



International Journal of Self-Directed Learning[®]



**Volume 9, Number 1
Spring 2012**

The *International Journal of Self-Directed Learning* (ISSN 1934-3701) is published biannually by the International Society for Self-Directed Learning. It is a refereed, electronic journal founded to disseminate scholarly papers that document research, theory, or innovative or exemplary practice in self-directed learning. Submission guidelines can be found at <http://www.sdlglobal.com>

SUBSCRIPTION or BACK COPY ORDERS: Contact:

International Journal of Self-Directed Learning

7339 Reserve Creek Drive, Port Saint Lucie, FL 34986

issdl.sdlglobal@gmail.com

© 2012, International Society for Self-Directed Learning. All rights reserved. No portion of this journal may be reproduced without written consent. Exceptions are limited to copying as permitted by Sections 107 (“fair use”) and 108 (“libraries and archives”) of the U. S. Copyright Law. To obtain permission for article reproduction, contact the editors at:

International Journal of Self-Directed Learning

issdl.sdlglobal@gmail.com

Cover design by Gabrielle Consulting

International Journal of Self-Directed Learning

Volume 9, Number 1, Spring 2012

EDITOR

Lucy Madsen Guglielmino, *Florida Atlantic University (Emeritus)*

EDITOR EMERITUS

Huey B. Long, *University of Oklahoma (Emeritus)*

EDITORIAL BOARD

Naomi Boyer, *Polk State College*

Ralph G. Brockett, *University of Tennessee*

Robert J. Bulik, *University of Texas Academy of Health Science Education (Emeritus)*

Rosemary Caffarella, *Cornell University*

Philippe Carré, *Université Paris Ouest Nanterre La Défense, France*

Gary J. Confessore *George Washington University (Emeritus)*

Richard E. Durr, *OnLine Training Institute*

Brian Findley, *Palm Beach State College*

Paul J. Guglielmino, *Florida Atlantic University*

Joan H. Hanor, *California State University San Marcos*

Roger Hiemstra, *Syracuse University (Emeritus)*

Wayne James, *University of South Florida*

Carol Kasworm, *North Carolina State University*

William J. Kops, *University of Manitoba, Canada*

Theresa N. Liddell, *School District of Palm Beach County*

Patricia A. Maher, *University of South Florida*

Sharan Merriam, *University of Georgia (Emeritus)*

Magdalena Mo Ching Mok, *The Hong Kong Institute of Education*

Albertina Oliveira, *University of Coimbra, Portugal*

EunMi Park, *Johns Hopkins University School of Medicine*

Janet Piskurich, *Paul L. Foster Medical School, Texas Tech*

George Piskurich, *ACS, a Xerox Company*

Michael K. Ponton, *Regent University*

Kathleen B. Rager, *University of Oklahoma*

Thomas G. Reio, Jr., *Florida International University*

Karen Wilson Scott, *Idaho State University*

Peter L. Zsiga, *St. Lucie County Schools, Indian River State College*

Editorial Associate: Elizabeth G. Swann

Webmaster: Richard E. Durr, *Online Training Institute*

Preface

Quoting from our purpose statement, the International Society for Self-Directed Learning is “dedicated to the promotion of self-directed lifelong learning and to the encouragement and dissemination of continued research on self-directed learning both within and outside of institutional contexts: in childhood education, higher education, adult education, training and human resource development, as well as informal and non-formal contexts” (<http://sdlglobal.com/aboutusSDL.php>).

This journal, as one of the major efforts of the ISSDL, seeks to publish quality pieces reporting on both research and practice pertinent to the furtherance of self-direction in learning and the adoption of practices supportive of self-directed learning by organizations and institutions. As our larger world and our everyday lives become increasingly complex and rich with information and technology, opportunity and challenge, the attitudes, aptitudes, and behaviors associated with self-direction in learning become ever more vital--and organizations and institutions have a responsibility to provide supportive environments for their growth. Self-directed, lifelong learners are better suited to survive and thrive in complex environments.

This issue offers a wealth of new perspectives on self-direction in learning, ranging from the theoretical to the applied, from explication of terminology to large-sample research, from efforts to enhance self-directed learning in an early learning center to an institution of higher education.

Beginning the issue, Ponton and Carr offer a detailed explication of triadic reciprocal causation as presented in Bandura (1986, 1989). Based on the recognition that autonomous learning and self-directed learning involve a “*reciprocity of interaction* between the learner, his or her learning behaviors, and the environment,” their microanalysis of the possible interactions expands our understanding of this vital concept. Continuing in the theoretical realm, Jezegou builds on her 15 years of previous research on self-directed learning in adult distance education at the Ecole Supérieure des Mines de Nantes and in the research team *Apprenance et formation* at Paris Ouest University in Nanterre-La Défense (France). After a careful review of foundational concepts, she proposes a model of *presence* in distance education as supportive of online learners’ success.

Boyer and Usinger detail a large quantitative study designed to gather information to support strategic planning at a state college with an open-access policy, particularly in the area of distance education programming. Presenting information about the constructs that appear to impact student success across delivery formats, they offer insights that can be helpful for any organization or institution offering distance learning opportunities.

The last article in this issue addresses our earliest educational experiences in institutions. Mettler and Korte have many years of experience in nurturing self-direction in learning at the Early Learning Center at Jefferson County Open School in Colorado, the same school complex that provided the inspiration for Posner’s *Lives of Passion, School of Hope* (2009). They suggest and document four essential elements of a learning environment conducive to self-directed learning that have application far beyond the early learning classroom.

Lucy Madsen Guglielmino, Editor

International Journal of Self-Directed Learning

Volume 9, Number 1, Spring 2012

CONTENTS

<i>Preface</i>	ii
<i>Autonomous Learning and Triadic Reciprocal Causation: A Theoretical Discussion</i>	
Michael K. Ponton and Paul B. Carr	1
<i>Towards A Distance Learning Environment That Supports Learner Self-Direction: The Model Of Presence</i>	
Annie Jézégou	11
<i>Tracking Pathways To Success: Identifying Learning Success Factors Across Course Delivery Formats</i>	
Naomi Boyer and Peter Usinger	24
<i>The Early Learning Center at Jefferson Open School: (Re)Discovering the Joy of Learning</i>	
Ana Mettler and Mary Korte	38

AUTONOMOUS LEARNING AND TRIADIC RECIPROCAL CAUSATION: A THEORETICAL DISCUSSION

Michael K. Ponton and Paul B. Carr

Essential to social cognitive theory is the notion of triadic reciprocal causation through which human functioning is understood by considering interactions between the person, behavior, and the environment. Due to the lack of a balanced discussion of autonomous learning through the lens of reciprocal determinism in the literature, the purpose of this article is to offer such a discussion that highlights how autonomous learning—like any domain of human functioning—can only be adequately understood by considering the *reciprocity of interaction* between the learner, his or her learning behaviors, and the environment.

Social cognitive theory (SCT, Bandura, 1986) supports an emergent interactive view of personal agency (Bandura, 1989) in which human functioning is described by the reciprocal interplay of three constituent factors—person, environment, and behavior—referred to as triadic reciprocal causation. Bandura (1986) asserted the following: “progress in understanding how personal factors affect actions and situations is best advanced through the microanalysis of interactive processes” (p. 28); therefore, understanding any domain of intentional action (i.e., personal agency) requires an analysis of not only these factors but also their interaction.

For more than 10 years, SCT has been used as a theoretical framework for developing new conceptualizations of autonomous learning as well as self-directed learning (cf. Ponton, 1999; Ponton, 2009; Ponton & Carr, 1999; Ponton & Carr, 2000; Ponton, Derrick, & Carr, 2005; Ponton & Rhea, 2006). Thus, triadic reciprocal causation (TRC) has been an explicit part of this emerging literature. Unfortunately, the use of the behavioral model of Fishbein and Ajzen (1975; cf. Ponton & Carr, 1999) at various international meetings by these same theorists in order to describe the conative roles of desire (cf. Meyer, 2001), resourcefulness (Carr, 1999), initiative (Ponton, 1999), and persistence (Derrick, 2001) with respect to autonomous learning (cf. Confessore, 1991) has created a seeming overemphasis on the person-behavior interaction (i.e., learner autonomy vis-à-vis autonomous learning) at the expense of the

other two (i.e., person-environment and behavior-environment interactions). The purpose of this article is to discuss all three interactions in greater detail and outline not only bidirectional influences but also mediating paths.

Background

Social cognitive theory supports an agentic view of human activity, portraying people as proactive, intentional initiators of their actions and thoughtful self-reflectors of associated consequences. Unlike earlier theories of psychology that either discount the role of thinking on action (i.e., radical behaviorism) or the environment on action (i.e., radical cognitivism), SCT recognizes that the exhibition of agency depends upon the reciprocal interplay of all three of the following determinants: person (cognitive, affective, conative, and biological aspects), behavior, and environment (Bandura, 1986). These interacting factors constitute a model referred to as triadic reciprocal causation (see Figure 1). These three factors influence each other bidirectionally and interact to varying degrees dependent upon temporal and situational factors that include subjective perceptions and objective environments. Thus, causation describes mutual influence rather than a certainty of outcome.

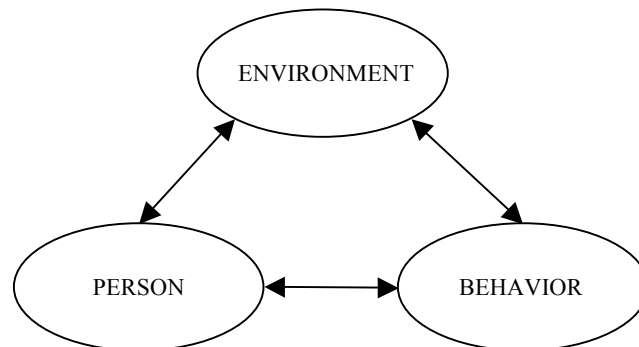


Figure 1. A model of the three interacting determinants of human behavior (Bandura, 1986, p. 24).

In 1999, Ponton defined autonomous learning as follows: “an agentic learning process in which the conative factors of desire, initiative, resourcefulness, and persistence are manifest” (p. xiii); these four factors were proposed by Confessore in 1991 as salient to autonomous learning. Ponton (2009) later asserted that “personal agency in autonomous learning can be manifest in imposed, selected, or created learning environments and exercised via collective, proxy, or individual agency” (p. 70). As a manifestation of personal agency, the phenomenon of autonomous learning can only be adequately understood by an analysis of the interactions associated with the TRC model.

The importance of using agency theory to understand autonomous learning is based upon the premise that autonomous learning refers to “purposeful, intentional learning” (Ponton & Rhea, 2006, p. 45) directed toward learning goals of personal

value. Personal agency is exercised whenever one uses forethought to motivate and guide action, acts intentionally in activating plans, regulates action toward goal accomplishment, and reflects upon actions and consequences to both learn and motivate future action (cf. Bandura, 2006). The motivating dynamics associated with forethought are explained by expectancy value theory (Atkinson, 1964; Vroom, 1964) and goal theory (Locke & Latham, 1990); the dynamics associated with self-reflection are explained by attribution theory (Weiner, 1985). Thus, when a person believes that learning represents an appropriate path to obtain a valued outcome, establishes a learning plan and goal to reach this outcome, is motivated to engage in the plan and pursue the goal based upon perceived valence in relation to other desirable outcomes as well as perceived capability to be successful in the learning, and intentionally acts with manifest resourcefulness, initiative, and persistence, then one is engaging in an autonomous learning activity. Note that the “plan” can be deciding to pay attention to a facet of an imposed environment, select aspects of the environment that support learning, or create entirely new environments; however, agency requires such intentional forethought regardless of the plan’s complexity. In addition, personal agency is exercised whether the learning activity is created by oneself (individual agency), by working with others (collective agency), or by someone else who the agent deems to have salient knowledge and skills (proxy agency) because it is the agent who intentionally acts regardless of the mode through which the agency is exercised (Bandura, 2006). (Note: In 2009, Ponton argued that *self-directed learning* occurs when the agent uses individual agency to create and direct learning activities in contrast to the multiple modes of agency and varied forms of the environment that can be used in autonomous learning.)

In 1999, Bussey and Bandura asserted the following:

In the agentic sociocognitive view...people are self-organizing, proactive, self-reflective, and self-regulating, and not just reactive organisms shaped and shepherded by external events. The capacity to exercise control over one’s thought processes, motivation, affect, and action operates through mechanisms of personal agency. Among the mechanisms of agency, none is more central or pervasive than people’s beliefs in their capabilities to produce given levels of attainments. Unless people believe they can produce desired effects by their actions, they have little incentive to act or to persevere in the face of difficulties. Perceived efficacy is, therefore, the foundation of human agency. (p. 691)

Motivational considerations such as value expectancies and causal and effort attributions do not result in actual motivation to engage in a given activity unless beliefs in personal capability—i.e., self-efficacy—are strong (Bandura, 1997). In general, people do not choose to engage in perceived futile endeavors; therefore, preferential activities transform into chosen pursuits based upon a strong sense of efficacy.

