Adaptive learning design in corporate education: Bolstering leadership readiness for organizational change

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Abstract: This case study describes the application of learning science research to customize the learning interventions for a company-wide change management initiative at Samsung Electronics Co., ltd., a diversified global technology company. The adaptive approach (a) measured the learning needs of participants and (b) effectiveness of learning methods, (c) applied qualitative data to inform the design of initial and subsequent learning interventions and (d) advanced the practice of progressive learning methods within the organization. The results demonstrated significant positive impacts both in change readiness at an organizational level and change engagement at an individual level.

Introduction:

Digital technologies have revolutionized societies, transforming the needs and expectations of learners, especially those in the technology industry who invent, design, develop and deliver those technologies. Digital-age consumers demand innovation, agility and customization from their products. In turn, employees of technology companies demand these same characteristics from their learning function. Not only is this in the form of what is learned, but also in terms of where, when and how learning occurs. Information today is abundant, readily available, but often rapidly obsolete. Consequently, the role of a corporate Learning and Development (L&D) function has transformed from content creator and lecturer to strategic business partner that curates, measures, adapts and guides learning. At Samsung Electronics Co., ltd (hereafter, Samsung), our L&D function plays a crucial role in ensuring that the organization is equipped with the technical, functional and leadership skills required to succeed in the complex, dynamic and competitive business environment of global technology. Our investments in L&D are considered and assessed like any other business resource. Digital content delivery technologies (e.g., video, virtual reality, augmented reality), learning methods (e.g., blended learning, micro-learning, self-directed learning) and processes (e.g., assessment, evaluation, customization) have enabled our L&D team to adapt to the learning needs of our employees and meet the ultimate goal of driving business results.

One area of the learning function that is critical to Samsung is to facilitate the creation and dissemination of our enterprise strategy in order to move the large global organization (over 300,000 employees across 79 countries) quickly in one direction. The company relies on our L&D team to provide forums where business leaders can share ideas, concerns and plans for the future. Each year, all corporate executives participate in a seminar focused on identifying business needs and priorities, and finding ways to respond to them. The outcomes of this seminar are consolidated into a unified set of strategies focused on the most pressing business challenges. Then, L&D takes ownership of educating the entire workforce on these strategic priorities through an internally-developed change leadership program.

In 2017, a company-wide organizational transformation was initiated to shift the job architecture globally to job-based HR. While the transformation affected the career trajectory of our entire workforce, it directly impacted the roles and responsibilities of mid-career employees, particularly in Korea due to the country and company's specific business culture. To effectively align (Armenakis & Harris, 2002) and upskill our diverse stakeholders (Nathan, 2008), the change leadership program targeted three unique groups to address their specific needs: (a) the Team Leader Course for all people managers in Korea below the executive level, (b) the Self Leader Course for all individual contributors in Korea, and (c) the Global Change Leadership Course for all global employees. The focus of this case study is on the adaptive learning strategy used in designing the Team Leader Course.

Theoretical Background:

The most widely used definition of change readiness was developed by Armenakis, Harris, and Mossholder (1993). They defined the concept as a combination of beliefs, attitudes and intentions of organizational members regarding what change effort their organization needs and how they perceive the capability of the organization to execute the needed change. Among many studies focusing on factors related to change readiness as a predictor of the level of employee resistance to or support for change, this study opted for the widely cited factors suggested by Holt et al (2007): change appropriateness (members believe the direction of change is appropriate); management support (members feel management supports the change); self-efficacy (members believe they have the capabilities to successfully implement the change); and personal valence (members perceive the change to be personally beneficial).

Change engagement consists of change commitment, organizational members' resolve to implement a change, and change efficacy, the feeling of having the capabilities to implement the change. The most often cited definition of commitment to organizational change is from Herscovitch and Meyer (2002): the drive or attitude that pushes individuals to do what is necessary to successfully implement organizational change. Change efficacy is the feeling of possessing the ability to effectively realize and manage the change. Conner & Patterson (1982) emphasizes that without the sense of confidence about their capabilities, organizational members would not be able to implement and manage changes.

