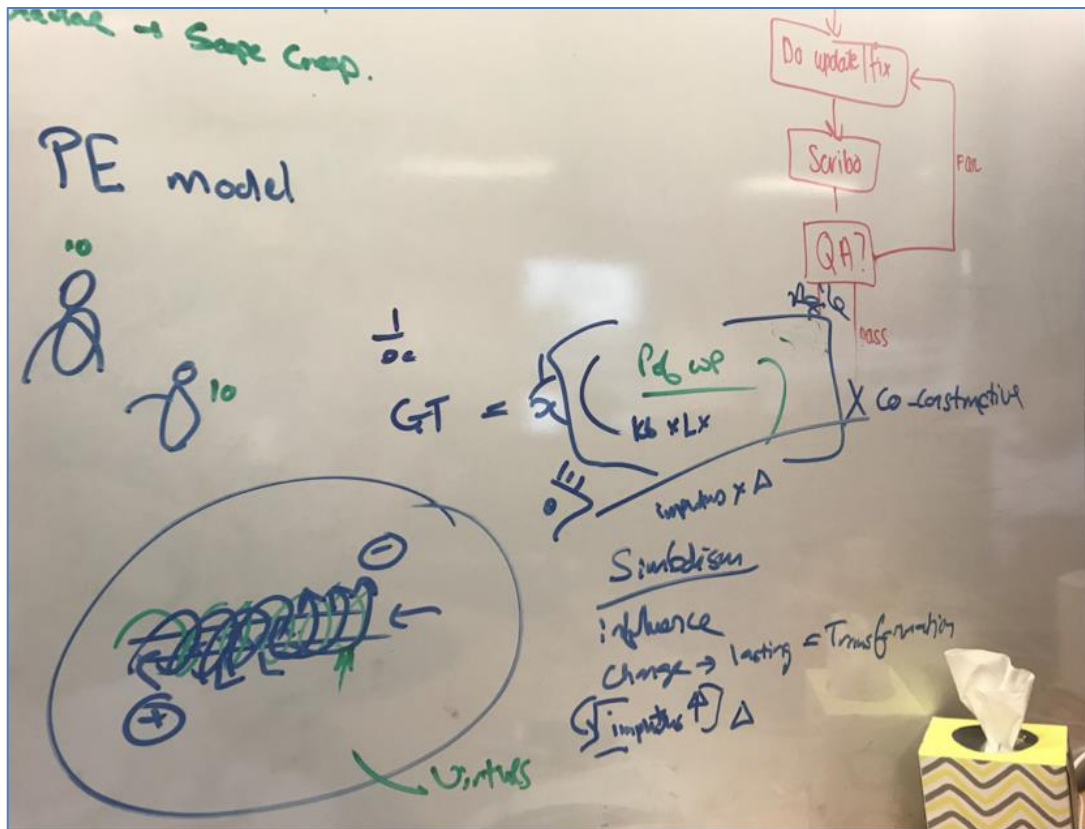Figure 6.6a-EPL research design (The Writer, 2017).
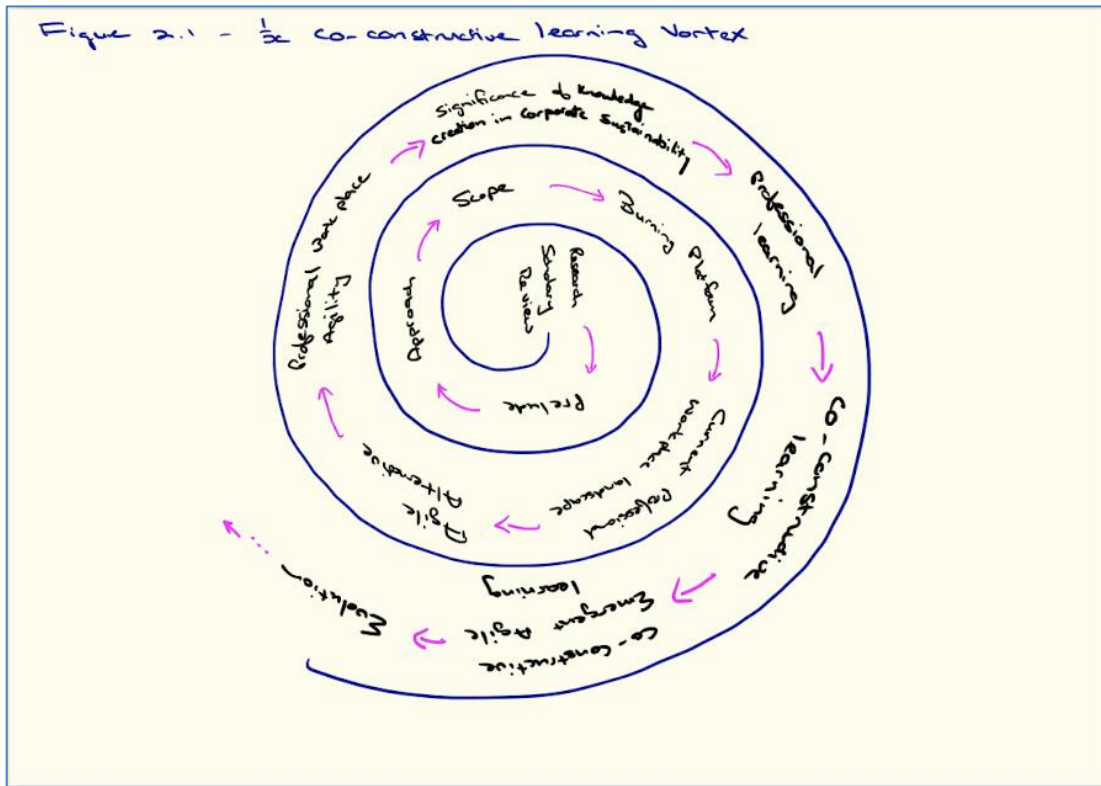
Figure 6.6b-EPL concept design (The Writer, 2017).