Using the self-reflective capability of personal agency, self-efficacy is based upon appraisals of four sources of information: enactive mastery experiences, verbal

persuasion, vicarious experiences, and physiological/emotive arousals (Bandura, 1997). The most authentic mechanism in building a strong sense of efficacy occurs when previous successful performances are personally attributed to ability rather than luck or the assistance from others (i.e., mastery experiences). Self-efficacy can also be strengthened when the valued opinions of others communicate to the agent that he or she has requisite capability (i.e., verbal persuasion). SCT also recognizes the power of observational learning particularly when personal experiences are lacking; therefore, people appraise their own capabilities by watching models deemed as similar (i.e., vicarious experiences) as suggested by the expression “if that person can do it, so can I.” Finally, interpretations of somatic feedback can be used to strengthen efficacy provided such feedback is interpreted as a natural, epiphenomenal reaction based upon the task at hand or as a temporary indicant of expanding capability. Note that the locus of information associated with enactive mastery experiences and physiological/emotive arousals is behavior whereas the locus for verbal persuasion and vicarious experiences is the environment; however, it is the person who receives and interprets this information thereby formulating beliefs in personal efficacy.

The environment includes objective and subjective aspects and can be shaped dynamically or statically. The objective environment includes the people, natural and manmade structures, and social systems that surround us; the subjective environment includes how we perceive the world around us. Both environments influence how we think, feel, and behave and can either facilitate or impede desired courses of action. In addition, environments can be proactively created (i.e., dynamically shaped via intentional thought or action) or reactively realized (i.e., statically shaped as a response to who we are). In the latter case, the environment refers to the social environment that reacts to one’s physical characteristics, status, or any other known characteristics; the environmental reaction occurs without purposeful causal action by the person (Bandura, 1986). A given person’s social environment includes those people who have chosen to be part of this environment and to interact in a manner influenced by their understanding of this person.

Discussion

The literature presented provides many salient constructs related to human functioning in general and autonomous learning in particular. However, such functioning is the result of a dynamic interplay of the TRC determinants. SCT rejects the notion that any human activity can be understood by either focusing on any subset of these determinants (e.g., a study of only the person, environment, or behavior) or considering a subset of interactions. The development of a complete picture of autonomous learning requires a complete discussion of this interplay in light of the aforementioned constructs.

Direct Effects

With three determinants, the TRC model provides six direct effects (see Figure 2). Using the theoretical ideas presented, each direct effect can be described as follows:

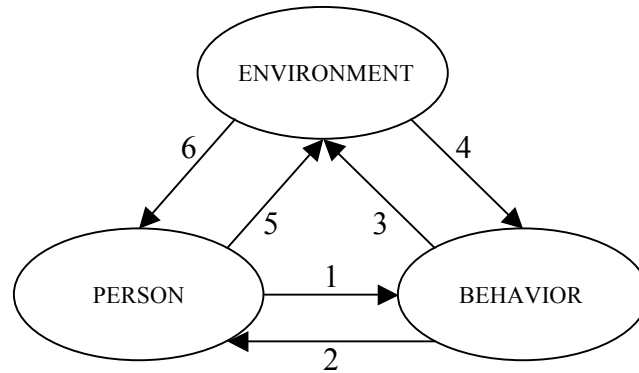


Figure 2. Six possible direct effects associated with the TRC model.

1. $P \rightarrow B$:

Motivational considerations coupled with self-efficacy provide the motivation for the agent to engage in autonomous learning in pursuit of new knowledge or skills. Example: a person anticipates satisfaction from learning more about a particular topic (i.e., a motivational consideration), decides that requisite capability exists to learn about this topic via a particular learning activity (i.e., an efficacy appraisal), and participates in this learning activity.

2. $B \rightarrow P$:

Autonomous learning leads to outcomes that inform motivational considerations as well as provides information (i.e., mastery experiences and physiological/emotive arousals) that informs efficacy beliefs; autonomous learning also leads to new knowledge or skills. Example: a person experiences a great deal of satisfaction from the learning associated with a learning activity (i.e., informs motivation) and believes that requisite capability to learn further from this activity is present (i.e., informs efficacy).

3. $B \rightarrow E$:

The autonomous learner focuses on aspects of an imposed environment or selects/creates an environment via individual, proxy, or collective agency conducive to autonomous learning. Example: a person selects a college course designed by a professor (i.e., a learning activity created via proxy agency).

4. $E \rightarrow B$:

The environment either facilitates or impedes autonomous learning. Example: a tutor selected by a student helps the student to learn.

5. $P \rightarrow E$:

Personal characteristics affect social environments (i.e., those persons, which include models and persuaders, who choose to surround the agent as well as the manner in which they behave and the information that they convey). Example: a famous person

enters a room filled with people and affects their behavior by his or her physical qualities and reputed characteristics.

6. $E \rightarrow P$:

Social experiences influence values and expectations; events influence time and situationally dependent motivational considerations; verbal persuasion influences efficacy beliefs. Example: A lull in familial activities on a Saturday afternoon motivates a mother to engage in an hour of reading about a topic of interest (i.e., time and situationally dependent motivation).

Mediating Processes

An extension of the direct effects, six complete (i.e., full cycle associated with the TRC model) mediating processes can also be described:

1. $P \rightarrow E \rightarrow B \rightarrow P$:

Personal characteristics affect social environments that can facilitate or impede autonomous learning, thereby producing within the agent (a) outcomes that inform motivational considerations, (b) efficacy information, and (c) new knowledge or skills.

2. $P \rightarrow B \rightarrow E \rightarrow P$:

The agent intentionally engages in autonomous learning via an environment conducive to learning. This learning activity, when observed, affects others who provide verbal persuasion that influence the agent's efficacy beliefs. In addition, the autonomous learning activity is placed temporally and situationally among other activities, thereby affecting motivational considerations within the agent.

3. $E \rightarrow B \rightarrow P \rightarrow E$:

The environment facilitates/impedes autonomous learning, thereby changing the agent in a manner that affects those who surround the agent.

4. $E \rightarrow P \rightarrow B \rightarrow E$:

The environment influences the motivation to engage in autonomous learning that involves focusing on aspects of an imposed environment or selecting/creating environments conducive to learning. In addition, this learning activity, when observed, affects others.

5. $B \rightarrow P \rightarrow E \rightarrow B$:

Autonomous learning produces outcomes, efficacy information, and new knowledge or skills that create observable changes in the agent so that others choose to facilitate or impede autonomous learning.

6. $B \rightarrow E \rightarrow P \rightarrow B$:

The agent selects or creates an environment conducive to learning. This learning activity, when observed, affects others and the manner in which they interact with the agent. In addition, the autonomous learning activity is placed temporally and

situationally among other activities, thereby affecting motivational considerations within the agent that influence future participation in autonomous learning.

Rebounding Processes

Direct and mediating effects also provide for “rebounding” processes. Three examples:

1. $E \rightarrow B \rightarrow P \rightarrow B$:

The environment facilitates/impedes autonomous learning and creates outcomes that are desirable or undesirable, thereby changing the agent in a manner that affects how the agent intentionally engages in autonomous learning.

2. $P \rightarrow B \rightarrow E \rightarrow B$:

The agent intentionally engages in autonomous learning by selecting or creating an environment conducive to learning. This learning activity, when observed, affects others who can facilitate or impede autonomous learning directly.

3. $E \rightarrow P \rightarrow B \rightarrow P$:

The environment presents to the person a repertoire of people from which the agent chooses and appraises a model in order to inform efficacy beliefs (i.e., vicarious experience).

The previous description of various interactions is not an attempt to offer any particular path analytic model but rather an attempt to reveal the rich complexity of implications associated with the TRC model that has no “beginning” or “ending” point; human action can be catalyzed in a multitude of ways that vary in time due to personological, environmental, or behavioral dynamics. It is quite likely that there are additional psychosocial constructs as well as different interpretations of the interactions highlighted that can be used to continue this discussion. In addition, further discussion can consider both interdeterminant interactions (e.g., many actions co-vary as do “situational happenings,” Bandura, 1986, p. 25) as well as temporal dynamics (i.e., interactions may be immediate or separated greatly in time, Bandura, 1986).

To learn means to change with respect to acquiring knowledge or skills, thereby influencing—in addition to being influenced by—how one thinks, feels, and acts; however, understanding the phenomenon of learning cannot be understood outside of context. That is, when there is agency in learning (i.e., intentional learning under the learner’s control), there must be a consideration of the following questions: (a) why learn? (b) what to learn? (c) when to learn? (d) how much to learn? (e) how long to learn? and (f) how to learn? All of these questions are answered by an agent who already has developed in a unique manner based upon previous learning.

But previous learning is dependent upon interactions between the agent and the environment as well as his or her behaviors; the focus of analysis is not merely on the agent. We learn from others either by direct instruction or by observation, we learn from ourselves as we make sense of our actions, and the manner and degree that we

are able to learn from others or ourselves is influenced by how much we have already learned from others or ourselves. Personal development—learning—cannot be understood by focusing solely on the person despite the fact that this is where learning occurs (i.e., no one can learn for someone else).

Similarly, the answers to the aforementioned questions cannot be understood by a singular personological focus. A simple conclusion of motivation theory is that at any given instant we do what we are most motivated to do; however, life is a series of instants in which there is great variation in the things we do resulting from the vacillations of our motivation. As we age, we have a relatively stable value system resulting from our previous learning, but we also have temporally unstable situational factors that interact with our value system, thereby influencing our motivation to act at any given moment. The varied answers to these questions—particularly the first five—are a result of this dynamic interplay.

The sixth question—how to learn—introduces the varied modes of agency through which our personal agency can be exercised. When we are motivated to learn, we can allow others to create our learning activity (i.e., proxy agency), work with others to create a learning activity (i.e., collective agency), or create a learning activity all on our own (i.e., individual agency); however, regardless of the mode, all three are catalyzed by our personal agency to intentionally learn something of personal value. The particular mode that is chosen, though, is based upon a consideration of not only utility (i.e., how well the mode may help us learn) but also self-efficacy; that is, we must believe that we are capable of enacting the mode to create an effective learning activity. As already discussed, the strengthening of efficacy appraisals is rooted in the interplay of the person, environment, and behaviors.

This article represents an attempt to offer a more complete discussion of the vast complexity associated with the phenomenon of agency in general and autonomous learning in particular as suggested by the TRC model (cf. Ponton & Rhea, 2006). A conclusion, however, should not be that to understand autonomous learning one must understand every conceivable construct and every conceivable interaction. There are likely a limited set of constructs and interactions that offer the greatest predictive power and explanatory utility to both understanding and, ultimately, facilitating autonomous learning; and specific environments (e.g., a given educational or corporate setting) may offer controls for certain constructs and interactions that promote parsimonious models with limited application. For all theory building, however, interactions associated with the TRC model's three determinants should be considered to as great an extent as is reasonable in order to capture the rich complexity of human agency.

References

- Atkinson, J. W. (1964). *An introduction to motivation*. Princeton, NJ: D. Van Nostrand.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, 44(9), 1175-1184.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W. H. Freeman and Company.
- Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on Psychological Science*, 1(2), 164-180.
- Bussey, K., & Bandura, A. (1999). Social cognitive theory of gender development and differentiation. *Psychological Review*, 106(4), 676-713.
- Carr, P. B. (1999). The measurement of resourcefulness intentions in the adult autonomous learner. *Dissertation Abstracts International*, 60, 3849.
- Confessore, G. J. (1991). Human behavior as a construct for assessing Guglielmino's Self-Directed Learning Readiness Scale: Pragmatism revisited. In H. B. Long & Associates (Eds.), *Self-directed learning: Consensus & conflict* (pp. 123-146). Norman, OK: Oklahoma Research Center for Continuing Professional and Higher Education of the University of Oklahoma.
- Derrick, M. G. (2001). The measurement of an adult's intention to exhibit persistence in autonomous learning. *Dissertation Abstracts International*, 62, 2533.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Englewood Cliffs, NJ: Prentice Hall.
- Meyer, D. T. (2001). The measurement of intentional behavior as a prerequisite to autonomous learning. *Dissertation Abstracts International*, 61, 4697.
- Ponton, M. K. (1999). The measurement of an adult's intention to exhibit personal initiative in autonomous learning. *Dissertation Abstracts International*, 60, 3933.
- Ponton, M. K. (2009). An agentic perspective contrasting autonomous learning with self-directed learning. In M. G. Derrick & M. K. Ponton (Eds.), *Emerging directions in self-directed learning* (pp. 65-76). Chicago, IL: Discovery Association Publishing House.
- Ponton, M. K., & Carr, P. B. (1999). *A quasi-linear behavioral model and an application to self-directed learning* (NASA Technical Memorandum 209094). Hampton, VA: NASA Langley Research Center.
- Ponton, M. K., & Carr, P. B. (2000). Understanding and promoting autonomy in self-directed learning. *Current Research in Social Psychology*, 5(19). Retrieved from <http://www.uiowa.edu/~grpproc>
- Ponton, M. K., Derrick, M. G., & Carr, P. B. (2005). The relationship between resourcefulness and persistence in adult autonomous learning. *Adult Education Quarterly*, 55(2), 116-128.
- Ponton, M. K., & Rhea, N. E. (2006). Autonomous learning from a social cognitive perspective. *New Horizons in Adult Education and Human Resource Development*, 20(2), 38-49.
- Vroom, V. H. (1964). *Work and motivation*. New York, NY: John Wiley & Sons.
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, 92(4), 548-573.