Since micro-learning is still a relatively new concept, a comprehensive definition of it is yet to be formed through academic consensus (Zhang & Ren, 2011). The most often cited definition of micro-learning is from Hug (2005), which was also cited by Lindner & Bruck (2007): a learning approach designed to help learners learn in the process of taking actions to solve problems and find and enjoy fun factors in the learning content. According to Hug (2005), features of micro-learning include: 1) short duration 2) small learning units (micro-content) 3) modular curriculum 4) episode-based activities 5) refreshing effect 6) mixed modality 7) emphasis on repetition and reflection. The 2017 January issue of TD at Work describes micro-learning as a tool to quickly respond to employee needs and to improve their learning satisfaction and sense of control. Micro-learning was positively described also by Paul (2016) that it is effective for teaching new information based on the pre-existing knowledge of learners and for solidifying what has been learned.

Methods and Results:

The Team Leader Course (TLC) targeted team leaders ($n = 2,366$) across a diversity of businesses and consumer product lines. There were two phases to TLC, both of which used quantitative measurements to inform subsequent interventions. In phase 1, we assessed the learning need and impact (i.e., change readiness at the organizational and individual level) before design, and after completion of the course using the readiness-for-change instrument developed by Holt, Armenakis, Field and Harris (2007). In phase 2, we harnessed the results from the phase 1 post-course survey to develop customized follow-up content, and measured its learning impact (i.e., change engagement on an individual level) based on a variation of the organizational readiness for implementing change measure from Shea, Jacobs, Esserman, Bruce and Weiner (2014). Although the Shea et al. study focused on the supra-individual level (e.g., team, department, or organization) and items were group-referenced (e.g., 'We are ready to…'), we focused on the individual level in order to measure personal readiness (Bouckenooghe & Devos, 2007; Eby et al., 2000) rather than collective readiness. Items were changed to self-reference (e.g., 'I am ready to…') and we call this measure *change engagement*.

Phase 1: Change Readiness

In order to gauge the initial change readiness of the target audience, randomly selected participants ($n = 274$) were asked via online survey (see Table 1) 25 questions to identify if they (a) felt the change was appropriate (*appropriateness* factor), (b) believed management supported the change (*management support* factor), (c) felt capable of making the change successfully (*self-efficacy* factor), and (d) believed the change was personally beneficial (*personal valence* factor) (Holt et al., 2007; Holt & Vardaman, 2013). All items used a seven-point Likert scale (ranging from 1 = strongly disagree to 7 = strongly agree). The survey results uncovered that before any learning intervention, managers ranked their personal valence highest, followed by change self-efficacy, then appropriateness and management support lowest. Managers felt more positive about their individual change readiness (i.e., personal valence and self-efficacy factors) than the organization's (i.e., appropriateness and management support factors). This may be due to survey respondents' assumptions based on the company's pre-TLC communications, as well as the higher locus of control they felt in their own readiness versus the organization's readiness.

Table 1: *t*-test results for change readiness factors (*n* = 274, *p* < 0.05, scale ranging from 1 = strongly disagree to 7 = strongly agree)

	Factor (No. of questions)	Pre		Post		*t*	*p*
		Mean	SD	Mean	SD		
Organizational	**Appropriateness** (10) e.g., I think the organization will benefit from the change to job-based HR.	5.49	0.76	5.76	0.70	-6.95*	0.00
	Management support (6) e.g., Every senior manager has stressed the importance of job-based HR.	5.17	1.02	5.38	1.08	-3.84*	0.00
Individual	**Self-efficacy** (6) e.g., I have the skills necessary to make the change to job-based HR work.	5.52	0.72	5.57	0.80	-1.51	0.13
	Personal valence (3) e.g., My future in this job will be limited because of this change. ®	5.60	1.03	5.62	1.08	-0.38	0.70

