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Abstract

Purpose: This study seeks to relate the practice of organisational learning (OL) in small and medium-sized enterprises (SMEs) to the organisational life cycle (OLC), contextualising the differential aspects of an integrated relationship between them.

Design/methodology/approach: It is a mixed method study with two consecutive phases. In Phase I, 30 Hong Kong SMEs identified through theoretical sampling were classified into three life-cycle stages – inception, high-growth, and maturity. In Phase II, their employees' learning practices (grouped by learning levels) were statistically compared using the Analysis of Variance (ANOVA) and then followed up for confirmation with qualitative semi-structured interviews.

Findings: This study uniquely suggests the nature of a relationship between SME organisational learning and the OLC. Empirical results show that three out of the four learning levels (individual, group, organisational, and inter-organisational) practised in SMEs are varied in importance between life-cycle stages.

Research limitations/implications: Comparative studies are encouraged in other parts of the world to strengthen the findings – with either SMEs or large organisations.

Practical implications: The study informs SME owner/managers about what is important for employee learning at different business stages so that appropriate learning strategies or human resource development (HRD) policies can be formulated in a timely fashion to promote competitiveness.

Originality/value: It is among the first studies to connect SME learning with organisational growth. The relationships found serve as a sound foundation for further empirical investigations.

Keywords: learning levels, organisational learning, organisational life cycle, SMEs.

Article classification: Research paper.

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Introduction

Organisational learning (OL), if effective, is a source of innovation and creating competitive advantage for a business (Eddy *et al*., 2006; Dai, 2012). The effectiveness of organisational learning critically depends on how individual employees practise and share learning for knowledge at work, and how the firm supports a learning-conducive workplace in the long run (Renta-Davids *et al*., 2014). If knowledge is retained and reused strategically within the firm, it becomes a powerhouse not just for firm growth but also for firm sustainability (Smith, 2012). Recent research finds that the work environment plays a vital role in determining the quality of organisational learning (Wang and Ellinger, 2011; Lancaster and Di Milia, 2014).

Organisational life cycle (OLC) theory is concerned with organisational development in terms of internal resources, finance, firm size, structure, management priorities, and the scope of business networks (e.g. Smith *et al*., 1985; Hanks, 1990; Greiner, 1998). The theory classifies firms into different life-cycle (growth) stages based on the firm's characteristics at a given point in time, which can be collectively described as the firm's work environment.

This study aims at examining how organisational learning may differ across life-cycle stages (i.e. in distinct work environments), how the work environment is a driver for how organisational learning *can be* practised, in terms of its quality. This has implications for the competitiveness of a firm over time. As the literature only discusses the flow/interaction of organisational learning at three to four levels (individual, group, organisational, and inter-

organisational) in a workplace (e.g. Crossan *et al*., 1999; Jones and Macpherson, 2006), this study adds a new dimension of differentiating the practice of these learning levels at different life-cycle stages. It is among the first studies to relate organisational learning to the organisational life cycle using a sample of small and medium-sized enterprises (SMEs), with the empirical findings and implications for SME owner/managers to consider in practice. SMEs are the focus of this study because this type of firm tends to experience relatively informal conditions for various workplace practices such as employee learning, human resource management and business planning, but constitutes a high percentage of businesses in most economies (Saru, 2007; Gasiorowski-Denis, 2015). Moreover, SMEs are highly varied in nature with special business barriers such as limited resources and capabilities and learning awareness issues (CIPD, 2008), which means a need for understanding more about how they learn as they grow. Therefore, if organisational learning is important for a firm's development, it is even more crucial to investigate SMEs in these areas.

Organisational learning and SMEs

While organisational learning has been discussed in the literature for decades, little is known about it in SMEs (Spicer and Sadler-Smith, 2006; Michna, 2009). The fact is that SMEs' business practices (including learning) are dependent on a wide range of *individualised* factors – from resources to capabilities – making it difficult to identify the key learning processes that would allow for their systematic development of organisational learning (Higgins and Mirza, 2012).

The concept of organisational learning has been primarily described as a collectivity of individual learning and human resource development (HRD) policies, where learning starts from individuals, with individuals as "agents" for organisations to learn, relearn, and accumulate

business intelligence (Wang and Ahmed, 2003). Large organisations recognise the importance of developing organisational infrastructure and HRD initiatives to institutionalise learning within the workplace. However, non-systematic and inconsistent practices of learning are still common in SMEs where firm infrastructure and HR-related solutions are relatively weak (Saru, 2007). A recent study (Chadwick and Raver, 2015) reveals that individuals' motivation for personal achievement goals plays a key role in shaping how they learn at work, and their "unique" learning processes can become institutionalised within the organisation. This happens regardless of whether organisational learning has "formally" been in place or not.

Another view of organisational learning is that it focuses on best practices in the workplace to drive learning as a corporate strategy to help manage change through knowledge and creative solutions (Dimitriades, 2005). This idea is particularly relevant to most SMEs because they often strive to survive in competition through innovation, learning and adaption to changes in the marketplace (Graham and Nafukho, 2007). Recent studies have stressed the positive effect of organisational learning on innovation and/or firm performance in the SME context (Michna, 2009; Csath, 2012; Frank *et al*., 2012; Wang *et al*., 2015).