Michael Ponton (michpon@regent.edu) is Professor of Education at Regent University. His research interest is in the development of a better understanding of the role of human agency in learning.

Paul Carr (paulca2@regent.edu) is Professor of Global Leadership and Entrepreneurship at Regent University. His research interests are in resourcefulness in learning, adult learning, and autonomous learning.

Author Note

A preliminary version of this article was presented at the 26th International Self-Directed Learning Symposium, Cocoa Beach, FL, February 8-11, 2012. Correspondence concerning t his article should be addressed to Michael K. Ponton.

TOWARDS A DISTANCE LEARNING ENVIRONMENT THAT SUPPORTS LEARNER SELF-DIRECTION: THE MODEL OF PRESENCE

Annie Jézégou

This article presents the essential features of a model of presence in e-learning (Jézégou, 2012). It describes the three dimensions of the model and shows how they are related to one another. The article clarifies one of the main hypotheses of this model: that distance education environments with a high level of presence support learner self-direction. This general hypothesis is developed by separating it into two sub-hypotheses, respectively linked to one of the two dimensions of the socio-cognitive concept of self-direction (Carré, Jézégou, Kaplan, Cyrot, & Denoyel, 2011): self-determined motivation and self-regulation.

In France, a trend in research on *autoformation* (self-directed learning) focuses on “open distance learning environments” designed and implemented by training centers in companies, adult education providers, or institutions of higher education (Carré et al., 2011). These environments can be e-learning environments (the most prevalent), multimedia resource centers, spaces for individualized training, or blended learning environments. For several years, the purpose of French research has been to develop a theoretical framework for distance learning environments that support the learner’s self-direction. This framework, which is still under development, identifies several educational dimensions conducive to learner self-direction. These dimensions are particularly linked to the French work on the notion of openness (Collectif de Chasseneuil, 2001; Collectif du Moulin, 2002; Jézégou, 2005) and on a proposed model of *présence* in e-learning (Jézégou, 2012).

This presence, which is potentially measurable, results from certain forms of social interaction between teacher and learners, and between learners when they are engaged in a distance collaboration in a digital communication space. These spaces are materialized using tools such as web telephony, online chat and virtual classrooms (synchronous communication tools) and / or email, forums and wikis (asynchronous communication tools). More abstractly, they are associated with intellectual universes shared and supported by social interactions, some of which can generate presence within these digital spaces (Garrison & Anderson, 2003; Garrison & Arbaugh, 2007; Jézégou, 2012).

This article describes the essential features of the model of presence in e-learning (Jézégou, 2012) and the possible effects of presence, as modeled here, on learner self-direction. First, it briefly outlines the theoretical framework of the personal dynamic of self-direction inspired by Bandura's socio-cognitive paradigm (1986), self-determination theory (Deci & Ryan, 2000) and Zimmerman's triadic model of self-regulation (2002). Secondly, the three dimensions of the proposed model of presence are related to one another and the main hypothesis derived from this relation--that a high level of presence supports learner self-direction--is presented. Two sub-hypotheses of the effect of presence on learner self-determination and self-regulation follow. The direction for future empirical research is indicated in the conclusion.

The Double Dimension Of Learner Self-Direction: Theoretical Framework

For nearly thirty years, the theory of self-directed learning has been the subject of much research, following the pioneering work of Tough (1971), Knowles (1975), Long (1975), Hiemstra (1976), and Guglielmino (1978). The emerging French research on self-directed learning attributes to the concept of learner's self-direction a double dimension, within a socio-cognitive perspective (Brewer, 2009 ; Carré, 2003, Carré et al., 2011; Cosnefroy, 2011, Jézégou, 2010a). The first dimension is self-determined motivation (an autonomous, authentic free will to learn) while the second one is self-regulation (the exercise of agentic, self-controlled learning activity). The term *double* is used because of an interdependent relationship between these two dimensions (Carré, 2003; Cosnefroy, 2011; Deci & Ryan, 2000; Schunk & Zimmerman, 2007). A high level of initial motivation is necessary to involve oneself in an activity to achieve a personal goal, as is self-regulation of the different aspects of the conduct of this initial activity. Self-regulated processes are important in maintaining this motivation during the activity. This motivation is both the source and a consequence of these processes.

Self-direction is a socio-cognitive concept. Socio-cognitive theory (Bandura, 1986) takes the position that human behaviors are not primarily influenced by environmental determinants as stipulated in the behaviorist approach or the determinist current in sociology. Nor do they depend solely on internal or personal determinants as stated in current dispositionalist psychology. According to the socio-cognitive paradigm, these behaviors are part of a system of reciprocal causality between three types of determinants: personal determinants (**P**), environmental determinants (**E**), and behavioral determinants (**B**). Interactions between these three types of determinants are subject to reciprocal causality, and are in continuous interaction in variable and contingent importances to conditions, activities and temporalities.

The weight of these determinants is not always the same, nor do they necessarily act at the same time. However, the development or modification of one of them will cause a change in the system of their interaction, as circumstances vary from one individual to another.

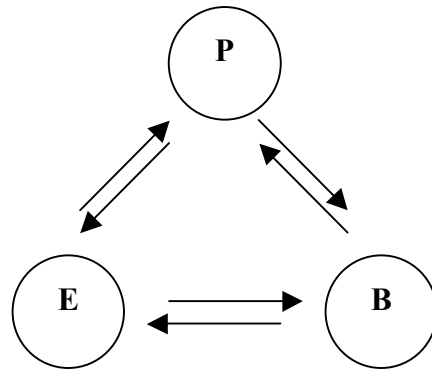


Figure 1. The model of triadic reciprocal causality (Bandura, 1986).

The learner's self-direction follows this reciprocal causality. In its broadest sense, it can be defined as the psychological control exercised by the learner on his training and learning (Long, 1989). This self-direction or psychological control is not directly observable. It manifests itself through those learner behaviors whose characteristic is to be both self-determined and self-regulated (Carré, 2003; Cosnefroy, 2011; Jézégou, 2010a). Some environmental factors (determinants) can promote or hinder these behaviors (Deci & Ryan, 2000; Hiemstra, 2000; Vallerand, Carbonneau, & Lafrenière, 2009; Zimmerman, 2000).

Self-Determined Motivation

According to the motivational theory of self-determination (Deci & Ryan, 1985), self-determined behaviors are linked to personal choice of activity. They are expressed through proactive and future oriented behavior. People who exhibit such behaviors can have three specific forms of motivation: intrinsic motivation, integrated motivation and identified motivation. The intrinsically motivated people are the most self-determined. They choose to engage in or lead an activity for the fun, interest or stimulation it provides. Those having an integrated motivation choose to engage in an activity, not for pleasure, but in order to follow their personal beliefs. By contrast, people with identified motivation press themselves into engagement with an activity because of external influences from their environment. This third form of motivation can sometimes also be qualified as self-determined because it may be linked to a personal choice, but the resulting behaviors are less self-determined than in the two previous forms. Thus, the behaviors resulting from these three forms of motivation have different levels of self-determination. Intrinsic motivation has the most positive impact on cognitive, behavioral, and emotional aspects of learning, followed by integrated motivation, then identified motivation. These effects decrease with the degree of extrinsic determination (Deci & Ryan, 2008; Laguardia & Ryan, 2000; Vallerand et al., 2009).

According to the theory of self-determination, behaviors resulting from self-determined motivation are driven by the quest for satisfaction of three basic psychological needs: the need for (a) autonomy, for (b) competency, and for (c) social

belonging. These three needs are universal and occur in all human activities, including learning (Deci & Ryan, 2000).

The need for autonomy refers to the need to feel free to make choices, to be responsible for actions and decisions. The need for competency is defined as the need for the ability to have satisfying interactions with the environment and to take charge personally of one's actions. The need for social belonging is the need to feel accepted by others and to maintain good relationships with them. According to the theory of self-determination, all humans try to satisfy these three needs in interactions with their environments. The environmental factors that afford people opportunities to satisfy these three needs facilitate self-determined motivation (intrinsic, integrated and identified motivation), whereas those that thwart satisfaction of these needs hinder it (Deci & Ryan, 2008; Laguardia & Ryan, 2000; Vallerand et al., 2009).

Self-Regulated Learning

Even learners with self-determined motivation can have difficulties in directing their own learning. Another dimension is important: the ability to develop effective strategies of self-regulation to succeed in learning.

In its broadest sense, self-regulation in learning refers to the control the learner exercises on his (her) own cognitive processes (Boekaerts, Pintrich, & Ziedner, 2000; Corno, 2001; Cosnefroy, 2011; Schunk & Zimmerman, 2007). The socio-cognitive research on self-regulation identifies three forms of control (Zimmerman, 2002). Each one refers to a specific form of self-regulation:

1. *Covert self-regulation* refers to control exerted by the learner on his or her emotional, socio-emotional and motivational states.
2. *Behavioral self-regulation* refers to control the learner exercises over his (her) learning behaviors.
3. *Environmental self-regulation* refers to control the learner exercises on the various components of his (her) educational environment.

These three forms of self-regulation are subject to reciprocal causality (Zimmerman, 2002) as illustrated in Figure 2.

Zimmerman (2000) proposes that learners better achieve personal goals by self-regulating their behavioral, environmental, and covert processes in a coordinated fashion. Each of the three forms of the self-regulated process is divided into three cycle phases: performance, forethought, and self-reflection, as depicted in figure 3.

First, the learner sets a personal learning goal and plans a strategy to attain this goal. This *forethought phase* precedes learning. As was noted earlier, learners do not engage in goal setting and strategic planning unless they are personally motivated. This strategy is then applied and observed, and its implementation modified (performance phase). Finally, performance and satisfaction are self-evaluated, attributing causal significance to the results. The self-regulatory approach may be modified during subsequent efforts to learn and perform. This self-reflection phase will, in turn, influence the forethought phase of the next episode of learning; this cycle continues indefinitely.

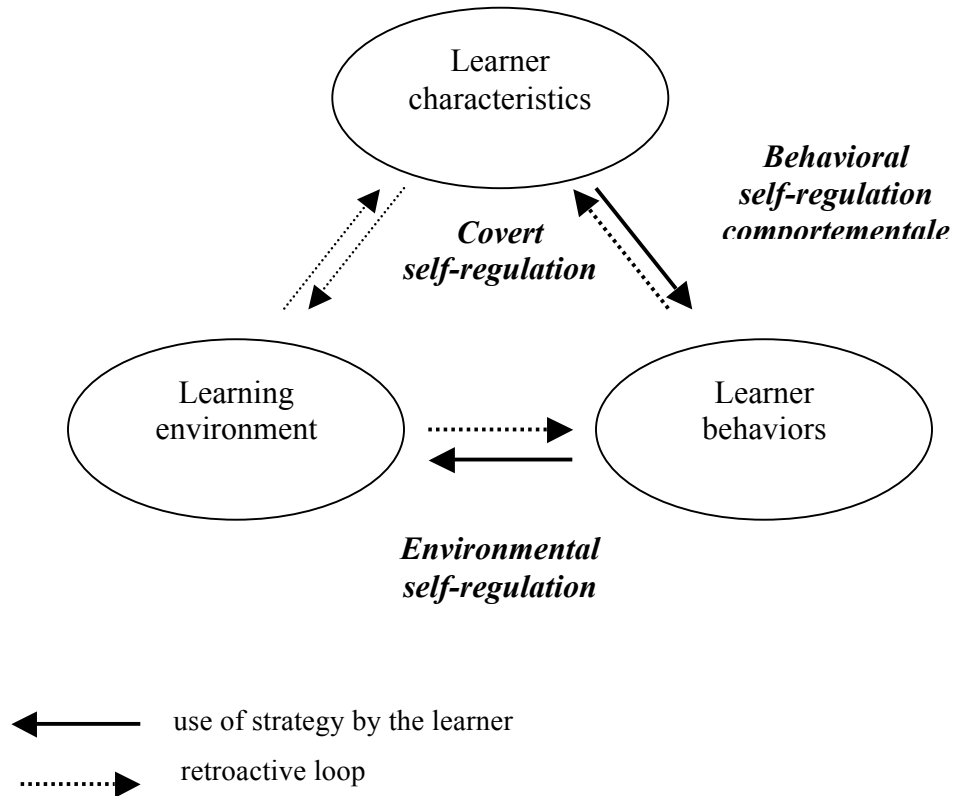


Figure 2. The triadic forms of self-regulation (Zimmerman, 2002).

