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Self-Directed Learning: A Tool for Lifelong Learning

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and David Fleming⁴

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Abstract

A meta-analytic review of self-directed learning (SDL) research over 30 years, five countries, and across multiple academic disciplines is used to explore its relationships with five key nomologically related constructs for effective workplace learning. The meta-analysis revealed positive relationships between SDL and internal locus of control, motivation, performance, self-efficacy, and support. The use of an actual SDL project in an undergraduate sales management course and an MBA selling and sales management course is used to provide supporting evidence and practical advice for educators seeking to use SDL to promote lifelong learning skills in students.

Keywords

learning approaches and issues, innovative teaching methods, student motivation, employer needs, methodology, sales management/sales, undergraduate education, MBA

The best college educators tailor their topics and methods to effectively prepare students for future careers (Taylor, Hunter, Melton & Goodwin, 2011). Often, this is accomplished by using various “active learning” techniques that engage students more than traditional lecture-based practices (Diamond, Koernig, & Iqbal, 2008; Taylor et al., 2011; M. R. Young, 2005, 2010). One active learning technique that is showing great promise in the preparation of students for postcollege life is self-directed learning (SDL). SDL is a process by which learners manage their own learning process from beginning to end (Knowles, 1975). Research has shown that SDL is positively related to many education-related constructs: academic performance, aspiration, creativity, curiosity, and life satisfaction (Edmondson, Boyer, & Artis, 2012); however, limited research exists on how SDL is related to workplace-learning constructs.

College students who are taught how to be proactive and self-directed learners will be better prepared as employees to anticipate their organization’s needs, tailor their learning to meet their own unique learning styles, and acquire the necessary skills, knowledge, and abilities to create value for their customers, employers, and organizations (Artis & Harris, 2007; Cron, Marshall, Singh, Spiro, & Sujana, 2005; Tobin, 2000). With employees capable of applying SDL methods, U.S.-based organizations may be able to reduce and more effectively apply the estimated \$125 billion spent annually on training that is dominated by lecture-based methods (Patel, 2010). The purpose of this study is to synthesize the current research on SDL through a meta-analytical review of important nomologically related variables. In addition, we

will discuss practical applications of SDL in the classroom given factors found in SDL projects as well as a content analysis of responses from students who used SDL in a graduate course.

Self-Directed Learning

Since its 1967 introduction by Tough within the adult learning literature, SDL has been shown to be a highly effective method to engage and train adult learners (Ellinger, 2004). In the 1970s, SDL research focused primarily on identification and definition. Knowles (1975) provides the most widely accepted definition with eight elements: (a) it is a process (b) that is initiated by the individual, (c) which may or may not involve the help of others, (d) to identify their learning needs, (e) develop learning goals from these needs, (f) find the necessary resources to attain these goals, (g) select and implement the proper learning strategies to meet their goals, and (h) determine how to measure learning outcomes.

In the 1980s and 1990s, SDL research focused primarily on the antecedents of learner behavioral intentions toward

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SDL as measured by their readiness to engage in SDL based on potential learner responses to a scale developed by Guglielmino in 1977 (e.g., Barnes, 1999; Chang, 1990; Chien, 1998; Durr, 1991; Gardner, 1989; Gardner & Helmes, 1999; Graeve, 1987; Hoban & Sersland, 1997, 1998, 1999; Jude-York, 1991; Middlemiss, 1987; Moore, 1987; Posner, 1989; Roberts, 1986; Skaggs, 1981; Wall, Sersland, & Hoban, 1996; Wood, 1994; D. J. Young, 1986). More recently, efforts were made to research actual usage of SDL (i.e., Boyer, Artis, Solomon, & Fleming, 2012; Fleming & Artis, in press), and this has caused a return to the *SDL project* as first conceptualized by Tough (1967) as the unit of analysis. An SDL project is defined based on four characteristics: It is (a) deliberate, (b) related activities that (c) take up at least 7 hours to complete within a 6-month period, while (d) generating specific knowledge, skills, or lasting change in the learner.

In 2000, Clardy extended the SDL concept by developing a typology of four types of SDL projects within the workplace: induced, synergistic, voluntary, and scanning. An *induced* SDL project is mandated by the firm (Clardy, 2000), and these projects are used when employees are unsure of what they need to know, where to find the information, or how to confirm they have achieved the learning objective. Employers provide employees with the information and assess what was learned, but workers must still self-regulate their learning (Artis & Harris, 2007). For example, mandatory continuing education courses required to meet regulatory standards (e.g., industry certification) would be considered an induced SDL project. Second, *synergistic* SDL projects are what Clardy (2000) terms “gateway opportunities.” In this case, the educational materials are provided by the organization, but employees can choose whether or not to participate, and learning is assessed only by the employee. A synergistic SDL project is useful when employees are aware of what knowledge is needed but do not know how or where to find the information. Artis and Harris (2007) cite corporate libraries as an example; the firm makes available materials to study—books, CDs, and so on—but the employee decides what to study and how to apply what is learned. The third type of SDL project is known as *voluntary*. According to Clardy (2000), these SDL projects are entirely enacted by employees and happen when workers know what knowledge is needed, where to find the necessary information, and how to evaluate what they have learned. An example of a voluntary SDL project would be when a financial services representative at a bank decides to learn more about investment strategies to improve his/her ability to build long-term relationships with key customers; he/she then independently searches, locates, and learns the necessary information to achieve the desired competency. *Scanning* is the fourth type of SDL project. It is similar to a voluntary SDL project in that employees know what knowledge is needed, where to find the necessary information, how to categorize and use it, and how to assess what they have learned; but it is distinct from a voluntary project in