A classic discussion on SME organisational learning was put forward by Jones and Macpherson (2006), who extended the 4I framework developed by Crossan *et al*. (1999). Jones and Macpherson (2006, p. 156) assert that the 4I framework is highly applicable to how SMEs learn, from individual, to group, to organisational levels of learning, which "depends both on developing personal knowledge and skills (human capital), and on having effective systems for knowledge sharing (social capital)". However, given SMEs' limited internal resources, they are often forced to leverage external sources as well, such as other SMEs, suppliers and customers, creating the potential for inter-organisational learning through networking (Jones and

Macpherson, 2006). Hence, Jones and Macpherson (2006) added this idea to the 4I, producing a 5I framework. Figure 1 illustrates the extension of 4I into the 5I framework for the SME case:

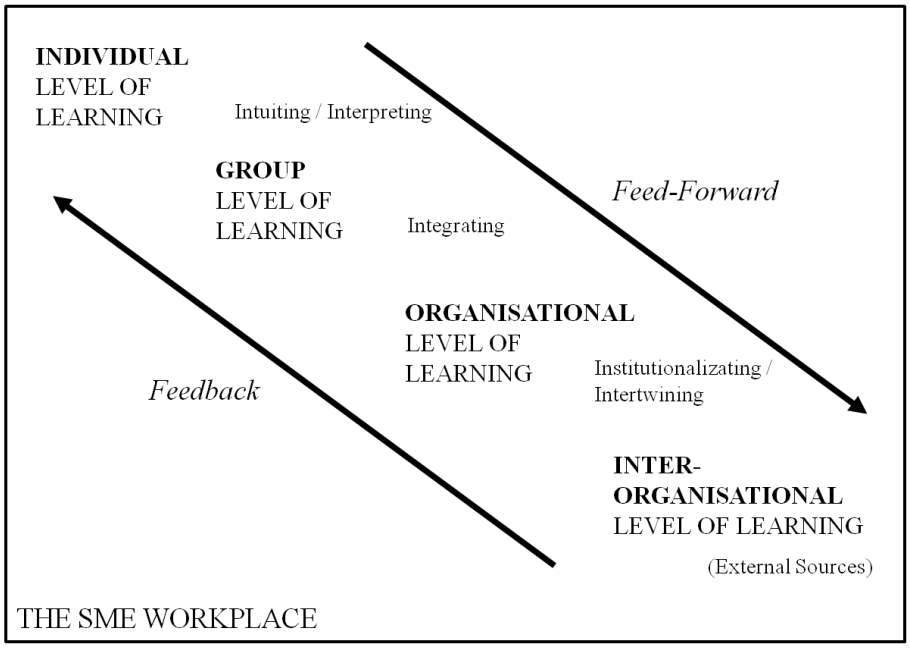

Figure 1. The 5I framework of organisational learning for SMEs (adapted from Jones and Macpherson, 2006, p. 169).

As illustrated in Figure 1, the framework discusses the dynamics of SME learning at the individual, group, organisational and inter-organisational levels through the 5I process – intuiting, interpreting, integrating, institutionalising, and intertwining. Each micro process carries different inputs and outcomes, and is triggering from one to the other in a connected fashion over the four levels (feed-forward and feedback processes) that explain the structure of how organisational learning occurs in a loop. In other words, employees drive new learning that makes their organisation "learn" (feed-forward), and what has been learnt with the organisation is also fed back to affect how these employees think and act next time.

Jones and Macpherson's (2006) 5I framework suggests an "uniform" view of organisational learning process in mature SMEs. It has been applied in other SME studies, for

example, on formal training development (Macpherson and Jayawarna, 2007), managerial competencies (Breslin, 2010) and entrepreneurial learning (Breslin and Jones, 2012). Fundamentally, the 5I framework does *not* consider how different employees would perceive the importance of each learning level in practice during firm growth. The "differential" view should promote a better understanding of how and why employees choose their ways to learn, helping the firm align with proper learning strategies and/or HRD policies in a timely fashion. Therefore, this study also incorporates the idea of the organisational life cycle.

Organisational life cycle theory

Organisational life cycle theory is traditionally built on the concept of growth stages that organisations evolve through over time in a predictable, linear and consistent manner. As firms move through these stages, they experience different organisational characteristics, problems, structural configurations and strategic/management priorities (Smith *et al*., 1985; Greiner, 1998). These changing characteristics are also experienced by the process/functional changes within an organisation across the OLC (Hanks, 1990). Most stage models share a common underlying logic that organisations have to overcome successive challenges in stages in order to make growth possible and continuous. Given these specific characteristics, organisations can assess their current business performance, predict what would follow in different stages of development, and so provide appropriate responses in a timely manner to manage growth more effectively (Moy and Luk, 2003).

While organisational life cycle theory could be of value to organisations, there are a variety of models – some predict only three stages, while others suggest as many as ten (Rutherford *et al*., 2003). Miller and Friesen (1983; 1984) studied and integrated previous OLC models, and, as a result, proposed five generic growth stages: birth, growth, maturity, revival,

and decline, while claiming that not all the organisations would move through the same stages in a linear sequence. Smith *et al*. (1985) suggested a simpler framework consisting of three common stages for organisations known as *inception*, *high-growth*, and *maturity*. Drazin and Kazanjian (1990) revisited Miller and Friesen's (1983; 1984) five-stage model with additional tests, and concluded that the stages of *birth*, *growth*, and *maturity* were empirically supported, and resembled Smith *et al*.'s (1985) common framework. In spite of naming the representative stages differently, the works of Smith *et al*. (1985) and Drazin and Kazanjian (1990) lend strong evidence to a *usable* three-stage model that is generic for all organisations. These three common stages, described with specific stage characteristics (see the next section), help develop the hypotheses of this study and identify the life-cycle stage of each SME in the sample.