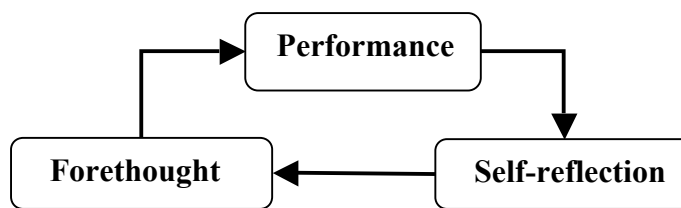


Figure 3. Cyclical phases of self-regulation (Zimmerman, 2000).

According to the socio-cognitive theory (Bandura, 1999; Schunk & Zimmerman, 2007), certain environmental factors sustain the process of self-regulation, helping the learner to exercise control linked to the three forms of self-regulation previously described.

Possible Effects Of A High Level Of Presence On Learner Self-Direction

Building on this theoretical base, the second section of the article describes the essential features of a proposed model of presence in e-learning (Jézégou, 2012), including its three dimensions and how they relate to one another; and presents a general hypothesis linked to learner self-direction in online environments. This theoretical hypothesis is that a high level of presence, as an environmental factor, promotes the learner's self-directed behaviors. At the current stage of the work on this model of presence, this hypothesis is separated into two sub-hypotheses, each linked to a dimension of the concept of self-direction, self-determined motivation and self-regulation.

Essential Features Of The Model Of Presence In E-Learning

The model of presence asserts that certain forms of social interactions between teacher and learners, and among learners engaged in distance collaboration create presence within the digital communication space. This presence fosters the emergence and the development of an online community of inquiry. In its broadest sense, a community of inquiry is a relatively flexible social organization that is directed towards the resolution of a problematic situation such as dealing with a doubt about a given topic, reacting to an unexpected event, or completing a project (Deledalle, 1998; Dewey, 1938, Favre, 2006; Jézégou, 2010b). The members of this community build a collective experience that allows them to reach their goal while pursuing their own personal objectives (Deale & Charlier, 2006; Dillenbourg, Poirier, & Carles, 2003; Henri & Lundgren-Cayrol, 2001; Jézégou, 2010b).

The North American model of community of inquiry in e-learning also asserts this general position (Garrison & Anderson, 2003; Garrison & Arbaugh, 2007; Garrison & Archer, 2007). However, the French model addresses the notion of presence in e-learning from a different angle, defining and characterizing it differently (Jézégou, 2012). This difference is linked to two fundamental aspects of the model. The model of presence in e-learning places greater emphasis on the notion of transaction derived from the philosophy of pragmatism (Dewey & Bentley, 1949) and, in contrast with the North American model, is also affiliated with the European approach to socio-constructivism (Bourgeois & Nizet, 1997; Darnon, Butera, & Mugny, 2008; Monteil, 1987; Perret-Clermont & Nicolet, 2002). Both approaches share a focus on the notion of "contradictory" collaboration (Baudrit, 2008; Damon & Phelps 1989; Jézégou 2012).

In its broadest sense, collaboration is characterized by the equal status of group members, their participation in social interactions, and the sharing of a jointly defined set of activities in solving a problematic situation (Dillenbourg, Poirier, & Carles 2003; Henri & Lundgren-Cayrol 2001; Jézégou 2010b). "Contradictory" collaboration emphasizes the positive role played by transactions on individual and collective construction of knowledge. Transactions are social interactions that include confrontations between different points of view, mutual adjustments, negotiations, and deliberations (Dewey & Bentley, 1949; Lipman, 1995). The European socio-

constructivist approach places greater emphasis on the expression of divergent opinions and the confrontation between different points of view on the learning process.

According to Dewey and Bentley (1949), the transactions are manifested in jointly-led activities and in a common method of practice of inquiry. This practice would be the best way to clarify the situation, to solve the problem, and to justify the solutions. It can be considered a scientific process in which the results are generated in an "experimental" manner as assumptions are revised in the light of experience and deliberation. The practice of inquiry unfolds in four stages (Dewey & Bentley, 1949). A working definition of the problem posed by the situation is first devised. The situation is observed and analyzed to abstract and refine the problem and understand its specific character and causes. In the second stage, hypothetical actions that may solve the problem are formulated and compared. The goal is to determine which hypothesis seems likely to offer the most satisfactory solution without losing sight of the complexities of the situation. The third stage is to test the hypothesis to see if it offers an effective solution to the problem. The final stage involves a critical analysis of the three previous stages of the investigation, whose aim is to assess the practical consequences of testing and the results obtained. This concluding stage may redefine the situation or communicate the results of the completed investigation in a mutual and transparent way.

The notion of transaction and the method of practical inquiry are at the heart of the model of presence in e-learning proposed (illustrated in Figure 4).

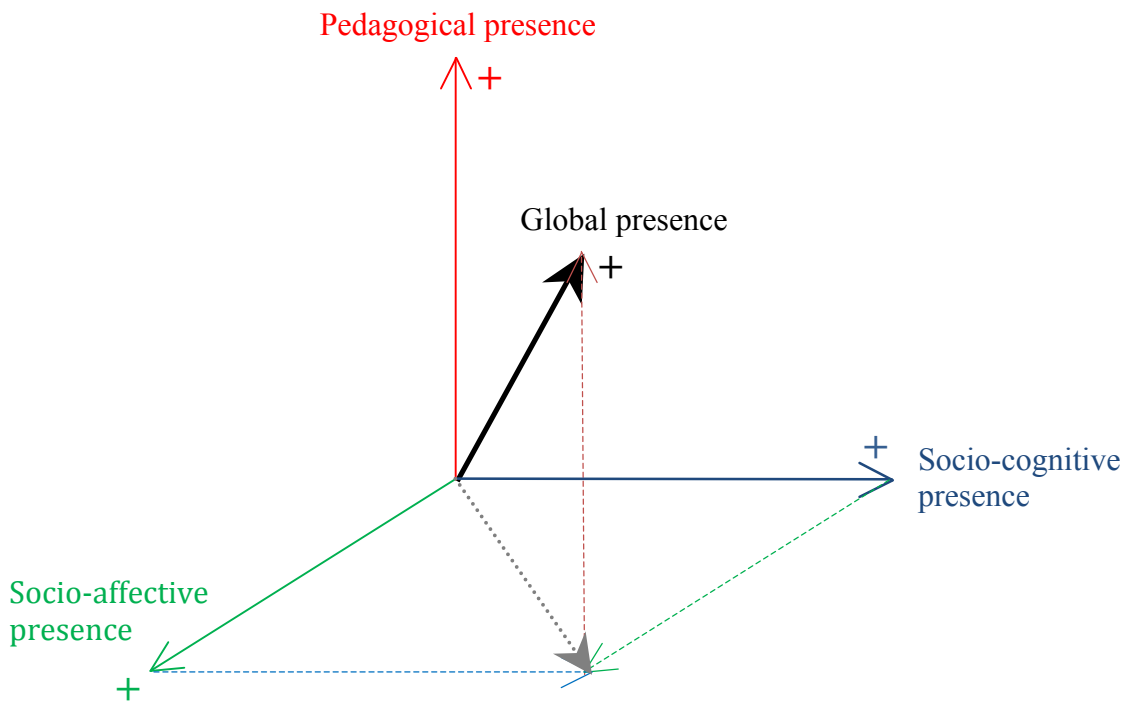


Figure 4. The tridimensional model of presence in e-learning (Jézégou, 2012).

In this model, presence is defined as follows (Jézégou, 2012):

Presence in E-learning results from certain forms of social interactions between teacher and learners, but also among learners themselves when they are engaged in distance collaboration within the digital space of communication. These social interactions are simultaneously:

1. transactions between learners during the inquiry; in other words, social interactions involving a confrontation of individual views, with mutual adjustments, negotiations and deliberation about how to solve shared problems (socio-cognitive presence);
2. interactions that create a socio-emotional climate conducive to transactions between learners; in other words, social interactions that are symmetrical and amiable (socio-affective presence);
3. interactions of coordination, animation, and moderation that the teacher maintains with the learners to support the transactions between learners while contributing to a conducive socio-emotional climate (pedagogical presence).

This definition describes each aspect of the three dimensions of the model: (a) socio-cognitive presence, (b) socio-affective presence and (c) pedagogical presence. This model supports the principle that presence in e-learning is the result of these three dimensions; therefore, the greater the level of each, the greater the overall presence. The model formulates the general theoretical hypothesis that a high level of presence in e-learning, as an environmental factor, supports the learner's self-direction.

Two Sub-Hypotheses: The Mediating Role Played By Two Psychological Needs

The model of presence in e-learning proposes to separate this general hypothesis into two specific sub-hypotheses. First, a high level of presence in e-learning can promote learners' self-determined behaviors, mainly through its impact on the satisfaction of their need for social belonging. The indirect influence of a high level of presence on the learner's self-determined behaviors is depicted in Figure 5.

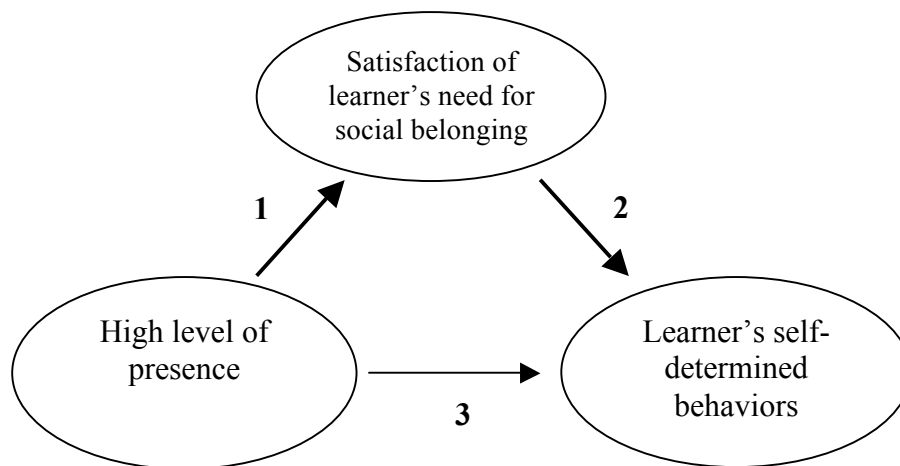


Figure 5. The indirect influence of a high level of presence on the learner's self-determined behaviors.

This sub-hypothesis is based on the fact that presence in e-learning, as modeled here, fosters the emergence and development of an online community of inquiry. This is particularly the case when the level of presence is high. High levels of presence can respond to the learner's need for social belonging in the online community. In other words, presence can contribute to feelings of being respected, understood, and accepted by peers while maintaining authentic and constructive relationships with them. This feeling of involvement with others can stimulate the learner's self-determined behaviors. The pleasure, interest and stimulation aroused by collaboration in solving a shared problem at distance can promote intrinsic motivation. The learner can also contribute to the community in an intense and authentic way as a result of personal convictions (integrated motivation).

The second sub-hypothesis is that a high level of presence in e-learning can promote the learner's self-regulated behaviors, mainly through its impact on the satisfaction of his or her need for competency. The indirect influence of a high level of presence on the learner's self-regulated behaviors is depicted in Figure 6.

The model of presence in e-learning proposes that the group constructs the distance collaborative experience that enables it to reach a shared goal of solving a problematic situation linked to the formalization and implementation of solutions. This collaborative experience is based on the practice of inquiry, requiring each learner in the group to begin a process of self-regulation. Such self-regulation is begun by choosing and defining the shared goal of resolving a problem situation to be analyzed collectively. The self-regulation process underlies the conception and experimentation that determines the chosen strategy towards resolution of a hypothesis as well as the monitoring of this strategy. These two stages of the practice of inquiry require each learner in the group to enter the first two phases of the process of self-regulation: of forethought, and of performance. Finally, this practice obliges learners to make a contribution to the analysis and evaluation of their experience, and its effects upon them. This stage of the practice of inquiry stimulates the self-reflection phase of the process of self-regulation.