that it is an ongoing SDL project with no predetermined end (Clardy, 2000). An example of a scanning SDL project would be the salesperson who continuously monitors and studies competitors’ offerings to better explain to clients his/her firm’s unique selling proposition and value.

In 2007, Artis and Harris extended the notion of SDL into the marketing domain by providing a conceptual model of the use of SDL projects by salespeople. Through a review of the SDL literature they proposed four antecedents, two moderators and one mediator of the use of SDL projects. The four individual-level characteristics they identified as antecedents are (a) learner self-directedness, (b) confidence in self-directed learning skills, (c) contextual understanding, and (d) motivation to learn. A learner’s readiness to use SDL is similar to these antecedents, and much of the literature/research used to develop the Artis and Harris (2007) model were also used within this meta-analytical review. The two moderator variables are (a) environmental turbulence and (b) organizational learning climate. The mediating variable is willingness to use SDL projects. In their framework, the construct “willingness to use SDL projects” is a proclivity toward engaging in SDL behaviors to achieve personal learning objectives. It is this framework, designed specifically for the marketing domain, that guides the following meta-analysis, and its underlying theoretical structure serves as the basis for the cardinality of the relationships.

Literature Review and Hypothesis Development

This meta-analytic review investigates the relationships between SDL and five nomologically related constructs: (a) internal locus of control, (b) motivation, (c) performance, (d) support, and (e) self-efficacy. The constructs were chosen due to their abundance in the literature and their theoretical links to SDL either as an antecedent (internal locus of control, motivation, support, and self-efficacy) or as an outcome of SDL (performance). While the meta-analysis itself does not infer directionality or causality in the relationships found, the underlying theory of those nomological links do provide sound justification for expectancies of directional relationships.

Internal Locus of Control

Internal locus of control (ILOC) is the extent to which individual employees believe they have control over events that influence them. Those with higher levels of ILOC believe that event outcomes result primarily from their own behavior, whereas those with low levels of ILOC believe that others, fate, or chance determine consequences (Rotter, 1954). Employees with higher levels of ILOC demonstrate greater job commitment (Werbel, Landau, & DeCarlo, 1996), use more problem-focused coping methods (Srivastava & Sager,

1999), have higher levels of job satisfaction and job performance (Spector, 1982), and believe that their efforts will affect goal attainment (Lefcourt, 1982). Transformational learning theory predicts that SDL improves when adult learners are given greater levels of control over the “what, when, and how” of learning (Mezirow, 2000). Adult learners get more out of the learning opportunity when they are provided with input and some element of control over the learning method, the materials, the learning environment, and the evaluation of learning effectiveness (Speck, 1996). Because of this, employees with higher levels of ILOC should be more likely to engage in SDL, given that they must take some degree of control for their own learning efforts. For example, a study of 103 registered nurses found that higher levels of ILOC were reported for those nurses who were self-directed learners (Skaggs, 1981). Therefore, nurses who felt that their own actions would make an impact on outcomes important to them were more likely to use SDL for work-related success. In their work, Artis and Harris (2007) note that one of the unique aspects of SDL versus traditional learning is that the locus of control for SDL belongs to the learner rather than to the teacher. In addition, they identify the trait of learner self-directedness as an antecedent of salesperson willingness to use SDL. This trait includes the belief that the learner can effect personal change through one’s own efforts and abilities, which is the same as individuals with high internal locus of control. Similarly, Guglielmino (1977) identifies ILOC as a component of readiness to use SDL. Hence, the following hypothesis is created:

Hypothesis 1: Higher internal locus of control leads to greater SDL readiness.

Self-Efficacy

Self-efficacy is an employee’s belief in his/her ability to be successful in different situations (Bandura, 1977a). Self-efficacy differs from ILOC in that ILOC relates to beliefs about control over situations, whereas self-efficacy relates to the individual’s belief in his/her own ability (Maertz, Bauer, Mosley, Posthuma, & Campion, 2005). An employee’s level of self-efficacy plays an important role in approaching challenges and setting goals. It stems from social learning theory, such that an individual’s actions are influenced by observing others’ actions and reactions (Bandura, 1977b). These observations shape cognitive processes and develop an individual’s confidence in his/her own ability by comparing their own ability to what they observe in others. Those with higher levels of self-efficacy in one task may believe that they can be successful and perform well and may approach different tasks with the belief that they are capable of producing desirable results (Bandura, 1977a). Organizations that are constantly facing new challenges from customers and the environment require higher

levels of self-efficacy from employees. For example, a survey of 575 workers across various industries found that those who reported lower levels of self-efficacy were less likely to be self-directed learners (Posner, 1989). In their framework, Artis and Harris (2007) identify confidence in SDL skills as another antecedent to willingness to use SDL, and they note that “self-directed learners benefit from being taught, practicing, becoming proficient, and feeling confident in the use of core learning skills” (p. 13). This definition is almost identical to the definition of self-efficacy. Thus, the following hypothesis is proposed:

Hypothesis 2: Greater self-efficacy leads to higher SDL readiness.