Conceptual framework and hypotheses

This study borrows the 5I framework of SME organisational learning by Jones and Macpherson (2006) and the common framework of the organisational life cycle by Smith *et al*. (1985). Both frameworks fit the study as they are generically tested and applied for SMEs. Figure 2 combines them conceptually to provide a framework for the study:

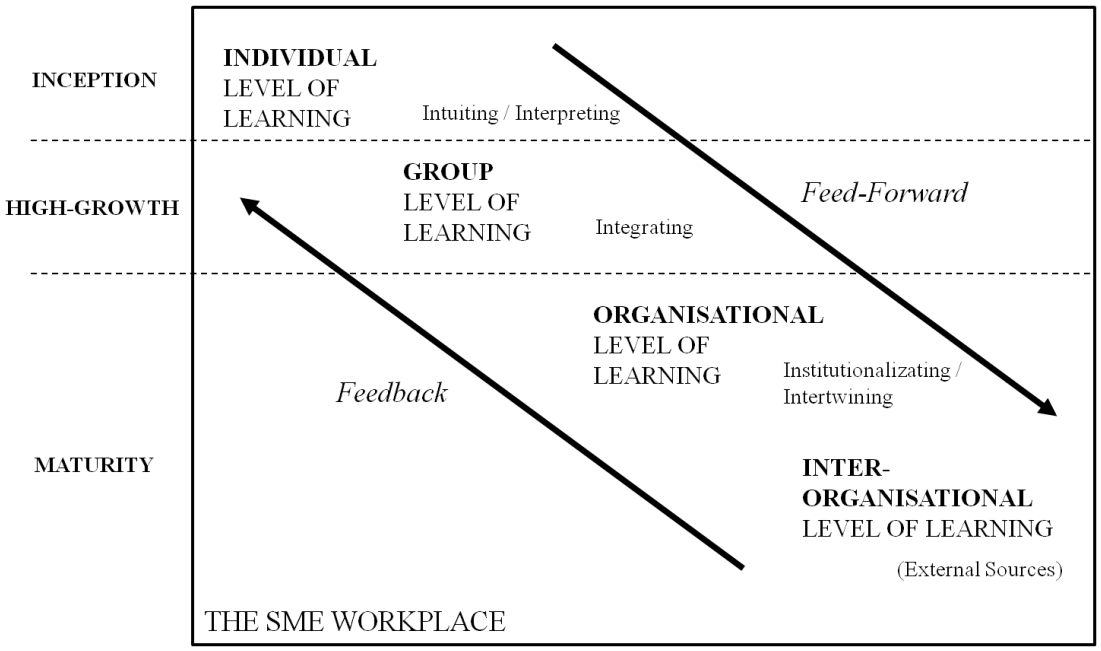

Figure 2. The conceptual framework of the study *before research*, adapted from Jones and Macpherson (2006) and Smith *et al*. (1985).

While the 5I framework describes the learning picture of SMEs, it is *not* concerned about the organisational life cycle of the firm. The conceptual framework suggests that the levels of learning (the choices of learning practices) *can* vary in SMEs at different life-cycle stages due to different stage characteristics/constraints. In other words, SMEs are predicted to have a different emphasis (*perceptions of importance*) in using the four learning levels across the organisational life cycle.

Inception

Inception is viewed as the beginning stage of the organisational life cycle. Firms at this stage are young, smaller, unstructured, flexible, and informal. Their primary objective is to secure necessary resources, build business networks and launch the basic operations to ensure sustainability (Smith *et al*., 1985). Coordination among staff is weak since the internal structure

of the firm is insufficiently developed to support the teamwork function (Galbraith, 1982). A hypothesis is suggested:

- Hypothesis 1: The individual level of learning is more important in SMEs at inception than it is at other life-cycle stages.

High-growth

This stage is a sign of business success after overcoming the difficulties of founding a productive firm. A major characteristic is the significance of the overall coordination change in employees, where work processes become moderately formal, systematic and dependent (Smith *et al*., 1985). The firm size increases rapidly, as more trained professionals/managers are hired to help share the leadership role in managing the increased complexity of the firm (Kazanjian and Drazin, 1990; Hanks *et al*., 1993). A hypothesis is suggested:

- Hypothesis 2: The group level of learning is more important in SMEs at high-growth than it is at other life-cycle stages.

Maturity

The maturity stage arrives when the firm possesses a formal organisational structure, supported by established office systems, regulations and work documentation that lead to norms and routines of practices (Hanks and Chandler, 1994). Peer coordination for work is common – both inside and outside of the company. Being more hierarchical, resourceful and bureaucratic in nature, firms at this stage enjoy an internal operation which is stable, efficient and decentralized (Scott and Bruce, 1987). In this view, the technical efficiency in operation and the political support in the workplace are emphasized by management to cultivate innovation and boost new

growth (Smith *et al*., 1985). As such, longer-term planning is exercised, external resources are strategically sought or consulted, and a team culture is established (Galbraith, 1982). Two hypotheses are suggested:

- Hypothesis 3: The organisational level of learning is more important in SMEs at maturity than it is at other life-cycle stages.
- Hypothesis 4: The inter-organisational level of learning is more important in SMEs at maturity than it is at other life-cycle stages.