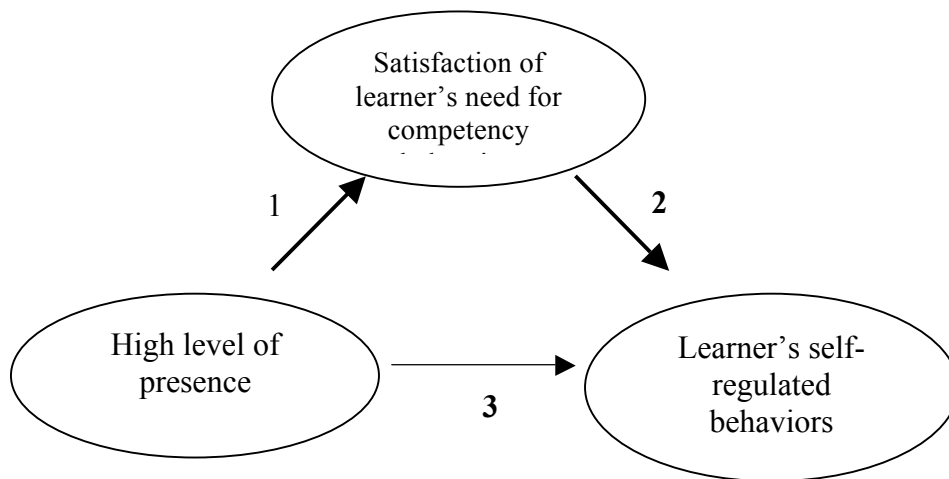


Figure 6. The indirect influence of a high level of presence on the learner's self-regulated behaviors.

Participation in such a collaborative experience will not be natural or automatic for all of the learners in the group, especially when they are separated geographically (Deale & Charlier, 2006; Dillenbourg et al., 2003; Henri & Lundgren-Cayrol, 2001). They may feel unable to begin a process of self-regulation. This feeling may be heightened when they realize that the process requires control of emotion and motivation (internal self-regulation), control of collaborative behaviors (behavioral self-regulation), and control of the spatio-temporal, human and technological aspects of the collaboration (environmental self-regulation).

So, a high level of presence (socio-cognitive, socio-affective, and pedagogical) in the digital communication space, maintained throughout the duration of the inquiry, can help the learner to develop efficient self-regulating behaviors. It can validate the learner's own satisfaction with striving towards competence, notably in collaborating at distance with others, but also while self-regulating the different aspects of his study and learning.

In summary, a high level of presence in e-learning would help to satisfy two psychological needs of the learner: the need for social belonging and the need for competency. It would then exercise an indirect influence on the development of self-directed behavior(s) with the characteristics of being both self-determined and self-regulated. Thus a high level of presence in e-learning would promote learner self-direction.

Conclusion

This article has described the essential features of a model of presence in e-learning and the possible effects of presence, as modeled here, on learner's self-direction. This model can be applied to any form of distance education, although e-learning environments are the most prevalent in this field. Empirical research is needed to confirm the relevance of this model and identify its strengths and vulnerabilities. This empirical research will help to refine and verify the general theoretical hypothesis presented in this article.

To test this hypothesis, a matrix of indicators of presence will be constructed and a protocol for assessing the level of presence existing within an environment of e-learning will be developed. This development process, which will involve multiple researchers, will be described in a future paper. With the help of other experts on self-directed learning, qualitative empirical research will be conducted on students enrolled in e-learning environments. The goal of the research is to verify the hypothesis that a high level of presence supports learner's self-direction. Another perspective is to relate the model of presence to the previous works on the notion of openness in distance learning environments (Jézégou, 2005, 2008, 2010c). The research indicates that high levels of openness and freedom of choice for learners as they structure their learning environments promote self-direction. This research program will contribute to a theoretical framework for distance learning environments that support learner's self-direction.

References

- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice - Hall.
- Bandura, A. (1999). Social cognitive theory of personality. In L. Pervin & O. John (Eds.), *Handbook of personality* (2nd ed.) New York: NY: Guilford.
- Baudrit, A. (2008). *L'apprentissage collaboratif: Plus qu'une méthode collective ?* Bruxelles, Belgium: De Boeck.
- Boekaerts, P. R., Pintrich, P. R., & Zeidner, M. (Eds.). (2000). *Handbook of self-regulation*. London, England: Academic Press.
- Bourgeois, E., & Nizet, J. (1997). *Apprentissage et formation des adultes*. Paris, France: Presses Universitaires de France.
- Brewer, S. (2009). Articuler dispositions des apprenants et dispositifs de formation : Perspectives d'un linguiste en éducation. In G. Lameul, A. Jézégou, & A. F. Tollat (Eds.), *Articuler dispositifs de formation et dispositions des apprenants* (pp. 45-70). Lyon, France: Chronique Sociale.
- Carré, P. (2003). La double dimension de l'apprentissage autodirigé. Contribution à une théorie du sujet apprenant. *Revue Canadienne pour l'étude de l'éducation des adultes*, 17, 66 - 91.
- Carré, P., Jézégou, A., Kaplan, J., Cyrot, P., & Denoyel, N. (2011). "L'autoformation": The state of research on self-directed learning in France. *International Journal of Self-Directed Learning*, 8(1), 7 - 17.
- Collectif de Chasseneuil. (2001). *Accompagner les formations ouvertes*. Paris, France: L'Harmattan.
- Collectif du Moulin. (2002). *Intégrer les formations ouvertes*. Paris, France: L'Harmattan.
- Corno, L. (2001). Volitional aspects of self-regulated learning. In B. Zimmerman & D. Schunk (Eds.), *Self-regulated learning and academic achievement*. Mahwah, NJ: Lawrence Erlbaum, 191 - 225.
- Cosnefroy, L. (2011). *L'apprentissage autorégulé: Entre cognition et motivation*. Grenoble, France: PUG.
- Damon, W., & Phelps, E. (1989). Critical distinctions among three approaches to peer education. *International Journal of Educational Research*, 13(1), 9-19.
- Darnon, C., Butera, F., & Mugny, G. (2008). *Des conflits pour apprendre*. Grenoble, France: PUG.
- Deale, A., & Charlier, B. (Eds.). (2006). *Comprendre les communautés virtuelles d'enseignants: Pratiques et recherches*. Paris, France: L'Harmattan.
- Deci, E., & Ryan, R. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.
- Deci, E., & Ryan, R. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227-268.
- Deci, E., & Ryan, R. (2008). Favoriser la motivation optimale et la santé mentale dans les divers milieux de vie. *Canadian Psychology / Psychologie Canadienne*, 49(1), 24-34.

- Deledalle, G. (1998). *La philosophie Américaine*. Bruxelles, Belgium: De Boëck Université.
- Dillenbourg, P., Poirier, C., & Carles, L. (2003). Communautés virtuelles d'apprentissage: E-jargon ou nouveau paradigme? In A. Taurisson & A. Sentini (Eds.), *Pédagogie.net*. Montréal, Canada: Presses Universitaires.
- Dewey, J. (1938). *Experience and education*. New York, NY: Collier Books.
- Dewey, J., & Bentley, A. F. (1949). Knowing and the known. In J. A. Boydston (1989) (Ed.), *John Dewey: The later works. 1925–1953* (Vol.16, pp. 2-294). Carbondale, IL: Southern Illinois University Press.
- Favre, M. 2006. Qu'est-ce la problématisation ? L'apport de John Dewey. In M. Favre & E. Vellas (Eds.), *Situations de formation et problématisation* (pp. 17-30). Bruxelles, Belgium: De Boeck.
- Garrison, D. R., & Anderson, T. (2003). *E-learning in the 21st century. A framework for research and practice*. New York, NY: Routledge.
- Garrison, D. R., & Arbaugh, J. B. (2007). Researching the community of inquiry framework: Review, issues, and future directions. *The Internet and Higher Education*. 10(3), 157 - 172.
- Garrison, D. R., & Archer, W. (2007). A theory of community of inquiry. In M. G. Moore (Ed.), *Handbook of distance education*. (2nd ed., pp. 77-88). Mahwah: NJ: Laurence Erlbaum Associates.
- Guglielmino, L. M. (1978). Development of the Self-Directed Learning Readiness Scale. *Dissertation Abstracts International*, 38, 6467A.
- Henri, F., & Lundgren-Cayrol, K. (2001). *Apprentissage collaboratif à distance*. Sainte Foy: Presses Universitaires du Québec.
- Hiemstra, R. (1976). *Lifelong learning*. Lincoln, NE: Professional Educators Publications.
- Hiemstra, R. (2000). Self-directed learning: The personal responsibility model. In G. Straka (Ed.), *Conceptions of self-directed learning: Theoretical and conceptual considerations* (pp. 93-108). Berlin, Germany: Waxmann.
- Jézégou, A. (2005). *Formation ouvertes: Libertés de choix et autodirection de l'apprenant*. Paris: L'Harmattan.
- Jézégou, A. (2008). Apprentissage autodirigé et formation à distance. *Distances et savoirs*, 6(3), 343-364.
- Jézégou, A. (2010a). Diriger par soi-même sa formation et ses apprentissages. In B. Raucent, C. Verzat, & L. Villeuneuve (Eds.), *Accompagner les étudiants* (pp. 53-85). Bruxelles, Belgium: De Boëck Université.
- Jézégou, A. (2010b). Community of inquiry in e-learning: A critical analysis of the Garrison and Anderson model. *Journal of Distance Education* 24(3), 12-29. Retrieved from <http://www.jofde.ca/index.php/jde/article/view/707>
- Jézégou, A. (2010c). Le dispositif GEODE pour évaluer l'ouverture d'un environnement éducatif. *Journal of Distance Education* 24(2), 83-108. Retrieved from <http://www.jofde.ca/index.php/jde/article/view/62>
- Jézégou, A. (2012). Presence in e-learning: Theoretical model and perspectives for research. *Journal of Distance Education* 26(2). Retrieved from <http://www.jofde.ca/index.php/jde/article/view/809>

- Knowles, M. (1975). *Self-directed learning: A guide for learners and teachers*. New York, NY: Association Press.
- Laguardia, J., & Ryan, R. (2000). Buts personnels, besoins psychologiques fondamentaux et bien être: Théorie de l'autodétermination et application. *Revue Québécoise de Psychologie*, 21(2), 281-303.
- Lipman, M. (1995). *A l'école de la pensée*. Bruxelles, Belgium: De Boeck & Larcier.
- Long, H. B. (1975). Independent study in the education of Colonial adults. *Journal of Research and Development in Education*, 8, 54-65.
- Long, H. B. (1989). *Self-directed learning: Emerging theory and practice*. Norman, OK: University of Oklahoma.
- Monteil, J. (1987). A propos du conflit socio-cognitif: D'une heuristique fondamentale à une possible opérationnalisation. In J. Beauvois, R. Joule, & J. Monteil (Eds.), *Perspectives cognitives et conduites sociales. Théories implicites et conflits cognitifs* (Vol. 1, pp. 199-210). Paris, France: Cousset DelVal.
- Perret-Clermont, A. N., & Nicolet, M. (Eds.). (2002). *Interagir et connaître. Enjeux et régulations sociales dans le développement cognitif*. Paris, France: L'Harmattan.
- Schunk, D., & Zimmerman, B. (Eds.) (2007). *Motivation and self-regulated learning: Theory, research and applications*. New York, NY: Lawrence Erlbaum Associates.
- Tough, A. (1971). *The adult's learning projects: A fresh approach to theory and practice in adult learning*. Toronto: Ontario Institute for Studies in Education.
- Vallerand, R. (2000). Deci and Ryan's self-determination theory: A view from the hierarchical model of intrinsic and extrinsic motivation. *Psychological Inquiry*, 11, 312-318.
- Vallerand, R., Carbonneau, N., & Lafrenière, M. C. (2009). La théorie de l'autodétermination et le modèle hiérarchique de la motivation intrinsèque et extrinsèque. In P. Carré & P. Caspar (Eds.), *Traité de psychologie de la motivation* (pp. 47-66). Paris, France: Dunod.
- Zimmerman, B. (2000). Self-regulatory cycles of learning. In G. Straka (Ed.), *Conceptions of self-directed learning: Theoretical and conceptual considerations* (pp. 221-234). Berlin, Germany: Waxmann.
- Zimmerman, B. (2002). Efficacité perçue et autorégulation des apprentissages durant les études: Une vision cyclique. In P. Carré, & A. Moisan (Eds.), *La formation autodirigée. Aspects psychologiques et pédagogiques* (pp. 69-88). Paris, France: L'Harmattan.

Annie Jézégou (annie.jezegou@mines-nantes.fr*) is researcher in Education at the Ecole Supérieure des Mines de Nantes (France). Her laboratory is the CREAD (*Centre de Recherche sur l'Education, les Apprentissages et la Didactique*) at the European University of Rennes 2 (France). She has been working for close to 15 years on the topic of self-directed learning in adult distance education and has produced books and numerous articles.

**TRACKING PATHWAYS TO SUCCESS:
IDENTIFYING LEARNING SUCCESS FACTORS ACROSS
COURSE DELIVERY FORMATS**

Naomi Boyer and Peter Usinger

This exploratory study supports strategic planning efforts, with a focus on student self-direction, to improve the success of an academic institution's distance education programming, to moderate the gap in failure and withdrawal rates between course delivery formats, and to provide tailored support mechanisms to the diverse student population the college serves. The constructs that impact course success were investigated through use of the Motivated Strategies for Learning Questionnaire (MSLQ) with 570 students enrolled in various course delivery formats.