Motivation

Motivation is the force that drives employees to work toward their goals and is often manifested in their willingness, desire, or commitment to perform tasks that will lead to goal attainment. It is an important construct in business and has been widely studied relating to its strong positive impact on performance (Churchill, Ford, Hartley, & Walker, 1985). Transformational learning theory posits that adults’ commitment to learning is greater when they feel that the goals of training are important and when they have control over the learning method (Mezirow, 2000). This commitment manifests itself as motivation. For example, in a survey of 253 human resources personnel, those employees who reported higher levels of self-motivation and achievement orientation also reported spending more hours completing SDL projects (Livneh, 1986). Artis and Harris (2007) note that motivation should be stronger than all of the other antecedents of willingness to use SDL due to the fact that it can subordinate all other active variables. They also state that this motivation may be either intrinsic or extrinsic and can be explained by expectancy theory. According to their application of this theory, if the learner sees a potential positive outcome from using SDL (valence), they believe that the actual use of SDL has a high probability of generating or resulting in that desired outcome (instrumentality) and that the investment of effort in SDL will actually lead to the goal (expectancy), then the learner will have greater willingness to engage in SDL (e.g., they will be more ready to use SDL). From this foundation, the following hypothesis is proposed.

Hypothesis 3: Higher levels of motivation lead to greater SDL readiness.

Support

Transformational learning theory emphasizes the importance of support from peers and leaders for successful adult learning (Mezirow, 2000). In work situations, employees’

attitudes, behaviors, and emotions are influenced by their perceptions of support from coworkers and direct supervisors. Support is the perception that others in the organization, such as managers and coworkers, value employee contributions and care about employee well-being (Eisenberger, Huntington, Hutchison, & Sowa, 1986). Employees who feel supported will be more satisfied with and more committed to their job, which translates to decreased turnover and higher performance (Edmondson & Boyer, 2012; Riggle, Edmondson, & Hansen, 2009). Eisenberger et al. (1986) suggest that providing support to employees will encourage them to reciprocate by participating in organization-enhancing behaviors. Managers instill a sense of support among employees when they allow them to learn at their own pace and provide help with training when needed. Adult learning theory suggests that learners require follow-up and support for effective learning, since transfer of learning is not automatic and must be facilitated for sustained knowledge attainment, which suggests that learning requires structured feedback and support from coworkers to reduce fear and judgment from failures in learning (Speck, 1996). Artis and Harris (2007) note that organizational learning climate should serve as a moderator of the relationship between individual characteristics (learner self-directedness, confidence in SDL skills, contextual understanding, and motivation to learn) and willingness to use SDL. It is their contention that learners in organizations that have a climate that is supportive of learning will show a stronger positive relationship between their individual characteristics and willingness to use SDL than learners in organizations whose climates are not supportive of learning. However, in their discussion of this construct, they also state that “the training function . . . can positively influence the successful use of self-directed learning by salespeople” (p. 17). This indicates that there may also be a direct impact of organizational learning climate or organizational support of learning on employees’ willingness to use SDL and ultimately their actual use of SDL. In addition, Boyer et al. (2013) found that there is a direct impact of employee perceived supervisor support for SDL on employee use of SDL projects, a relationship that the Artis and Harris (2007) conceptualization treats as being fully mediated by employee willingness to use SDL. From this evidence, the following hypothesis is formulated:

Hypothesis 4: Higher levels of support lead to greater SDL readiness.

Performance

Transformational learning theory underscores that improved performance is among the central goals for adult learning at both the individual and group levels (Mezirow, 2000). In practice, adults with higher levels of expertise are more likely to use SDL as they exhaust instructor-led learning