Research design

A mixed method approach is adopted, leveraging both quantitative and qualitative data collection techniques for improving the findings within a single study (Tashakkori and Teddlie, 2010; Gray, 2014).

Sampling frame

The study was conducted in Hong Kong – a location with significant SME presence – over 98% of businesses are SMEs which employ about 50% of the workforce in the private sector (Hong Kong Trade and Industry Department, 2013). SMEs are defined in the Hong Kong Yearbook (2010, p. 106) as "those manufacturing businesses in Hong Kong employing fewer than 100 people, or non-manufacturing businesses with fewer than 50".

Practically no fixed number of SMEs in the sample was assigned, nor was the number of participants within each firm. All the employees in an SME, irrespective of level or role, were regarded as potential informants. Suitable/sufficient SMEs were identified through theoretical sampling, which satisfied two criteria: (1) the distribution of SMEs in the sample resembled the actual distribution of SMEs in Hong Kong in terms of industries/sectors to ensure data representativeness (source: Hong Kong Support and Consultation Centre for SMEs, 2011) and (2)

the number of SMEs classified into each life-cycle stage was comparable to satisfy hypothesis testing. The target population was therefore a non-probability quota sample of Hong Kong SMEs. The researchers searched for appropriate SMEs through contacts until the distribution (quota) requirement (by industry/sector) was met. Out of nearly 100 contacts, 30 suitable SMEs were initially prepared for the sample. The sample size was deemed appropriate for theoretical sampling (Mason, 2002). More SMEs could be added later if the two criteria above were not met.

Data collection and measures

Quantitative approach

Two consecutive phases of data collection were involved. The first phase identified the life-cycle stage of each SME in the sample. Each SME was classified into one of the three life-cycle stages (inception, high-growth, or maturity) using a self-declaring organisational life cycle (OLC) questionnaire in paper format. The questionnaire featured the stage characteristics described and tested by Smith *et al*. (1985), the contents of which were similarly used by Born (2000). The self-declaring approach was also used for identification of life-cycle stages of firms in previous studies (e.g. Smith *et al*., 1985; Born, 2000; Moy and Luk, 2003). In this study, the questionnaire was pilot-tested by a group of five SMEs to ensure validity before sending it out to all the owner/managers in the sample.

The OLC questionnaire invited SME owner/managers to self-declare their firm's life-cycle stage by answering 10 questions. A point system (1, 2 or 3) was allocated to the answers (Q.1 – Q.9) to relate to inception, high-growth or maturity respectively. A mean score of the total points gave the stage declaration of every SME while Q.10 served as a counter-check (i.e. respondents were invited to name which stage they considered their organisations to be at).

The second phase then surveyed the organisational learning practices between the three identified groups (inception, high-growth and maturity) of SMEs using an online instrument – the Learning Practices Questionnaire (LPQ). The questionnaire was developed by the researchers. It summed up the different learning practices that SMEs would possibly use in the workplace from multiple sources in the literature to ensure content credibility (Huang, 2001; ENSR, 2002; Clifford and Thorpe, 2007; CIPD, 2008). To this end, thirty-two kinds of learning practices were considered a complete list and categorised under the four different levels of learning (individual, group, organisational, and inter-organisational) as described in Jones and Macpherson's (2006) 5I framework. The LPQ was thoroughly reviewed by two experienced researchers with expertise in SME learning and two SME owner/managers to address inter-judge reliability (Gray, 2014). It was also pilot-tested online by a group of five SMEs for further improvements before making it accessible to all the SMEs in the sample.

The LPQ sought information about employees' learning practices at work. It used a 5-point likert type scale (5 = Strongly Agree; 4 = Agree; 3 = Neutral; 2 = Disagree; and 1 = Strongly Disagree) and an additional option of "99 = Approach Not Available" to collect the learning practices provided/supported by the organisation *and* measure employees' opinions on how important those learning practices would be. Each statement of learning practice on the questionnaire followed a similar structure, for example:

- "On-the-job training is important to my learning at work" (*an individual level of learning*);
- "Participating in self-directed work teams is important to my learning at work" (*a group level of learning*);
- "My organisation has a common groupware for employees to store and share business knowledge and problems, which is important to my learning at work" (*an organisational*

level of learning);

- "Networking with business partners is important to my learning at work" (*an inter-organisational level of learning*).

Qualitative approach

In the second phase, semi-structured interviews were used for developing deeper understandings of the findings. This type of mixed method design is "quantitative then qualitative" (Gray, 2014). To ensure validity of findings, snowball sampling was used during interviews, meaning that the interviewing process would continue within a firm under the "an interviewee nominates the next interviewee" fashion until data saturation was reached (Tashakkori and Teddlie, 2010). Snowballing was repeated in other SMEs at each life-cycle stage. All the interviews were audio recorded and lasted for 75 minutes on average with the same sequence and questions. Probing questions were posed when appropriate to supplement the interview question schedule. Table 1 lists the major questions seeking information about (1) the learning practices provided in the workplace and (2) employees' opinions about their learning practices.