The open-access opportunity for students to enroll in college provides a gateway for many who otherwise would not have the option, due to financial constraints, previous academic record, or life conditions, to participate in higher education. Perhaps tied to the limitations that may have restricted post-secondary enrollment options or linked to other variables, successful retention of students and completion of two and four years degrees remains a national concern. The rate of program completion within a traditional timeframe for community college students is close to 50% (Goldrick-Rab, 2010). Course completion rates vary based upon subject matter and other variables; however, course delivery via online courses appears to have a strong impact on retention. There is a 10-20% increase in withdrawals and failures in online courses (Doherty, 2006; Herbert, 2006).

Retention and Success in Online Courses

Despite the fact that learning in online courses has not been found to have significantly different outcomes in terms of grades and student satisfaction, the presented research appears to only be focused on course completers, who are traditionally "well-prepared and motivated students" (Jaggars & Bailey, 2010, p. 11). Those students who do not persist in online courses are influenced by a number of variables including technological competency, previous experience with online courses, personal life commitments, demographic variables, prior educational success, e-learning quality, and individual characteristics (Harrell & Bower, 2012; Ho, Kuo, &

Lin, 2009; Nora & Snyder, 2008; Yen & Lui, 2009). Harrell and Bower (2012) identified a three-variable model that was useful in predicting community college student persistence in online courses that included auditory learning style score, GPA, and basic computer skills.

Self-Directed Learning and Success in Online Environments

A number of researchers indicate that self-directed learning habits contribute to online success and satisfaction, as well (Ho, et al., 2009; Yen & Liu, 2009). It has been suggested that promotion of “better self-directed learning habits, meta-cognitive skills, and online collaborative behaviors” will facilitate adult learners’ levels of “e-learning readiness” (Ho, et al., 2009). In addition, it has been noted that online learning requires a “fairly high degree of self-motivation, self-direction, and self-discipline” (Moore, 1987) and course success in online environments is linked to concepts of independence, self-direction, or autonomy (Guglielmino & Guglielmino, 2002). Yen and Lui (2009) link higher learner autonomy with completion of community college online courses and overall success in grades; yet there is a gap in the literature in regard to persistence in online learning and interventions for community college students (Nash, 2008). Motivation has been noted as one of the most important components of online educational success, particularly as it is linked to the reasons for choosing to do a task and individual beliefs about the ability to perform a task (Yukselturk & Bulut, 2007).

Self-direction in learning is a complex concept with a variety of aspects and associated constructs. In practice, self-direction involves shifting the responsibility for the learning activity from an external source such as teacher to the individual learner, with the learner assuming some level of control and active engagement with the learning process. Whether this assumption of control takes the form of behavioral activities such as planning objectives, identifying resources, setting timelines, developing products, and authenticating learning or through the process of discovery and exploration, the individual learner is central to the acquisition of knowledge.

A number of factors have been identified as contributing to self-direction. Stockdale (Stockdale & Brockett, 2011) identified initiative, control, self-efficacy, and motivation as part of her instrument, the PRO-SDLS, as contributing to self-direction. Others have included level of autonomy, self-regulation, time management, self-control, person and social responsibility as factors relating to self-direction (Li, Wright, Rukavina, & Pickering, 2008; Pajares, 2002). In addition, the Self-Directed Learning Readiness Scale includes the constructs of love of learning, self-concept as an effective independent learner, view of learning as a beneficial process, initiative in learning, self-understanding, and acceptance of responsibility for one’s own learning (McCune, Guglielmino, & Garcia, 1990). Autonomy, as measured by the Learner Autonomy Profile, includes four factors: desire to learn, learner resourcefulness, learner initiative, and learner persistence (Confessore & Park, 2004).

Purpose

Student success and completion in online higher education courses is an ongoing concern noted throughout the distance learning literature. In order to increase retention and student success it is critical to identify inhibiting factors. The purpose of this paper is to investigate the constructs that impact course success in different delivery formats. It is hypothesized that those constructs linked to higher levels of self-direction (i.e. intrinsic goal orientation, control beliefs about learning, self-efficacy for learning and performance, meta-cognitive self-regulation, effort regulation, and help seeking) will correlate with student success and/or course completion. The study will examine the following questions:

1. What differences between students selecting different course delivery formats exist in factors typically associated with self-directed learning behaviors and meta-cognitive strategies that lead to higher course success and persistence rates?
2. What variations in self-directed learning and meta-cognitive success strategies exist within courses of the same subject domain and across different disciplines, and to what extent are these variations confounded with particular course delivery formats?
3. What relationships (correlations) exist among selected MSLQ constructs, and how robust are these relationships across different sets of student characteristics (e.g., demographics), course characteristics (e.g., Math vs. English), and delivery formats?
4. What predictive pathways (via multivariate regression modeling) can be established (if any) that are able to explain how certain self-directed learning behaviors and meta-cognitive strategies can lead to improved course success/completion rates (and perhaps to subsequently higher college success)?

This exploratory study was conducted in a state college with an open-access policy. It aims to support the strategic planning efforts to improve the success of distance education programming, to assist with moderating the gap in failure and withdrawal rates between course delivery formats, and to provide more tailored support mechanisms to the diverse student population the college serves. In addition, the analysis is expected to provide a multivariate model designed to describe cause-effect relationships between key MSLQ constructs and student learning outcomes within and across the academic disciplines involved in the study. In the process, the researchers also hope to be able to disaggregate the MSLQ into a chain of constructs that can effectively predict a significant portion of self-directed learning success for different student populations.

Method

During the fall term of 2011, Polk State College administered a slightly shortened version of the Motivated Strategies for Learning Questionnaire (MSLQ) by Pintrich and DeGroot (1990) to a self-selected set of undergraduate students enrolled

in college-level and developmental education courses. The selection criteria for the courses involved a multi-year review of online course success rates and flagged those courses for participation in the study that had shown consistently high failure and withdrawal rates and typically registered students for more than one section per term.

The questionnaire was made available as an online survey (Zoomerang) to students enrolled in all three delivery types of these courses: distance learning, hybrid/blended, and face-to-face formats. The purpose of this paper is to investigate the constructs that impact course success. It is hypothesized that those constructs linked to higher levels of self-direction (i.e. intrinsic goal orientation, control beliefs about learning, self-efficacy for learning and performance, meta-cognitive self-regulation, effort regulation, and help seeking) will correlate with student success and/or course completion.

Sample/Population

The described study was conducted within the context of a four-year state college, a teaching institution with a mission of access, low-cost instruction, development of talent to support local workforce needs, and AA, AS, and Baccalaureate degree completion. The institution had total enrollment of 11,775 in the Fall 2011 term. The study sample was drawn from students enrolled in 15 courses covering the following areas of curriculum: Developmental Math and Writing, Mathematics and Statistics, English Composition, Earth Sciences, Psychology, Medical Terminology, and Nursing. One technical course, OST1142 (Keyboarding) was excluded from the discipline-specific clusters later in the analysis. Emails were sent to 4,860 students with instructions and a link to complete the instrument.

A follow-up email was sent to students approximately two weeks later, and faculty were asked to encourage students to complete the inventory. In total, 570 students completed the inventory, representing a response rate of 11.7%. The distribution of responses across courses and the number of associated sections is shown in Table 1.

Instrumentation

The Motivated Strategies for Learning Questionnaire (MSLQ) was utilized as the primary tool for gaining information about the students' value, expectancy, and affect for learning (Pintrich, Smith, Garcia, and Mckeachie, 1991). The MSLQ has a number of scales that align to the general concept of self-direction and self-regulation of learning and covers many of the constructs associated with self-direction in learning. In addition, the MSLQ had become a formative assessment tool of choice for a number of faculty teaching Student Learning Success and Developmental Math courses to facilitate their support for student learning behaviors that lead to higher academic success rates.

The MSLQ includes a motivation section and learning strategies section. The measure includes the following scales and sub-scales: motivation-intrinsic goal orientation, extrinsic goal orientation, task value, control of learning beliefs, self-efficacy for learning and performance, test anxiety; and learning strategies scales: rehearsal, elaboration, organization, critical thinking, metacognitive self-regulation,

Table 1. *Student Participation Across Courses*

Course	Traditional Delivery Format		Hybrid Delivery Format		Online Delivery Format		Unknown Format
	Number of Sections	Number of Students	Number of Sections	Number of Students	Number of Sections	Number of Students	Number of Students
ENC0025	16	33	0	0	1	2	7
ENC1101	30	41	0	0	4	5	6
ENC1102	21	39	3	7	3	5	7
ESC1000	10	16	0	0	3	6	3
HSC1531	3	5	0	0	4	8	1
MAC1105	24	43	0	0	2	4	5
MAT0018	28	46	0	0	0	0	6
MAT0028	32	51	0	0	0	0	9
MAT1033	32	52	0	0	2	5	5
MGF1106	9	25	0	0	1	2	4
NUR1033C	2	8	0	0	0	0	1
NUR1211C	2	15	0	0	0	0	0
NUR2421C	3	10	0	0	0	0	1
OST1142	0	0	0	0	1	4	1
PSY2012	21	33	0	0	6	12	6
STA2023	12	26	0	0	2	2	3

time and study environment management, effort regulation, peer learning, and help seeking (Duncan & McKeachie, 2005). The motivation section assesses students' "goals and value beliefs for a course, their beliefs about their skill to succeed in a course, and their anxiety about tests in a course" (Pintrich, et al., 1991, p. 3). The learning strategies section includes cognitive and metacognitive strategies and student management of different resources (Pintrich, et al., 1991). The questionnaire was made available as an online survey (Zoomerang) to students enrolled in all three delivery types of these courses, distance learning, hybrid/blended, and face-to-face formats.

While all MSLQ scales were utilized to relate to the behaviors of self-direction in online courses, some of those that did not display significant correlations with course success were considerably shortened to reduce the time students needed to complete the questionnaire. While the instrument's primary focus is motivation and learning strategies, a number of the integrated constructs can provide information about self-directed behaviors and then be utilized to consider issues relating to student success and retention in online courses. Of the 15 scales of the MSLQ, five constructs were included completely, five almost completely, while five constructs were represented partially, leading to a total number of 61 out of the original 81 questions (excluding demographic items). One of the eliminated survey items was excluded from the Time/Study Environment Management scale ("I attend class regularly.")

since it wasn't applicable to the online learning environment in the given form. A summary of the scale differences between the original MSLQ and the version used in this study is shown in Table 2, along with the reliability estimates (Cronbach's alpha). The instrument took approximately 15 minutes to complete.

Major Findings and Conclusions

Overall, and as indicated by the comparative Cronbach's alpha values in Table 2, all MSLQ constructs in this study showed the same robust reliability and replicable factorial patterns that validated the original scale design (Duncan & McKeachie, 2005; Pintrich, et al., 1991). Similarly, zero-order correlations between the different motivational and cognitive scales replicate the MSLQ auto-correlation patterns established by the same studies or subsequent reviews.

Table 2. *MSLQ Item by Construct Comparison*

MSLQ Scale Definition	Original MSLQ		Applied in Study	
	Items	α	Items	A
Motivational Constructs				
1. Intrinsic Goal Orientation	4	0.74	4	0.72
2. Extrinsic Goal Orientation	4	0.62	2	0.62
3. Task Value	6	0.90	2	0.86
4. Control of Learning Beliefs	4	0.68	3	0.70
5. Self-Efficacy for Learning & Performance	8	0.93	8	0.95
6. Test Anxiety	5	0.80	4	0.75
Learning Strategies Constructs				
1. Rehearsal	4	0.69	2	0.69
2. Elaboration	6	0.75	2	0.59
3. Organization	4	0.64	2	0.58
4. Critical Thinking	5	0.80	5	0.79
5. Metacognitive Self-Regulation	12	0.79	10	0.83
6. Time/Study Environmental Management	8	0.76	7	0.80
7. Effort Regulation	4	0.69	4	0.71
8. Peer Learning	3	0.76	3	0.78
9. Help Seeking	4	0.52	3	0.73
Total Items in Questionnaire	81		61	

While those results and the relatively high response rate were encouraging, some aspects of the remaining analysis had to be postponed until the next questionnaire submission since the participation by students in online and hybrid classes did not allow for a more detailed/disaggregated analysis.

The exploration of response-differences between course types, course-delivery formats, and interactions between academic discipline and delivery format was hampered by the fact that only 62 students (or about 10.9% of the sample) that participated in the study were enrolled in hybrid and online courses. In addition, 65 participants (or 11.4% of the sample) selected not to provide an accurate student ID and had to be excluded from core sections of the analysis.