resources and are forced to self-manage their learning to increase their knowledge, skills, and abilities (Ellinger, 2004). Methods to increase job performance are heavily sought in business and academia (Jaramillo, Mulki, & Marshall, 2005; Pappas & Flaherty, 2008; Tuten & Neidermeyer, 2004). Performance encompasses job-specific behaviors that include core job responsibilities (Motowidlo & Van-Scotter, 1994). This type of performance is an important subject for inquiry as it encompasses job activities that must be performed for compensation and advancement within the organization. Speck (1996) suggests that providing control to learners will also lead to increases in performance. Effective employee learning leads to greater levels of competency and expertise (Lambert, Ohai, & Kerkhoff, 2009). Employees who report higher levels of readiness to use SDL also report higher levels of job satisfaction and job performance (Bromfield-Day, 2000). According to the Artis and Harris (2007) framework, the link between willingness to use SDL and performance relies on the intervening behavior of SDL use. This makes sense as just being ready or willing to use SDL alone should not improve performance in the absence of the behavior itself. Fishbein and Ajzen (1975) in their Theory of Reasoned Action also defined the sequence of events as follows: beliefs and attitudes (e.g., support, self-efficacy, internal locus of control, and motivation) lead to behavioral intentions (i.e., willingness to use or readiness for SDL), behavioral intentions lead to behaviors (i.e., SDL use), and behaviors lead to outcomes (e.g., performance). To further support this sequence, Boyer et al. (2012) found that support leads to greater SDL use and SDL use leads to improved performance. While they did not explicitly test the entire Fishbein and Azjen (1975) sequence, their findings imply that the sequence does apply to this context as attitudes should not lead to this type of behavior without an intervening behavioral intention stage. Therefore, the following hypothesis is proposed:

Hypothesis 5: Higher levels of SDL readiness leads to improved performance.

Methodology and Results of the Meta-Analytic Review

The inclusion criteria for articles in this meta-analysis of work-related variables are guided by those used in the Edmondson, Boyer, and Artis (2012) meta-analysis of academic-related variables. To be eligible for inclusion in this meta-analysis, a study must have reported a Pearson’s correlation coefficient (r) between any measure of SDL and at least one of the five constructs investigated in this study (ILOC, self-efficacy, support, motivation, or performance). Studies containing other statistics that can be converted to r (F value, t value, p value, and χ^2) were also eligible. Because of this statistical requirement only those studies

with interval or ratio measures of SDL were included, and the time frame for eligibility included all studies available prior to June 2010.

Also, in line with Edmondson et al. (2012), a multisampling approach was used to create a representative and complete final database. A computer search of ABI/Inform, PsycINFO, Emerald, Science Direct, Ingenta, ERIC, OVID, Wiley Interscience, OCLC First Search, Web of Science, and Dissertation Abstracts was completed to identify relevant published and unpublished studies. Studies containing the term self-directed learning, Self-Directed Learning Readiness Scale, SDL, and self directed learning (no hyphen) in the title, abstract, and/or full text were considered. Next, the reference section of each article or dissertation identified from the above searches was examined to determine if there were any other relevant articles. Then, to ensure all relevant articles were found, all issues of the *International Journal of Self-Directed Learning* were reviewed manually. Finally, leading researchers and knowledge centers on SDL were contacted to obtain information and lists on SDL research, and it was verified that all articles from these list had been obtained. After completing the literature search, 34 studies met the eligibility criteria.

Coding of Studies

The authors coded studies on 10 variables: average age, average educational level, average tenure, country of origin, effect size (correlation), industry, job type, reliability of both the self-directed learning scale and the other variable scales, and sample size. To check for coding quality, two researchers coded each study independently. All minor differences between the two coders were resolved through discussion.

Adjustments for Artifacts

To ensure that the true relationship would not be underestimated, the effect size of each relationship was corrected for attenuation bias using Hunter and Schmidt's procedure (Hunter & Schmidt, 2004). If a study did not include one or both of the required reliabilities, the weighted mean reliability for that particular construct across all studies was used instead (Geyskens, Steenkamp, & Kumar, 1998). All the reliability-corrected correlations were then transformed into Fisher's z -coefficients using the Lipsey and Wilson (2001) recommended r -to- z transformation procedure. To allocate greater weight to those estimates that were more precise, the z -coefficients were averaged and weighted by an estimate of the inverse of their variance ($N - 3$), then converted back into correlation coefficients.

The 34 studies included in this meta-analytic review yielded 46 correlations (see Table 1). The average study sample size across the five constructs is 183. The average age, tenure, and educational level for the respondents in

the meta-analysis were 35.9, 8.6 years, and 14.6 years, respectively. Studies included in the meta-analysis were conducted in five different countries: the United States (26), Taiwan (2), Hong Kong (1), South Korea (1), and Thailand (1), with three studies failing to specify where its data were collected. A wide variety of job types and industries were included: education, law enforcement, business, military, nursing, government, and manufacturing. Each study contained either an interval or ratio scale measure of SDL. More than 85% (29 out of 34) used one of two self-report interval scales; either some variation of the self-directed learning readiness scale (Guglielmino, 1977) or the Oddi Continuous learning scale (Oddi, 1984). While they are two separate instruments, they show very high correlations (e.g., $r = .83$; Jude-York, 1991) suggesting that there is significant overlap within the domain of the constructs being measured, that is, both scales measure self-directed learning. Out of the remaining five studies, three were self-report interval measures of SDL preference, competency, or ability; and the remaining two studies measured actual SDL behaviors on a ratio scale in number of projects or hours. For performance measures, two of the five studies used supervisor rated, two used self-rated, and one used supervisor, self, and subordinate rated measures.