Table 1. Major interview questions.

Set 1 – Learning practices provided in the workplace
1.1. How do you usually learn at work?
1.2. What are the learning approaches that your organisation is offering to the employees?
Set 2 – Employees' opinions about their learning practices
2.1. How effective have these learning practices been? Are they helpful to your work?

2.2. How important do you think workplace learning is to your work?

2.3. How important do you think workplace learning is to your organisation?

2.4. What are the gaps in approaches to learning in your organisation?

2.5. How would your organisation do things differently or better in order to develop you or other employees better?

2.6. Why do you opt for only some approaches for your learning given the fact that there are more alternatives within your organisation?

2.7. What other learning practices do you expect at the moment?

Raw responses from interviews went through a process of coding, linking, analysing and synthesising to develop meaningful themes (Mason, 2002). The researchers compared these themes (or patterns) of learning practices with the results from the online LPQ for further insights (and validation). The cross-stage comparisons on the importance of different learning levels was designed to enhance the contribution of the study.

Results

Quantitative OLC and LPQ

From the OLC data, a k-means cluster analysis was conducted to partition the responses of all the nine questions from the 30 SMEs into possible clusters. As a result, three distinct clusters were reported – one cluster had 11 SMEs while the other two had 10 SMEs and 9 SMEs respectively. To verify the stages, the researchers computed the frequencies of those answers for Q.10, which asked the respondents to directly choose a life-cycle stage that best described their current business. It was found that the output was supportive to the k-means cluster analysis – 11 SMEs were at inception, 10 at high-growth, and 9 at maturity. This sample was considered final since the number of firms classified into each life-cycle stage was comparable. Their firm size ranged from 6 to 62 employees, totalling 718 employees for the entire sample.

These "classified" SMEs were then put in the second phase which explored their employees' learning practices using the online LPQ. 232 responses were received (52 from inception firms, 96 from high-growth firms, and 84 from maturity firms). The response rate was 32.3% (232/718).

From the LPQ data, an Analysis of Variance (ANOVA) was conducted to compare if there were any statistically significant differences in the learning practices between inception, high-growth, and maturity. As there was only a single independent variable (factor) which was each life-cycle stage (of 3 groups), choosing the one-way ANOVA was appropriate. The dependent variable was each learning level (of 4 levels). Therefore, the one-way ANOVA sought the differences between the three life-cycle stages on each of the four learning levels. Technically, four separate one-way ANOVAs were computed, one for each learning level.

Table 2 shows the descriptive statistics of the three independent OLC groups (*Inception*, *HighGrowth*, and *Maturity*) on each of the four dependent variables – the learning levels (*Individual*, *Group*, *Org*, and *InterOrg*). The "Mean" column should be noted, which shows the overall mean score for each learning level at each life-cycle stage.

Table 2. Descriptive statistics of the one-way ANOVA.

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Min	Max
Individual	*Inception*	52	4.1360	.28499	.03952	4.0566	4.2153	3.33	4.83
	HighGrowth	96	3.9210	.25950	.02649	3.8684	3.9736	3.15	4.70
	Maturity	84	3.9995	.25613	.02795	3.9440	4.0551	3.38	4.50
	Total	232	3.9976	.27558	.01809	3.9620	4.0333	3.15	4.83
Group	*Inception*	52	3.4583	.97288	.13491	3.1875	3.7292	.00	5.00
	HighGrowth	96	3.7523	.36169	.03691	3.6790	3.8255	2.40	4.50
	Maturity	84	3.5393	.43145	.04708	3.4457	3.6329	2.40	4.50

	Total	232	3.6093	.58741	.03857	3.5333	3.6853	.00	5.00
Org	*Inception*	52	1.2019	1.64275	.22781	.7446	1.6593	.00	4.00
	HighGrowth	96	2.5885	1.73052	.17662	2.2379	2.9392	.00	5.00
	Maturity	84	2.8135	1.77318	.19347	2.4287	3.1983	.00	5.00
	Total	232	2.3592	1.83180	.12026	2.1222	2.5961	.00	5.00
InterOrg	*Inception*	52	3.6763	.62962	.08731	3.5010	3.8516	2.25	5.00
	HighGrowth	96	3.7292	.49692	.05072	3.6285	3.8299	2.25	5.00
	Maturity	84	3.6200	.53420	.05829	3.5041	3.7360	2.50	5.00
	Total	232	3.6778	.54214	.03559	3.6077	3.7479	2.25	5.00

The Levene's test was then run to check the assumption that the variances of the three OLC groups were equal for each of the learning levels. As found, the Levene's test was significant for *Group* ($p < .05$), meaning that the assumption of equal variances was violated. The Levene's test (significant or not) determines what type of post hoc tests should be conducted for the dependent variable (the learning level), provided that ANOVA (the overall *F*) is statistically significant.

Table 3 (the ANOVA table) indicates whether the overall *Fs* for the four separate one-way ANOVAs are significant or not. If the ANOVA is statistically significant, there is a difference *somewhere* along the independent variable (the life-cycle stages) on the dependent variable (the learning level). To identify which exact pairs of means (on a learning level) are significantly different between life-cycle stages, appropriate post hoc tests are required. According to the ANOVA table, the three OLC groups (inception, high-growth and maturity) differ significantly on the individual, group and organisational levels of learning ($p < .05$) (shown in bold), but *not* on the inter-organisational level.