Despite those challenges, the data analysis provided interesting insights into the relationships between the motivational factors and learning strategies and the accomplished course outcomes. Table 3 displays the correlations between the respective MSLQ scales and achieved course grade (A = 5; B = 4; C = 3; D = 2; F/W=1), course success (1 = passed; 0 = failed/withdrew), and delivery format of the course (1 = Face-to-Face; 2 = Hybrid/Online).

Table 3. *Correlations between MSLQ Scales, Course Outcomes and Delivery Method*

Pearson Correlation Coefficients (N=502)			
	Grades	Success	Method
Motivational Constructs			
1. Intrinsic Goal Orientation	0.13*	0.10*	-0.01
2. Extrinsic Goal Orientation	0.02	0.02	-0.08
3. Task Value	0.16***	0.11**	0.00
4. Control of Learning Beliefs	0.19***	0.13**	0.04
5. Self-Efficacy for Learning & Performance	0.33***	0.26***	0.02
6. Test Anxiety	-0.20***	-0.14**	-0.02
Learning Strategies Constructs			
1. Rehearsal	0.01	0.02	-0.03
2. Elaboration	0.03	0.00	0.00
3. Organization	0.05	0.04	-0.06
4. Critical Thinking	-0.02	-0.02	0.09
5. Metacognitive Self-Regulation	0.00	-0.02	0.01
6. Time/Study Environmental Management	0.12**	0.04	0.00
7. Effort Regulation	0.17***	0.11*	0.02
8. Peer Learning	-0.02	0.02	-0.18***
9. Help Seeking	-0.03	0.02	-0.26***

Note: * $p < .05$. ** $p < .01$. *** $p < .001$.

While motivational constructs show similar correlation patterns indicated by previous studies, the scales associated with learning strategies show only weak relationships with grades or successful course completion. Among motivational factors, intrinsic goal orientation, self-efficacy, and test anxiety have been traditionally

the most powerful factors of academic success, and the study data supports those findings to a large degree. There are several indicators of challenges that underprepared students face when starting their postsecondary career aspirations. The absence of any significant relationship between course outcomes and metacognitive self-regulation, combined with the fact that the student sample seems to rely mostly on effort learning strategies, appears to have little or nothing to do with the subsequent students' course grades/success.

About half of the students participating in this study have been enrolled in developmental education or entry-level college courses, and more than 40% are part-time students. Studies conducted, for example, by the Community College Research Center (Jaggars & Bailey, 2010) in the traditional community college environment have indicated that the lack of successful learning strategies, particularly for part-time students, is a key contributor to student course failures, while adding significant time to degree completions. With currently 90% of the College's FTIC enrollment not college-ready in all core placement areas, these results speak for a strong need to advance the teaching of successful learning strategies into the First-Year curriculum and the associated learning support environments. The last column of Table 3 addresses one of the main questions raised at the onset of this study and concerns the differences between students selecting different course delivery formats and if there are significant relationships between factors typically associated with self-directed learning behaviors and meta-cognitive strategies that lead to higher course success and persistence rates. Interestingly, the only two MSLQ constructs that display significant correlations with the course delivery method have also no relationship to student success or course grades.

For students enrolling in online classes, the opportunities for Peer Learning and Help Seeking that involve support mechanisms common to the traditional face-to-face environment are not easily replicable in a virtual learning space. Thus, it is not surprising that online students show a significantly lower degree of activities associated with those two constructs. That these factors do not seem to directly impact either course success or grades (at least in the statistical analysis presented) could easily lead to the conclusion that they are, perhaps, not sufficiently important and that students are obviously aware of the facts and learn to adjust accordingly. However, this could be a precarious conclusion since it would bypass the impact peer learning and help seeking has on other academic success factors. Instead, it should point toward the enhanced support needed in the online learning environment to compensate for the corresponding lack of personal, learning-centered transactional opportunity. In other terms, even if these factors don't appear to directly impact course outcomes, they might significantly mitigate the circumstances under which course success is achieved. Additional research is required to assess the degree this mitigation is aligned with a motivational pathway model proposed by Connell, Spencer, and Aber (1994).

Another question raised concerned the variations in self-directed learning and meta-cognitive success strategies that exist within courses of the same subject domain and across different disciplines, and to what extent these variations are confounded with particular course delivery formats. While the sample constraints do not allow for a course-level exploration of factors, the sample sizes for academic-area-specific

analyses are sufficient enough to at least establish a baseline for four areas, English, Math, Nursing, and Science. The correlations between MSLQ factors and course outcomes pertinent to each area are shown in Table 4.

Based on course enrollment, four academic area clusters were formed: English, with 152 respondents; Math, with 288 respondents; Science, with 90 respondents; and Nursing, with 35 students completing the MSLQ. While the different sub-sample sizes are strongly affecting the statistical comparability of the significance levels associated with the correlations presented, the data still show a high level of instrument immanent sensitivity to the specificities of the various disciplines.

In our sample, students' course success in English is largely influenced by the extent to which they are able to manage their time and study environment. In addition, those who want to achieve a better grade display higher levels of self-efficacy and effort. All other factors had basically no influence on the academic outcomes for this subgroup. In contrast, student success in mathematics shows significant correlations with motivational constructs (Control Beliefs, Self-Efficacy, and Test-Anxiety), while learning strategies, in the form of higher effort regulation, only seem to matter when it comes to achieving better grades. In addition, Intrinsic Goal Orientation and Task Values play a supportive role as the motivational underpinnings that help in securing a higher grade. Particularly noteworthy is the highly negative impact of test anxiety on mathematics course outcomes; no other academic area comes even close on the level of impact produced by this factor, an outcome that mirrors the results of many studies in this area.

Unfortunately, the variety of different types of scientific disciplines across the many areas of social and natural sciences from which student participation in the study originated was coupled with an equally rich variety of responses across the 15 constructs of the questionnaire. As a result, the only significant correlation for this academic area we can report is the relationship between good time and study management of students and their final grade.

The nursing cohort, on the other hand, shows a completely different pattern, and one that is most aligned with the correlations between original MSLQ constructs and course grades. Within the traditional community college environment, nursing students have been long viewed as the top achievers, a group that displays the utmost dedication to the motivation and behaviors it takes to graduate and succeed in licensure exams.

The magnitude of relationships between MSLQ factors and course outcomes shown in Table 4 underlines this dedication, but also the sensitivity of the instrument to the different learning environments and student cohorts. This becomes particularly visible when comparing the correlations between grades and the factors of Peer Learning and Help Seeking. Both seem to be a natural expression of the collaborative behaviors relevant in a nursing environment, but they only show high correlations for this group and display no course-level impact relevance across the other academic domains involved in this study.

Table 4. Correlation between MSLQ Scales and Course Outcomes by Academic Area

Pearson Correlation Coefficients	English (N=152)		Math (N=288)		Science (N=90)		Nursing (N=35)	
	Grades	Success	Grades	Success	Grades	Success	Grades	Success
Motivational Constructs								
1. Intrinsic Goal Orientation	0.02	-0.02	0.14*	0.11	-0.04	-0.04	0.17	0.19
2. Extrinsic Goal Orientation	-0.01	-0.04	0.05	0.08	0.03	0.06	0.16	-0.06
3. Task Value	0.00	-0.08	0.13*	0.09	0.16	0.08	0.15	-0.05
4. Control of Learning Beliefs	0.08	-0.05	0.20**	0.16*	0.06	-0.01	0.28	0.07
5. Self-Efficacy Learn. & Perf.	0.18*	-0.05	0.38***	0.32***	0.20	0.13	0.24	0.17
6. Test Anxiety	-0.01	-0.02	-0.29***	-0.20**	-0.08	0.04	-0.05	0.17
Learning Strategies								
1. Rehearsal	-0.02	0.03	-0.01	0.05	0.05	-0.04	0.36*	0.32
2. Elaboration	0.06	-0.03	-0.04	-0.04	0.07	-0.04	0.28	0.20
3. Organization	0.06	0.03	0.03	0.05	0.14	-0.01	0.25	0.10
4. Critical Thinking	0.03	-0.07	-0.09	-0.04	-0.14	-0.19	0.13	0.03
5. Metacognitive Self-Regulation	0.03	-0.02	-0.03	0.00	0.07	-0.13	0.33	0.18
6. Time/Study Management	0.26**	0.24**	0.06	0.00	0.27*	0.00	0.41*	0.30
7. Effort Regulation	0.20**	0.15	0.19**	0.10	0.09	0.01	0.47**	0.42*
8. Peer Learning	-0.09	-0.02	-0.07	-0.01	0.08	-0.01	0.34	0.19
9. Help Seeking	0.01	0.04	-0.08	0.02	0.07	-0.05	0.20	0.09

Note: * $p < .05$. ** $p < .01$. *** $p < .001$.

As indicated earlier, one of the main concerns that triggered our research is the need for a clear understanding of student success factors related to instructional and general academic support. The absence of any significant correlation between Metacognitive Self-Regulation and most other Learning Strategies-related factors with course-level outcomes certainly emphasizes the fact that underprepared high-school

students do not transform magically into postsecondary success stories; they need the college’s environment and support to help them gain the necessary skills to master the challenges they face.

The need for additional support for developmental students becomes even more obvious when we assemble all MSLQ constructs to carry out a multivariate regression analysis in assessing the combined impact of motivational factors and learning strategies on course outcomes achieved by participating students across all academic disciplines involved in this study. Table 5 details the results of this analysis,

Table 5. *Multivariate Regression Analyses*

Multivariate Regression Analyses	Grades			Success		
	F-Value	Pr > F	R-Square	F-Value	Pr > F	R-Square
Model	6.15	<.0001	0.16	3.55	<.0001	0.10
Parameter Estimates	t-Value	Pr > t 	St-B	t-Value	Pr > t 	St-B
Intrinsic Goal Orientation	-1.33	0.1838	-0.08434	-0.69	0.4930	-0.04503
Extrinsic Goal Orientation	-0.39	0.6940	-0.01845	-0.10	0.9166	-0.00509
Task Value	1.22	0.2247	0.06795	0.26	0.7967	0.01493
Control of Learning Beliefs	-1.67	0.0958	-0.11134	-2.02	0.0434	-0.13996
Self-Efficacy for Learning & Performance	5.70	<.0001	0.42505	5.07	<.0001	0.39189
Test Anxiety	-1.90	0.0577	-0.09207	-0.99	0.3212	-0.04977
Rehearsal	0.34	0.7307	0.02127	1.05	0.2956	0.06701
Elaboration	-0.20	0.8401	-0.01278	-1.04	0.2984	-0.06825
Organization	0.11	0.9155	0.00657	0.25	0.8051	0.01582
Critical Thinking	-0.84	0.4004	-0.04790	-0.80	0.4257	-0.04700
Metacognitive Self-Regulation	-0.71	0.4796	-0.05465	-0.73	0.4641	-0.05864
Time/Study Environmental Management	1.97	0.0489	0.12231	0.54	0.5888	0.03471
Effort Regulation	0.31	0.7572	0.01957	0.39	0.6944	0.02576
Peer Learning	-0.49	0.6210	-0.02886	-0.51	0.6130	-0.03059
Help Seeking	-0.54	0.5873	-0.03169	0.69	0.4907	0.04169

which indicate that only two of the 15 MSLQ factors involved in this study are having a significant impact on course grades: Self-Efficacy and Environmental Time/Study Management; and only Self-Efficacy emerges as a significant predictor of course success. While both models show statistically significant F-values and explain a reasonable variance proportion of grades (16%) and course success (10%), they do not produce conclusive evidence about the impact of any of the other factors involved.

Not all implications of these results are conclusive at this point, and the findings certainly suggest more research involving larger student cohorts across all disciplines and delivery channels; however, they still point to implications relevant for colleges that need to respond to the challenges of open-door admissions and high proportions of academically underprepared students.

The data directly suggest the need to increase student support across several indicated areas. Among the major obstacles for student populations in community colleges, and particularly those with high percentages of developmental education needs, are the lack of meta-cognitive abilities and critical thinking skills that would allow them to study smarter instead of just harder. When Effort Regulation is significantly correlated with course outcomes, but does not serve as a predictor of either course grades or course success, it becomes a relevant academic intervention to assist students with more effective ways of learning and developing cognitive practices that improve comprehension, concept organization, and knowledge retention.

The more successful student population in this study displayed higher degrees of intrinsic motivation, interest in the subject matter of the course, stronger control beliefs, and the confidence (self-efficacy) to overcome academic challenges and not let test-anxiety get in the way. Those students are also better managers of their time and study environments and make more of an effort to stay focused on their tasks. What they are acutely missing are improved learning strategies that would allow them to produce positive academic outcomes more effectively.

If faculty and educational support areas are able to facilitate the growth of the associated skills and strategies, it is very likely that academic success will be increased across all student populations. And, as indicated earlier, if the distance learning conditions can be augmented with more effective mechanisms to compensate for the current deficiencies in peer learning and help-seeking options, those improvements might assist in overcoming the still-prevailing gaps between online and traditional delivery formats in terms of student completion and success.