Results

Meta-analyses were conducted for each of the five constructs. Table 2 displays the results of the meta-analyses, including the number of independent studies (k), number of respondents in the sample (N), average weighted correlation corrected for attenuation (r), the standard error, the range of correlations, the Q -statistic, and the estimated fail-safe N statistic (availability bias) for each construct. The fail-safe N s ranged from 60 to 351, with an average fail-safe of 136; therefore, all of the constructs passed the $5k + 10$ criterion set forth by Rosenthal (1979).

All five of the SDL-variable relationships had correlations significantly greater than zero. Using Cohen's (1977) rule of thumb for interpreting effect size magnitude, a weak (small) effect size is a corrected correlation that is less than or equal to 0.10; a moderate (medium) effect size is a corrected correlation that is greater than 0.10 but less than 0.40; and a strong (large) effect size is a corrected correlation that is greater than or equal to 0.40 (Lipsey & Wilson, 2001). Overall, the five constructs exhibited positive relationships with SDL. There is a strong positive relationship between SDL and the antecedent of self-efficacy ($r = .41, p < .001$), whereas there is a moderate positive relationship between SDL and the antecedents of ILOC ($r = .34, p < .001$), motivation ($r = .26, p < .001$), and support ($r = .21, p < .001$). There is also a moderate positive relationship between SDL and the outcome of performance ($r = .26, p < .001$). The optimum next step would have been to use meta-regression to test the

Table 1. Summary of Meta-Analytic Articles.

Year	Author(s)	Instrument	ILOC	MOT	SE	SUP	PERF
1999	Barnes	SDLRS		X			
1990	Chang	SDLRS	X				
1998	Chien	SDLRS				X ^a	
1994	Confessore and Confessore	Self-Assess SDL		X			
1991	Durr	SDLRS					X
1988	Fisher	SDL Participation		X ^a			
1989	Gardner	SDLRS				X	
1999	Gardner and Helmes	SDLRS	X				
1987	Graeve	SDLRS				X	
2002	Hoban, Bulik, Hanor, Hoban, and Sersland	SDLRS			X ^a		
2000	Hoban and Sersland	SDLRS			X		
1999	Hoban and Sersland	SDLRS			X		
1998	Hoban and Sersland	SDLRS			X		
1997	Hoban and Sersland	SDLRS			X		
2002	Holzer	SDLRS			X		
1992	Jones	SDLRS			X ^a		
1991	Jude-York	SDLRS				X	X
1986	Livneh	SDL Hours		X			
2005	Lounsbury, Saudargas, Gibson, and Leong	Preference for SDL		X			
1992	Martin	OCLI			X	X	
1987	Middlemiss	SDLRS		X			
1987	Moore	SDLRS		X			
1990	Oddi, Ellis, and Roberson	OCLI					X
1984	Oddi	OCLI			X		
1989	Posner	SDLRS	X				
1986	Roberts	SDLRS					X
1996	Sandsburry	OCLI			X	X	X
1993	Singh	SDL Competency				X	
1981	Skaggs	SDLRS	X				
2002	Tuksinvarajarn	SDLRS			X		
1996	Wall, Sersland, and Hoban	SDLRS			X		
1994	Wood	SDLRS			X		
2000	Yoo, Cheong, and Cheong	SDLRS	X		X		
1986	Young	SDLRS				X	

Note. ILOC = internal locus of control; MOT = motivation; SE = self-efficacy; SUP = support; PERF = performance; SDLRS = Self-Directed Learning Readiness Scale; SDL = Self-Directed Learning; OCLI = Oddi Continuous Learning Scale.

a. Indicates multiple studies in same article.

moderating effects of the scales used to measure SDL, job type/industry, and country of origin on these relationships. However, this was not possible given the limited number of cases for each relationship creating the strong possibility of model “overfitting” that can lead to incorrect or unstable results due to the small *N* (van Houwelingen, Arends, & Stijnen, 2002).

Application of SDL in Marketing Education

To fully understand the impact of SDL on student performance, a second research project was designed to ground the

researchers directly in the phenomenon. The written comments of students who completed a semester-long SDL project were analyzed to evaluate the process and forces involved in the creation, pursuit, and completion of an SDL project. In this course, an SDL project similar to what would be expected of an employee in a real-world scenario was designed for the students. Students were asked to compare their current resume with the one they would need to have to advance their career and obtain another job 5 years in the future. Students were then instructed to identify what skills, knowledge, and abilities were needed to “grow into” their future resumes, how to achieve their learning goals in the time allotted, and how to measure success. Students were given

Table 2. Summary of Meta-Analytic Results.

Construct	H ^a	k ^b	N ^c	r ^d	SE ^e	Range of r ^f	Q Statistic ^g	Failsafe N
ILOC	H1 (+)	5	550	.34***	.10	.02 to .58	24.8***	80
Self-Efficacy	H2 (+)	18	2,292	.41***	.07	.13 to .60	148.1***	351
Motivation	H3 (+)	8	1,985	.26***	.06	.02 to .50	28.0***	96
Support	H4 (+)	10	1,822	.21**	.07	-.10 to .46	67.3***	95
Performance	H5 (+)	5	1,653	.26***	.04	.14 to .39	10.8*	60

Note. ILOC = internal locus of control.

a. Hypothesis.

b. Number of studies.

c. Sample size.

d. Correlation corrected for attenuation bias and weighted by sample size.

e. Standard error of the corrected average correlation r .

f. Range of the correlation r .

g. Q statistic for corrected average correlation r .