Equipped with the data generated through the first survey, curriculum designers developed a customized 2-day course blending instructional methods and media, and hosted 17 sessions at our L&D campus. An average of 139 people attended each session, who were then divided into two smaller groups for workshops and activities. While the sessions were designed to improve all four factors, strongest emphasis was placed on improving the management support factor because it was ranked the lowest on the survey. The first day was dedicated to changes on the macro and organizational level, and the second day drilled down into the individual level. Kicking off the course was a lecture-based lesson from our internal subject matter expert (SME) and senior leader, Samsung's Chief Human Resources Officer (CHRO), covering both the management support factor as well as the appropriateness factor from an internal perspective. Following CHRO's address was an interactive workshop facilitated by an external SME to build on the appropriateness factor from a global perspective. The workshop solidified the participants' declarative knowledge (i.e., defining job-based HR, reason for changing the job architecture of the organization) and elaborated on the implications of the change in the context of participants' day to day reality (i.e., expansion of leaders' roles, potential challenges) using a collaborative, inquiry-based approach. The second day was designed to increase the participants' personal valence factor and change self-efficacy factor by developing procedural knowledge (e.g., overcoming challenges, finding opportunities, building a growth-oriented culture) and practicing skills (e.g., evaluation, feedback, development) using experiential and action learning approaches.

After the 2-day course, the same participants were again given the ready-for-change survey online (see Table 1), which revealed an increase in change readiness across all four factors, but only a statistically significant increase on the appropriateness factor and management support factor. The good news was that, after the in-person course, participants increasingly believed that the change was necessary and beneficial to the organization and that organizational leaders were committed to the change. Unfortunately, on the individual level, there was no significant increase in participants' belief that the change would benefit them or that they had the capabilities to successfully implement the change. This survey data, as well as informal qualitative feedback provided during the course, informed the content, method and design of succeeding TLC learning interventions.

Phase 2: Change Engagement

In order to continuously reinforce the learning (ATD, 2017; Hug et al., 2005) from the 2-day course and address the individual change readiness gap, course designers developed three 5-minute videos to engage and empower managers to change on an individual level. Each video chunked an area of concern identified during phase 1, most significantly developing the participants' competencies to implement the change and less significantly on gaining further commitment to the change (i.e., leaders fostering individual and team learning, viewing failure as an opportunity for development and growth-promoting feedback). Over a duration of 21 days, in 10 day intervals, emails were sent to all TLC participants (*n* = 2,366) encouraging – but not requiring – them to access the successive micro-learning content on the learning management system (LMS), our internal online learning portal. The LMS recorded viewing rates (i.e., the number of videos the participants watched) and, at the end of the 21-day period, administered an additional online survey that measured two determinants of change engagement: *change commitment* (i.e., resolve to implement a change) and *change efficacy* (i.e., capability to

implement a change) (Shea et al., 2014; Weiner, 2009; Herscovitch & Meyer, 2002). Participants were asked a total of 9 questions, four measuring change commitment (e.g., I want to implement this change to job-based HR) and five on change efficacy (e.g., I can coordinate tasks so that implementation of job-based HR goes smoothly).

For the same randomly selected survey participants from phase 1 ($n = 274$), the average viewing rate of the three micro-learning content was 54% (i.e., 152 people, see Table 2). Although the viewing rates decreased with each video, out of the 64% of participants (i.e., 174 people) who viewed the first video, 86% (i.e., 150 people) of them engaged with at least one other subsequent micro-learning content. This may suggest that those who were self-driven to explore the first micro-learning content found the learning content sufficiently relevant and/or valuable to continue engaging.

Table 2: micro-learning content viewership ($n = 274$, Note: Video 3 was inadvertently sent out before a major national holiday, which is may have reduced viewership)

	Video 1	Video 2	Video 3	Average
No. of viewers	174	154	127	152
% of total	64%	56%	46%	54%

Survey data showed a statistically significant increase in change engagement relative to viewing rates (see Table 3). The more micro-learning content the participants watched, the higher they rated their overall change engagement. Using the Scheffe post-hoc test, we confirmed that those who watched two videos showed a higher level of change engagement than those who did not watch any videos, and that those who watched all three reported a higher level of change engagement than those who engaged with one or none of the content. However, there was no significant difference between viewing none and one or between one and two or two and three viewings, respectively.