Table 3. The ANOVA table.

		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Individual	Between Groups	1.559	2	.779	**11.167**	**.000**

	Within Groups	15.985	229	.070		
	Total	17.544	231			
Group	Between Groups	3.559	2	1.779	**5.351**	**.005**
	Within Groups	76.149	229	.333		
	Total	79.708	231			
Org	Between Groups	92.028	2	46.014	**15.426**	**.000**
	Within Groups	683.094	229	2.983		
	Total	775.123	231			
InterOrg	Between Groups	.534	2	.267	.907	.405
	Within Groups	67.361	229	.294		
	Total	67.895	231			

$p < .05$.

As post hoc tests are only required if the ANOVA is statistically significant, the researchers proceeded with the appropriate post hoc tests for the individual, group and organisational levels of learning. In terms of the choice of post hoc tests, the Tukey HSD post hoc tests should be considered if the Levene's test is not significant (for *Individual* and *Org*) while the Games-Howell post hoc tests can be used if the Levene's test is significant (for *Group*). Table 4 summarizes the significances of mean differences between life-cycle stages after post hoc tests:

Table 4. Summary of the significances of mean differences between life-cycle stages.

		Post Hoc Tests		
	Significant ANOVA?	**Between Inception and High-Growth**	**Between Inception and Maturity**	**Between High-Growth and Maturity**
Individual	Yes	.21495*	.13641*	-.07854
Group	Yes	-.29392	-.08095	.21297*
Organisational	Yes	-1.38662*	-1.61157*	-.22495
Inter-Organisational	No	Not Applicable	Not Applicable	Not Applicable

** The mean difference is significant at the 0.05 level.*

Drawing upon the information from Table 4, the results of hypothesis testing are explained as follows:

- *Hypothesis 1 is supported*. The individual level of learning differs significantly ($p < .05$) between inception and high-growth (mean difference = .21495) as well as between inception and maturity (mean difference = .13641). Both *positive* mean differences show that the individual level of learning is *more* important at inception than it is at high-growth and maturity.
- *Hypothesis 2 is partially supported*. The group level of learning differs significantly ($p < .05$) between high-growth and maturity (mean difference = .21297). The *positive* mean difference shows that the group level of learning is *more* important at high-growth than it is at maturity (but not at inception, where the mean difference between inception and high-growth is not significant).
- *Hypothesis 3 is partially supported*. The organisational level of learning differs significantly ($p < .05$) between inception and high-growth (mean difference = -1.38662) as well as between inception and maturity (mean difference = -1.61157). Both *negative* mean differences show that the organisational level of learning is *less* important at inception than it is at high-growth and maturity. In other words, the organisational level of learning is more important at maturity than it is at inception (but not at high-growth, where the mean difference between high-growth and maturity is not significant).
- *Hypothesis 4 is not supported*. There is no significant difference between life-cycle stages on the inter-organisational level of learning since the one-way ANOVA shows no statistical

significance. However, the relatively high mean scores for the inter-organisational level (see Table 2) indicate the importance of this learning level across life-cycle stages.

Qualitative interviews

Four SMEs from each life-cycle stage were randomly selected from the initial sample of 30. The total number of employees in the original sample was 54 at inception, 114 at high-growth and 164 at maturity, from which 22, 50 and 62 were interviewed respectively (i.e. 134 one-on-one interviews). As the data appeared saturated (stable) after data analysis the whole sampling exercise ended. Interviewees could be partcipants in the LPQ or not.

The qualitative findings derived from thematic analysis are found to support/enrich the quantitative results, as summarised below:

- The most typical practices in SMEs fall into the individual level of learning across life-cycle stages. Employees' learning practices are always individually driven or on the self-learning mode. No matter what learning practices or levels may be available in the workplace, they prioritise learning practices and make choices among them based on how well a practice can help their work.
    - *"No one would tell me what I should learn for work. I find out what I need and how I learn about it."*
    - *"Depending on my time and the nature of the problem in hand, I adjust the amount of my learning effort but, by all means, seek the most efficient, effective ways to learn."*
- SMEs at high-growth do more practices at the group level of learning than SMEs at other stages. Common examples are group discussions and work teams. A bonding culture is rich among colleagues and mostly discussed.
    - *"Our decisions are sometimes made quickly and more people involved will strengthen*

the quality within a shorter time."

- *"Our management team will usually sit with us every week to find out what problems we may have and what solutions we should get given our existing resources."*

- Employees undertake fewer learning practices at the organisational level because their workplaces do not have this level of learning or the organisational support is not sufficiently mature for its delivery. Although concerns are heard, they survive with other levels of learning. More company infrastructure for learning is observed in established SMEs.
  - *"There is a system in our office that posts staff guidelines or training announcements once a while. We feel that we can afford ignoring the system as it doesn't do much operation wise."*
  - *"The marketplace is demanding, as you know. Working here too long makes me feel not competitive, as our personal development programmes are limited."*
- SMEs favour the inter-organisational level of learning due to work requirements and direct benefits, regardless of life-cycles stages. Employees are always open to leverage learning resources, for example, from customers, vendors and business partners.
  - *"We get used to asking around in and out of the office for solving our problems. We like to learn in that way from peers which is basic but powerful."*
  - *"I'm doing business development, and need to work with people inside and outside the company. I learn from people and build lots of learning partnerships along the way."*
  - *"I always talk to our business network and compare our products with competitors' to identify our market position. My boss sets it as one of my learning tasks on the job."*

Discussion

Four major findings emerge from combining the quantitative and qualitative results (Table 5) and the conceptual framework of the study is revised accordingly (Figure 3):

Table 5. The four major findings of the study.