* $p < .05$. ** $p < .01$. *** $p < .00$.

maximum leeway to define their own SDL project (only the time frame was fixed). Students wrote a learning contract that outlined their plans for the semester. The students discussed their progress in creating and implementing their SDL projects with their peers in small groups and individually with the instructor throughout the semester. In the final written report, students were asked to reflect on their experience. A content analysis was conducted based on the 19 responses to identify common themes. Appendix A provides a complete description of the instructions provided to the 19 MBA students enrolled in the Selling and Sales Management course. These instructions were designed to clarify each student's learning goal, identify how to obtain the goal, and evaluate the progress and attainment of the goal. The same instructions are used in both undergraduate and graduate courses in sales with success; however, a content analysis is reported for the MBA course because these students were all employed full time. Appendix B provides an example of the SDL project completed by one of the students in an undergraduate sales management course to illustrate the application at the undergraduate level.

Methodology and Results of the Content Analysis

Four researchers independently assessed and coded the students' reflections to identify common themes using the qualitative software package NVivo 9. Using the same technique as Stock, Boyer, and Harmon (2010), reflections were analyzed using a word-for-word content analysis, and key concepts were identified. If the same theme or concept was introduced more than one time in a reflection, it was only counted once for that reflection. The researchers initially identified some key themes from the reflections so that the software could assign cases to these groups. The software was directed to code each key concept into a specific node or subtheme. In addition to using software, researchers used the

Graneheim and Lundman (2004) method for conducting content analysis on the SDL project reflections. The researchers read through the reflections several times to get a sense of the totality of responses. The researchers independently coded each reflection. The researchers then discussed each reflection with respect to which key themes and subthemes emerged. They developed a comprehensive list of those elements that were included. This procedure was used to develop the overall themes and then the subthemes within each main theme. Coding in this manner created five main themes, with multiple subthemes (see Table 3). These are consistent with the constructs previously examined in the Meta-Analysis section. The reemergence of these themes solidifies the importance of these variables in research and when implementing SDL in the classroom.

Internal Locus of Control

Many students remarked on the control they had over their projects. This presented itself in two ways. First, it manifested through individualized learning, where students remarked on the fact that learning was related to their own needs, goals, desires, and time. Examples include, "I learned at my own pace," "I liked the independent effort," "I got to choose my project, develop goals, self-motivate, attain something at the end that is my own," "I could go as far as I wanted with this project." Consequently, SDL is positively and significantly related to aspiration. I set my goals high and was responsible for achieving them" and "I used the project to set my goals and develop a map to get to where I want to be."

Second, a real-world implication theme emerged, so that it was relevant to their working lives. Students remarked that the project "had real world application." Students mentioned, "This is real life—beyond the classroom," and they used what they learned at work, "I have been able to employ the techniques from the project in my recruiting efforts." Overall,

Table 3. Frequency of Themes and Subthemes in Graduate Student Reflections on SDL Projects.

Themes	Subthemes ^a	Facets ^a	% of Total
Control	Individualized Learning (9)		45
	Relevant to Real World (6)		30
Self-Efficacy	Increased Confidence (3)		15
	Improved Ability		10
Motivation	Rewarding (12)		60
	Future Use (11)		55
	Project Motivated Me (6)		30
	Appreciation for Experience (2)		10
	Recommend to Others (2)		10
	Must Have Motivation (1)		5
Support	Need Support (2)		10
	Found Resources	Mentor (6)	30
		Other Resources (1)	5
Performance	Improved Performance (10)		50
	Achieved Project Goals (5)		25
	Did Not Meet Goals (6)		30
	Success	Recognized at Work (2)	10
		Job Placement/Advancement (8)	40
		Acquired Skills (3)	15
		Growth of Business (2)	10

Note. SDL = self-directed learning.

a. The number in parentheses represents the number of respondents.

students seemed to really appreciate the flexibility and autonomy they had in completing their SDL projects.

Self-Efficacy

Self-efficacy, the first of the themes that emerged, produced two subthemes: increased confidence and improved ability. Overall, students remarked that the SDL project was the factor that presented them with improvements in this area. Specific examples of confidence include, “The project helped me increase my confidence” and “I feel more confident that I have actual points and experiences to talk about in a job interview or another professional setting.” Students who felt more able after completing the project said, “The SDL project improved my ability.”

Motivation

External motivation was provided because the SDL project constituted 20% of the overall grade in the course. However, more appears to be at play. The theme of motivation emerged with multiple subthemes—rewarding, future use, recommend to others, appreciation for experience, project motivated me, and must have motivation to complete. A majority of students felt that the SDL project was rewarding. Students remarked that the project “was a valuable experience,” “was enriching,” “worthwhile,” “this was not an easy project, but it was worth the effort,” and “this project has afforded me the opportunity

to step outside the box and think ‘big picture’ rather than what is here and now. I set out to accomplish a goal and it is truly gratifying to being one step closer to achieving it.”