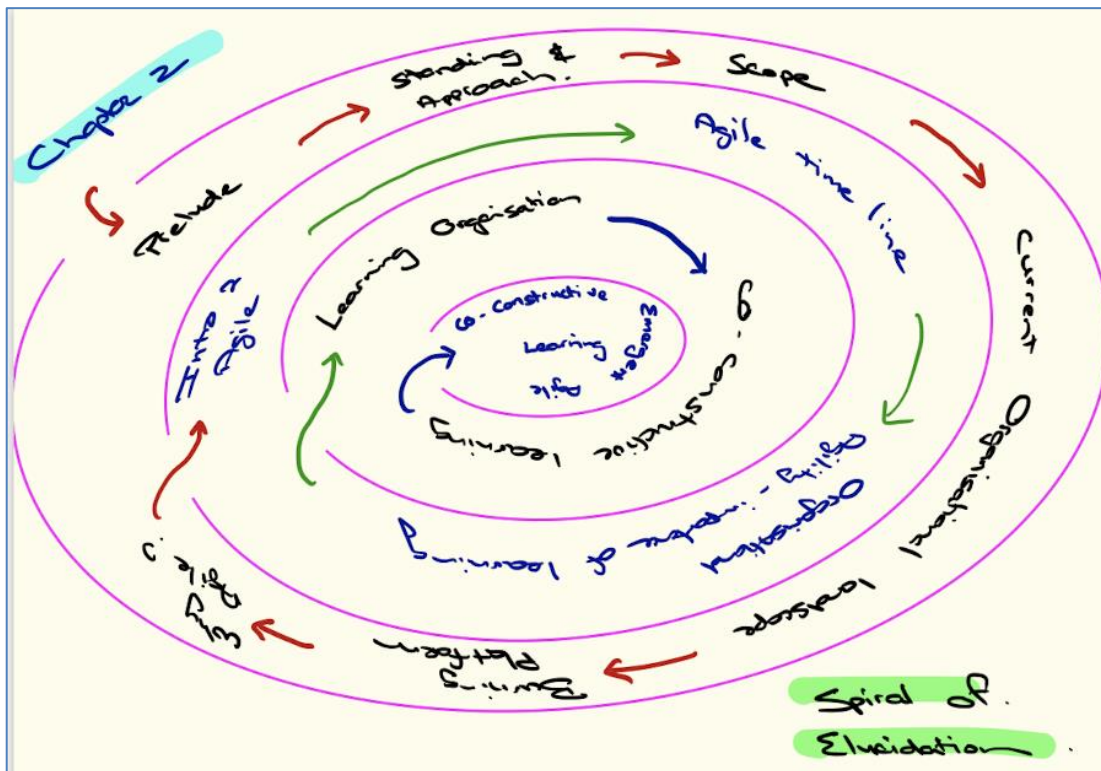Figure 6.6c. i-EPL evolution design (The Writer, 2017).

Figure 6.6c. ii-EPL evolution design (The Writer, 2017).

But, my child, let me give you some further advice: Be careful, for writing books is endless, and much study wears you out.

Ecclesiastes 12:12