Item	Major Finding
1	The *individual level* of learning is important at all life-cycle stages but most important at inception.
2	The *group level* of learning is more important at high-growth than it is at maturity.
3	The *organisational level* of learning is more important at high-growth and maturity than it is at inception.
4	The *inter-organisational level* of learning is high at all life-cycle stages and there is no significant difference between stages.

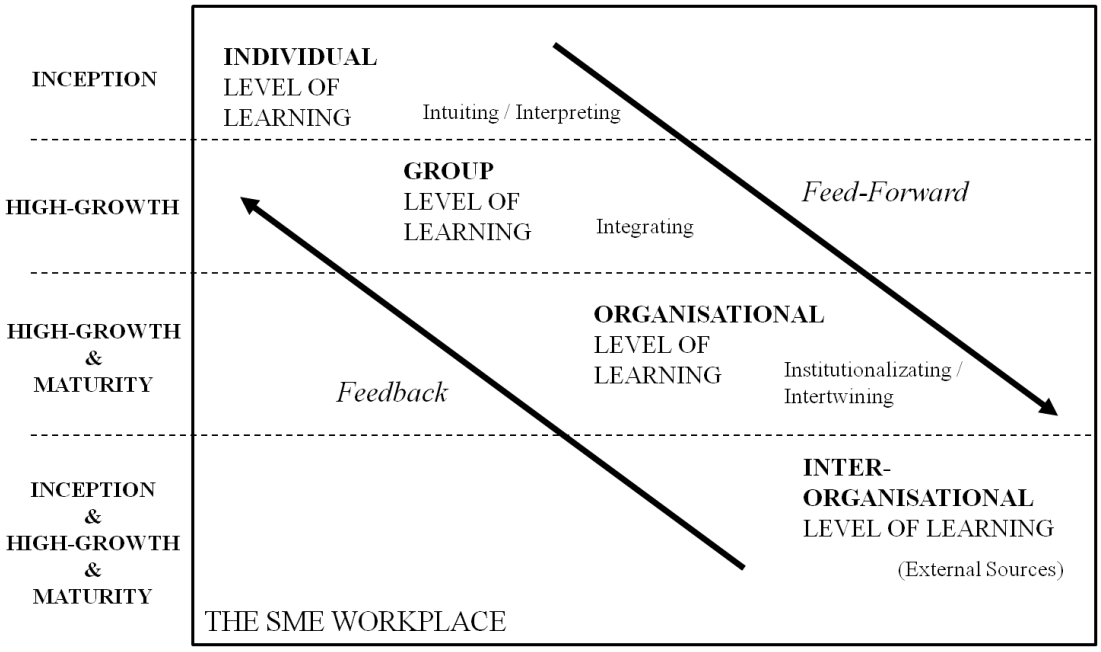

Figure 3. The results of the study *after research* – the combined view of 5I framework and life-cycle stages.

The resultant framework suggests that each life-cycle stage is constituted by a different emphasis on the practice of organisational learning. While learning is important to SMEs, the study shows that the levels of learning differ in use across the SME life cycle. This "differential" view adds weight to Jones and Macpherson's (2006) 5I framework of organisational learning for SMEs. The following revisits the literature to discuss each learning level and highlight the new theoretical contributions of the study.

The individual level of learning

The study suggests that the individual level of learning is common and important to SMEs, a finding which is consistent with the literature. Leaving learning in the hands of individuals is, in part, due to the attitudes of SME owner/managers. One reason is that SMEs are concerned with prudent resource allocation, and prioritize the use of available resources (Saru, 2007; Bradshaw *et al*., 2008). In other words, SMEs are bounded to their tight internal resources; they tend to practise individual learning since it requires fewer HRD commitments at the organisational level (CIPD, 2008).

What is new about the findings compared to previous studies is that the individual level of learning is more important in SMEs at inception than it is at high-growth and maturity. This could be due to the different firm characteristics at different life-cycle stages (Smith *et al*., 1985). In OLC theory, SMEs at inception are at the early stage of business with limited resources (including HRD resources), unstructured operations and an unplanned decision making style (Scott and Bruce, 1987; Hanks *et al*., 1993). Coordination among staff is weak since the internal structure of the firm does not exist, or is weak, in terms of supporting team-related activities (Galbraith, 1982).

The group level of learning

The study finds that SMEs at high-growth practise more group learning. This is in line with the literature that discusses group learning in driving innovation and firm performance. Hao *et al*. (2012) state that SMEs should develop their innovative capacity structurally to secure competitiveness through organisational learning, in which group learning plays a critical role in leveraging knowledge in the "metacognitive" way (Munby *et al*., 2003) and achieving so-called innovative learning firm wide (Fenwick, 2003). As a HRD practice, many SMEs do action learning linked to "live" business problems, a method of group learning harnessing the sharing of knowledge (Clarke *et al*., 2006; CIPD, 2009; Anderson *et al*., 2011) and the development of innovation (Clifford and Thorpe, 2007).