A majority of students noted that they would use SDL in the future, either when it is appropriate or as a continuation of the current project. Specifically, students said, “I expect to use SDL in the future,” “I will continue to create SDL projects and build on this one in the future,” and “I will use SDL in the future whenever necessary.” In addition, some students offered advice to the instructor to continue using the project in the future. “I recommend SDL to others” and “this should be continued in future semesters.” Other students showed appreciation by thanking the instructor for the experience and the project, “Thank you for the opportunity” and “I am grateful for the project and now I have a mentor.”

Many students expressed that the project motivated them, “I was motivated because of the structure,” “this project motivated me,” “I am not only happy with my process but I was also able to learn some additional unintended things through this experience which makes me want to use this method again,” and “The project motivated me because it was job related and that made it interesting and I got to learn more about my field.” One student added that to successfully complete the project, you must have motivation, “If one has the drive and motivation to accomplish a goal, it will happen.” So, it appears that the project creates motivation, and a motivated individual is more likely to successfully complete the project.

Support

Another theme that emerged, support, also produced sub-themes: “need resources/support” and “found resources.” Some students felt they needed resources and/or support to complete the project, and they included this as a part of the reflection. One student remarked,

Having to produce multiple re-writes for my original contract, it is evident that I needed more guidance in getting started with the project. When beginning the project I was unsure exactly what I was doing and how I was going to measure myself.

Other students found resources, whether they were mentors or other sources on the Internet.

Performance

Performance was highly discussed as a key theme in the analysis. Four subthemes emerged: improved performance, achieved goals of the project, did not meet the goals of the project, and success. Success had some of its own sub-themes: recognized at work, job placement/career advancement, acquired skills, and growth of the business. Half of the respondents noted that they experienced improved performance. Since the class was filled with working adults, all of the students were employed during the semester. Some students remarked that their performance increased in the area in which they were learning, “My performance improved in this area” and “I feel like I really learned, my newfound success is attributed to learning and growth from this project.” While others related their performance to work, “I can tell that this project made a difference because I feel like my job is easier,” “It improved my outlook at work and overall performance,” “I have more knowledge to do my job better, this was an efficient way of learning for me,” and “Going from not being able to speak in front of a crowd to being able to speak in front of the class while being videotaped, is a major accomplishment.” Some students commented on their performance regarding how well they achieved their goals, whether they did or did not meet the goals they set out for themselves. For example, “I successfully completed most of my goals” and “I was able to take the concepts learned and apply them to this project.” At the other end of the spectrum were “While I did not meet my primary goal, I was able to overcome some of the obstacles that prevented me from achieving my goals in the past,” “I achieved most of my goals, but not all of them,” and “I didn’t achieve all of my goals.” Overall, students met many goals but often shifted their original paths due to time and/or resource constraints.

Some of the most compelling subthemes that emerged were those stories of success. Students noted that they acquired skills because of the project whereas others noted that their businesses grew as a result of the project. Many

students reported triumphs at work, given the class project. For instance, some students were recognized at work, “I was recognized by my manager,” and

I have been noted by my superiors for doing a good job and having a good handle on what needs to get done. The equipment room has taken on more tasks and projects, but it is making everything more efficient and effective.

Many students were thrilled to report that the SDL project helped them advance their careers, “I got a promotion at work,” “I got a full time offer in my new field of auditing and accounting,” “I look forward to starting my new management position, the goal and result of completing this project,” “I am advancing at work, so this is a business success. I achieved my goals,” and “I benefited from the projects we have in this class, I now lead visits instead of trying to avoid being noticed and I have the first round of interviews scheduled for January as the hiring manager.”

Conclusion

The meta-analytical review suggests that internal locus of control, motivation, support, and self-efficacy are important antecedents to increase students’ willingness to use SDL. Self-directed learning can also lead to improved performance, and therefore, it is important that marketing educators determine how to effectively apply SDL practices within marketing education (Edmondson et al., 2012). The content analysis of student comments provides validation for the findings of the meta-analytic review and provides credibility in the ability of the meta-analysis to help explain some of the linkages by providing some data on directionality. For instance, the meta-analysis does not infer causality; however, students noted that the SDL project improved their confidence and ability. In this way, implementing SDL may help students improve their self-efficacy. In addition, students sought out support for their SDL projects, and some were frustrated until they received support. Therefore, when implementing SDL, support and resources should be provided to students. This can manifest itself in the form of technology, literature, mentorship, and any source of information that can help students succeed.

It may be necessary for the instructor to provide coaching so that students can find their own path. Most students remarked on locus of control factors related to the SDL project. Implementing an SDL project requires students to take control of their learning, so if students are not comfortable with this, they may require additional support depending on their levels of locus of control. Students were certainly motivated by the SDL project, but it is unclear whether the SDL project motivates or requires motivation to complete based on the content analysis alone. Since the SDL project is relevant to the student, it should elicit motivation, but as students

remarked, if they are not motivated, they will not complete the project. More research is needed to fully understand the relationship between SDL and motivation. Finally, students

remarked that the SDL project created performance improvements at work. Therefore, the SDL project improved performance in this sample.