Table 3: ANOVA test on the relationship between micro-learning video viewership and change engagement

	Viewing rate	n	Mean	SD	F	p	Post-hoc
Change engagement	None	85	5.26	1.01	8.71	0.00	$2 > 0$
	1 out of 3	33	5.37	1.17			$3 > 0$
	2 out of 3	46	5.88	0.83			$3 > 1$
	All 3	110	5.94	0.91			(Scheffe)

Furthermore, the more videos the participants watched, the smaller the gap between their commitment and efficacy became (see Figure 1). For the 41% of participants (i.e., 111 people) who watched all three contents, the self-perception of their capabilities to change surpassed their willingness to change. In addition to watching all three videos, these highly engaged members expressed their continued interest through various channels (e.g., repeated views, posting relevant questions to the online TLC participant community, requesting permission to download videos).
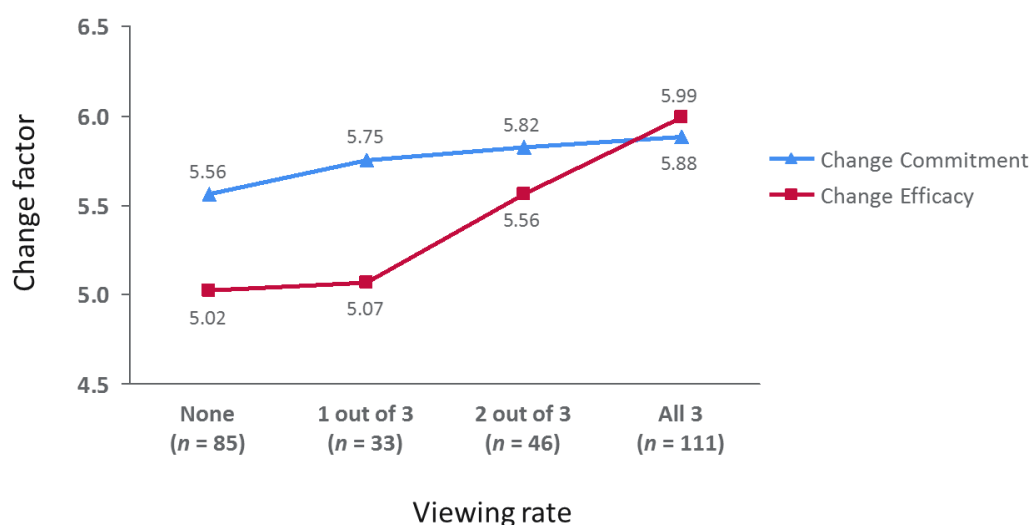

Figure 1. Change factor impact of viewing rate.

As the survey results from phase 1 indicated and as course designers intended, the micro-learning content focused more on developing participants' change efficacy factor than their commitment factor. Even for those who did not watch the micro-learning content, the change commitment factor was rather high (5.56), which may suggest that the in-person course in phase 1 sufficiently developed the participants' personal resolve to implement the organizational changes. Although this study cannot prove causality, the measure used in phase 2 correlates the increase in change engagement to watching the micro-learning content.

Conclusion and implications:

Overall, leveraging technology and learning science research to quantitative measure learning needs, assess effectiveness of learning interventions and adapt subsequent efforts based on those results was an informative approach to increase the change readiness and engagement of TLC participants. In addition, leveraging micro-learning content (Paul, 2016; Zhang, 2010), empowering participants to self-direct (Boyer et al., 2012) their on-going learning and utilizing technology platforms that employees are familiar with likely enhanced the learning experience and effectiveness of the course.

One opportunity identified by the success of the micro-learning content is attracting more learners to engage with the content while fostering a self-directed learning culture. Additionally, a general limitation to applying research to the corporate setting is the uncontrollable nature of our fast-paced, multifaceted business. As with this case study, research informed the various inferences and directional insights (e.g., self-evaluation was the appropriate quantitative measure, a blended learning environment with bite-size digital content for reinforcement met the learning needs and preferences of the target participants), however many variables could not be controlled to fully establish validity or repeatable reliability for future programs.

As advances in research and sophistication of technology improve data collection, mining and application, it will be critical for L&D functions to integrate these innovations into the practice of talent development. Capability enhancements (e.g., computer generated learning recommendations, automatically capturing and analyzing learner data) to our internal LMS are already under way, which will increase the sample sizes and provide more statistically significant results for future research-based activities. The insights from these measures will continue to inform the content, method and process of the learning interventions at Samsung as well as provide opportunities to offer "on the ground" evidence to the research community.

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