In OLC theory, SMEs at high-growth undertake an overall coordination change, where work processes become moderately formal and systematic that may involve the cross functionality among employees in team settings (Smith *et al*., 1985). As the firm grows, trained professionals/managers are hired to help share the leadership role in managing the increased complexity of the firm that is dominated with "problems" (Kazanjian and Drazin, 1990; Hanks *et al*., 1993). Training and learning, then, are in great demand at high-growth, along with more formalized HRD systems to be expected in such workplaces (Rutherford *et al*., 2003). While group learning is generally important and training and learning is valued at high-growth, the findings of this study specifies further that choosing group learning is particularly critical when the firm enters high-growth.

The organisational level of learning

The study supports the literature that the organisational level of learning will become more prominent in SMEs at high-growth and/or maturity. The gradual development of

importance in learning practices toward the organisational level reflects the case that SMEs are advancing internally from inception to maturity with new systems, structures and learning climate (Hanks and Chandler, 1994; Coetzer and Perry, 2008). Workplaces tend to become more decentralized, with increasing resources and support from work teams (Clifford and Thorpe, 2007), HRD-related services (Birdthistle, 2006; Kotey and Folker, 2007), and/or communities of practice (CoP) (Reynolds, 2009) during the later stages of growth.

Jones and Macpherson (2006) describe in the 5I framework that the organisational level of learning is one of the learning levels that SMEs use. While this level exists, the findings of this study contribute to the literature by differentiating specifically how SMEs should perceive the importance of the organisational level of learning between inception, high-growth, and maturity.

The inter-organisational level of learning

The study shows that the inter-organisational level of learning is common and important to SMEs across inception, high-growth and maturity, irrespective of firm size. The findings are consistent with previous research. For example, Sadler-Smith *et al*. (2001) found that inter-firm learning is positively associated with higher-growth small firms in the manufacturing sector. Holmqvist (2003) pointed out that SMEs leverage business networks for obtaining useful information they need. Networking is regarded as a common learning strategy in SMEs, given their lack of internal resources for training and development (CIPD, 2008; Saunders *et al*., 2014). In micro businesses, their learning environment is often permeated with network agents (such as bankers, solicitors and accountants) and non-network agents (such as government departments and education/training suppliers), as discussed by Devins *et al*. (2005).

The findings lead to a conclusion that inter-organisational learning is specially used in SMEs as a management tool – not simply a learning practice. This level of learning may *not* be associated with the different firm characteristics between life-cycle stages. That is, inter-organisational learning is practised in SMEs no matter which stage the firm is at.

Concluding remarks

This study suggests that SME owner/managers should align their HRD policies with life-cycle stages to suit/maximise employees' learning effectiveness at work, which in turn will benefit firm growth.

Practical implications

The levels of organisational learning practised in SMEs are varied in importance between life-cycle stages (except inter-organisational learning). These differential aspects of an integrated relationship (alongside the similarities) give thought to the following practical implications:

1. The individual level of learning is popular but most important in SMEs *at inception*, where owner/managers are wise to put an extra effort into recruitment and selection to identify new employees with a passion for self-learning or a strong initiative to perform tasks. For existing employees, SMEs should provide them with enough time and incentives for continuous learning, knowing that individual learning is critically valued at this stage (and beyond).
2. The group level of learning is more important in SMEs *at high-growth*, where owner/managers should manage their HRD resources more proactively to support the increasing demands for employee learning. They may leverage work teams and group discussions to achieve idea sharing and organisational problem solving. A shared learning culture in the workplace is worth building. Management should take the lead in group learning activities.

3. The organisational level of learning is more important in SMEs *at both high-growth and maturity*, where SMEs should aim at extending group learning to organisation-wide learning without compromising future firm growth. It is the time that owner/managers should actively develop internal resources for more structural support using standardized work tools and systems in the workplace – such as the intranet, management information systems, and common groupware for knowledge sharing. If possible, more effort also needs to be taken in the direction of having personal development (PD) programs in place for employees.
4. The inter-organisational level of learning is practised frequently in all SMEs across life-cycle stages. This suggests that SMEs should support employees to become members of relevant professional bodies, and let them expand their business horizons through networking with business stakeholders such as business partners, vendors and customers. Developing employees *early* with networked learning opportunities promotes benefits for both employees and the organisation.

Limitations and future research

The limitations of the study include three aspects. First, the sample size of this study is modest, hence, its results may provide better "analytic generalisation" than "statistical generalisation" (Yin, 2003). Second, the study is about SMEs in Hong Kong only, which is location specific. Third, although the results for these SMEs in the sample are important in their own right, caution should be taken in generalising the results to larger organisations such as multinational corporations (MNCs).

In line with the limitations stated above, three directions for future research are suggested. First, more empirical studies with larger sample sizes and random assignment of participants will be useful to offer comparative statistics to enrich the current findings. Second, similar studies for

SMEs beyond Hong Kong will be fruitful, given the different social-cultural and demographic factors in different countries that may affect the ways in which learning is perceived and approached in the workplace. Third, it will be helpful to extend similar research to MNCs, government bodies, and public sector organisations. The contrasts between results will develop a fuller understanding about organisational learning practices in organisations at different life-cycle stages.

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