Appendix A

Complex SDL Project Instructions With Commentary.

Project instructions	Commentary
1. Create a current and future resume	To assess individual learning needs and goals, students must begin by mapping out their current status and future aspirations. This is most simply executed by creating a current resume and one that they would like to have in 5 years. By creating these, students will quickly identify which titles they want to hold and what they would like to do. The resumes may include promotions, job activities, and job titles. The purpose is to allow every student to create a unique journey that will result in the greatest value for each learner.
2. Identify the disparity of the two resumes.	Once both resumes are created, the student can assess where the disparity lies between the resumes. For example, the student may identify that he wants to manage a marketing team, and he is a marketing student who is unemployed.
3. Identify what knowledge, skills, and experiences are required to progress to the future resume.	At this point, the student must identify the specific knowledge gaps that exist to achieve these future aspirations. The student may identify that to be a good leader or manager, he needs leadership skills.
4. Identify learning goals that can help achieve the knowledge and skills desired that can be achieved in the time frame of the assignment. (What will you learn? What resources will you need? When will it be completed? How will you provide evidence that you have learned?)	The student must determine how to acquire leadership skills during the course of the semester. He decides that attaining a mentor who is in a position that he would like to attain one day and mentoring others will help him identify his own strengths and weaknesses and self-reflect, as well as help others to achieve their own goals. He sets goals for weekly meetings and activities that must be accomplished.
5. Create a rubric to evaluate learning goals. (How will you verify that learning has occurred?)	The student finds an online evaluation tool to assess the mentor, which he will distribute to those he mentors. He also asks his own mentor to provide periodic evaluations for him. Create a learning contract that outlines 3 to 5, which is signed by the student and educator.
6. Assess progress toward goals	As the student receives feedback from his mentor and mentees, he adjusts and works on improving his communication style. He assesses his own managerial style and emphasizes the strengths of his personal leadership style. He keeps his weekly meetings.

Appendix B

Complex SDL Project Example Using a Learning Contract From an Undergraduate Sales Management Class

In a sales management class, the educator assigns this SDL project as 20% of the total grade. David is 21, a traditional student in the class, and has completed his current and future resume. He aspires to run a company one day. He notes that he is a student now taking business courses and will soon graduate with a job that he has already accepted. He will be on a track to management through an intense 2-year training program but doesn't have experience in running a company. He currently works at a cellular phone retailer part-time

selling cellular phones, accessories, and communication plans. Since his future resume states that he will receive a few promotions and become more involved in running the company, David decides that the experience he wants to achieve to best prepare him is to create a company and run it. David is very excited and motivated about his idea. The educator cautions David that creating a company and running it may be too much to take on during one semester.

As students share their experiences and ideas in class, David notes that he already has it figured out. Customers often bring their phones into the cellular phone company where he works and request repairs and upgrades. The company does not upgrade or customize the phone for customers (adding updated software programs, changing exterior designs of the phones, replacing broken parts like screens and

buttons). However, David knows how to customize phones and repair them. He has identified a market and has the talent to meet the needs of customers. The educator reluctantly agrees but wants to monitor David because it is a big project.

David now identifies goals that will help him successfully run the company within the time frame. He identifies several components: file for an LLC, make \$1,000 in sales, achieve a 20% profit margin, work on at least 10 devices, post two social media messages each week to advertise, visit three cellular stores each week to solicit customers, and perform one of each: buy, sell, repair, and customize a phone. After sharing the goals with the educator and the class, everyone felt that the goals were a good starting point. Since the goals were very clear, it would be easy to assess whether he achieved them or not. David decided to use a pass/fail metric system for each item but knew that he could revise the plan if things weren't working out. He created a learning contract, signed it, and handed it in.

Each week in class, David would report that his business was doing well and discuss the struggles and successes. By the end of the class, David decided not to file for an LLC because it was too costly for business that was uncertain (he was graduating and didn't have a reliable person to take over for him). David didn't stay on track with his store visits each week, which was a failure; however, his business was so busy that he couldn't take on the new business. This also stopped him from advertising via social media. He only posted a message every other week. So much positive word-of-mouth was generated by his business that he didn't need to create additional promotion. Since he was able to report back to class and get feedback periodically, he could stay on track and feel comfortable with his efforts, even though he wasn't working toward achieving some of the original goals.

In the end, David surpassed many of his goals. He achieved \$3,500 in sales, earned a 55% profit margin, worked on 22 devices, and accomplished three or more of each: buy, sell, repair, customize. He practiced building relationships with vendors and customers and experienced how logistics affects business. David also interviewed and trained several students to assess whether someone could run the business after he moved for his new position. He reported success and found that he loved managing his own business. When asked for feedback about the SDL project he reported, "It was awesome! I learned a lot more through this than with any other class project throughout my years here." The student was satisfied, and the educator felt that it was worth the effort because students in the class appreciated the educator for allowing them to learn what would help each individual student the most.

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