References

- Confessore, G. J., & Park, E. (2004). Factor validation of the Learner Autonomy Profile, Version 3.0 and extraction of the short form. *International Journal of Self-Directed Learning*, 1(1), 39-57.
- Connell, J. P., Spencer, M. B., & Aber, J. L. (1994). Educational risk and resilience in African-American youth: Context, self, action, and outcomes in school. *Child Development*, 65, 493-506.

- Doherty, W. (2006). An analysis of multiple factors affecting retention in Web-based community college courses. *Internet and Higher Education*, 9(4), 245-255.
- Duncan, T. G., & McKeachie, W. J. (2005). The making of the Motivated Strategies for Learning Questionnaire. *Educational Psychologist*, 40(2), 117-128.
- Goldrick-Rab, S. (2010). Challenges and opportunities for improving community college student success. *Review of Educational Research*, 80(3), 437-469.
- Guglielmino, L. M., & Guglielmino, P. J. (2002). Learner characteristics affecting success in electronic distance learning. *Twenty-First Century Advances in Self-Directed Learning*. Norman: Oklahoma Research Center for Continuing Professional and Higher Education of the University of Oklahoma.
- Harrell, I. L., & Bower, B. L. (2011). Student characteristics that predict persistence in community college online courses. *American Journal of Distance Education*, 25(3), 178-191.
- Herbert, M. (2006). Staying the course: A study in online student satisfaction and retention. *Online Journal of Distance Learning Administration*, IX (IV). Retrieved from <http://www.westga.edu/~distance/ojdl/winter94/herbert94.htm>
- Ho, L. A., Kuo, T. H., & Lin, B. (2009). Influence of online learning skills in cyberspace. *Internet Research*, 20(1), 55-71.
- Jaggars, S. S., & Bailey, T. (2010). *Effectiveness of fully online courses for college students: Response to a department of education meta-analysis*. New York, NY: Community College Research Center, Teachers College, Columbia University. Retrieved from <http://ccrc.tc.columbia.edu/Publication.asp?UID=796>
- Li, W., Wright, P. M., Rukavina, P. B., & Pickering, M. (2008). Measuring students' perceptions of personal and social responsibility and the relationship to intrinsic motivation in urban physical education. *Journal of Teaching in Physical Education*, 27(2), 167-178.
- McCune, S. K., Guglielmino, L. M., & Garcia, G. (1990). Adult self-direction in learning: A preliminary meta-analytic investigation of research using the Self-Directed Learning Readiness Scale. In H. B. Long & Associates (Eds.), *Advances in self-directed learning research* (pp. 145-156). Norman, OK: Oklahoma Research Center for Continuing Professional and Higher Education.
- Moore, M. (1987). Distance learning in the United States: The near future. *Distance Education*, 8(1), 38-46.
- Nash, R. D. (2005). Course completion rates among distance learners: Identifying possible methods to improve retention. *Online Journal of Distance Learning Administration*, 8(4). Retrieved from <http://www.westga.edu/~distance/ojdl/winter84/nash84.htm>
- Nora, A. & Snyder, B. P. (2008). Technology and higher education: The impact of e-learning approaches on student academic achievement, perceptions, and persistence. *Journal of College Student Retention*, 10(1), 3-19.
- Pajares, F. (2002). Gender and perceived self-efficacy in self-regulated learning. *Theory Into Practice*, 4(2), 116-125.

- Pintrich, P. R., & DeGroot, E. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82, 33-40.
- Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1991). *A manual for the use of the Motivated Strategies For Learning Questionnaire*. Technical Report No. 91-B-004. The Regents of the University of Michigan.
- Stockdale, S. L., & Brockett, R. G. (2011). Development of the PRO-SDLS: A measure of self-direction in learning based on the Personal Responsibility Orientation Model. *Adult Education Quarterly*, 61(2), 161-180.
- Yen, C. J., & Liu, S. (2009). Learner autonomy as a predictor of course success and final grades in community college online courses. *Journal of Educational Computing Research*, 41(3), 347-367.
- Yukselturk, E., & Bulut, S. (2007). Predictors for student success in an online course. *Educational Technology & Society*, 10 (2), 71-83.
-

Naomi R. Boyer (nboyer@polk.edu) currently works as the Associate Vice-President, Strategic Initiatives at Polk State College with a focus on developing and implementing a strategic plan for distance learning, facilitating the K-12 partnerships and STEM program initiation, oversight of international initiatives, and recommending academic programs for the College.

Peter Usinger (pusinger@polk.edu) is Polk State College's Director of Institutional Research, Effectiveness and Planning. Coming from the Max Planck Institute for Human Development and Education in Berlin, he joined the Motivational Research Group of the University of Rochester in 1989, and Public/Private Ventures, a leading social policy think-tank, in 1993.

THE EARLY LEARNING CENTER AT JEFFERSON OPEN SCHOOL: (RE)DISCOVERING THE JOY OF LEARNING

Ana Mettler and Mary Korte

In this article the authors share some of the practices and conditions they implemented in their classroom (grades 1-3) in order to facilitate self-direction in learning. By the age of 6, when children come to first grade, they have already been exposed to factors supportive of or detrimental to forming the habits of self-directed learning. Current public education mandates also pose a challenge to maintaining a program designed to foster self-directed skills. It is the contention of the authors that nurturing the habits of self-direction in learning in the early grades requires the four following conditions: (a) an emotionally safe classroom community, (b) a rich and inspiring curriculum, (c) unstructured time and opportunities for choice, and (d) open-ended materials.

The classroom or Early Learning Center (ELC) presented in this article is a multi-age, multi-grade (grades 1-3) learning community of about 42 students. The authors have been team-teaching and co-creating this learning environment for the past 14 years. It is part of Jefferson County Open School (JCOS, 2012), a public school of choice, spanning K-12, described by Basile (2004) as *A Good Little School*. JCOS is located in Lakewood, a suburb of Denver, Colorado. Founded by parents and teachers in 1970, it established the following five goals for students:

- Rediscover the joy of learning
- Seek meaning in life
- Adapt to the world as it is
- Prepare for the world that might be
- Create the world as it ought to be

Its mission, crafted in the late 1990's, has been to provide "a dynamic environment that fosters the development of the unique potential in each individual by nurturing and challenging the whole person. There is an emphasis on self-direction, learning through experience, shared responsibility, and the development of life-long skills." (JCOS, Mission Statement, p. 1). Posner (2009), a former advisor at JCOS,

features the school in his book, *Lives of Passion, School of Hope*, and describes it as “a real educational community that inspires and supports life-long learning” (p. 1). The entire secondary program of JCOS was conceived as a “walkabout” experience, inspired by the work of Gibbons (2002). After completing the required passages (self-directed units of study as described in *The Self-Directed Learning Handbook*) students graduate proudly with transcripts written by themselves.

Factors Impacting Self-Directed Learning Habits That Are Outside of the School’s Influence

It is important to note that although it is the mission of JCOS to support students in forming and strengthening the habits of self-directed learning there are factors detrimental to self-directed learning that are beyond the control of this learning community.

For example, children are increasingly experiencing large amounts of screen time. Between being busy with computers, video games, hand-held electronic devices, DVD’s, and television shows, children spend less and less time engaged in self-directed play. In *Play = Learning*, Singer, Michnick Golinkoff and Hirsh-Pasek (2006) refer to a 2003 study by Anderson finding that “Children ages 0-6 spend more time on entertainment media than on reading, being read to, and playing outside combined” (Singer, et al., 2006, p. 5). Winn (1987) notes the importance of “the opportunity imaginative play affords children to become active users rather than passive recipients of experience” (p. 81). She further states that “children need to develop a capacity for self-direction in order to liberate themselves from dependency. The television experience helps to perpetuate dependency” (p. 11). Besides spending an over-abundance of screen time, children’s lives outside of school are also scheduled to a large degree by adults. Between piano lessons, dance lessons, organized sports, and other activities, many children have very few hours of time for free play. The authors of *Play = Learning* emphasize that “Play and unscheduled downtime are central to our emotional well-being throughout our lives” (Singer, et al., 2006, p. 8).

Another factor that impacts the school’s ability to nurture the habits of self-directed learning is the reality of being a public school: the Open School is subject to the same testing mandates as any other public school. As a consequence of the NCLB legislation, standardized testing has become virtually the sole measure of student achievement and teacher accountability. In *The Death and Life of the Great American School System*, Ravitch (2010) looks at numerous studies and discusses the impact of testing on students. Like many educators, she is concerned that “the overemphasis on test scores to the exclusion of other important goals of education may actually undermine the love of learning and the desire to acquire knowledge, both necessary ingredients of intrinsic motivation” (p. 229).

Although experiencing an entirely different curriculum and educational belief-system, JCOS students are required to perform on standardized tests if the school is to remain open. During the 2010-2011 school year, JCOS was designated a turn-around school by the state and school district in spite of the documented success of its

graduates as outlined by Posner's (2009) book. Given a maximum of five years to change student outcomes on standardized testing, the school had no choice but to respond to the mandate. It is a struggle to make time for children to engage in learning that is relevant to them and allows them to process their learning through self-directed play while simultaneously preparing students for high stakes tests. Current policies in public education driven by standardized testing make it increasingly difficult to offer a learning environment that engages children in self-directed learning.

Self-Directed Learning in the Elementary Grades

As self-directed learning is a central mission of the Open School, the faculty has over the years had many philosophical conversations about the definition and possible manifestations of self-direction in learning. A K-12 self-directedness continuum was created in order to guide students and advisors in evaluating/self-evaluating the degree of self-directed learning a student displays. More recently some of the elementary advisors (teachers at JCOS are commonly referred to as *advisors*) have resumed the conversation, trying to be more specific about what self-directed learning looks like in the beginning grades and what can be done to support it. The exploration began with Knowles' (1975) classic definition:

In its broadest meaning, "self-directed learning" describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. (p. 18)

This definition was discussed and explored in the context of directly observing young students. In this dialogue between theory and observation, the following criteria emerged to describe behaviors of a young self-directed learner and conditions needed to support self-directed learning in the classroom. Self-directed learning in 6-9 year old students entails qualities such as displaying enthusiasm, being motivated and curious with a sense of wonder, taking initiative, seeking help from others when needed, persevering, learning from mistakes, setting goals and self-evaluating (not necessarily explicit), working together with others, taking risks, and finding empowerment in the process. A learning environment conducive to self-directed learning will have to provide the following four conditions: (a) an emotionally safe classroom community, (b) a rich and inspiring curriculum, (c) unstructured time and opportunities for choice, and (d) open-ended materials.

A Supportive, Safe Classroom Community

A child's capacity to engage in the risk-taking necessary for becoming a self-directed learner will only take place in a supportive and safe learning environment. The ELC classroom supports this willingness to take risks and to learn from failures by first helping each child feel acknowledged as an individual and as an integral part

of the classroom community. Children are greeted individually in the morning when they walk through the door. A handshake or gentle hug reminds the children that they have come to a place where they will be accepted and encouraged to grow. The walls of the classroom are decorated with the art and work of the students themselves. Each student creates a self-portrait in the beginning of the year, which becomes part of a year-long display in the room. A collaborative art project, designed as a community building activity tied into the year's theme, becomes the centerpiece of the main classroom bulletin board. For example, this past year a colorful bird was assembled from feathers individually drawn by each student. The story that initiated this project was a Native American tale about a crow that sacrificed her rainbow-colored feathers in order to save all of the other animals. The image of the bird was accompanied by a quote from the story: "Fly free, fly free, in the sky so blue; when you do a good deed, it will come back to you."

The classroom is set up in a way that makes it obvious that the students have ownership over it. Materials and supplies are all easily accessible to the students who themselves are responsible for keeping them organized and clean. Arts and crafts materials, staplers, paper, glue, tape, scissors, pencils, crayons, and so forth are all freely available and do not need adult permission for use.

Many rituals and activities have been established to create a harmonious classroom community. On several occasions throughout the year the students gather in a big circle around the community pole – a pole with many colorful ribbons on which every child's name is attached. Around this community pole new students are welcomed and graduating students are celebrated. The norms of the community are set and confirmed around it, reminding everyone that this classroom values kindness, learning, joy, and peace (For a more complete description, see Mettler & Korte, 2011).

Since this is a multi-grade classroom students spend three, sometimes four years with their advisors. This allows for a deep and lasting personal relationship to develop between student and advisor. In fact, the relationship will extend beyond the time spent together in the ELC classroom for students who choose to continue their education at the Open School. In this small school community, the connection remains alive through planned and unplanned encounters throughout the student's school career. It is not uncommon for older students who consider becoming teachers themselves to spend time in the ELC classroom as part of a career exploration passage or to help younger students with reading as community service.

Through whole group, small group, and individual advising, students are learning to address and work through conflicts. The Southern Poverty Law Center (Teaching Tolerance Project, 1997) has many excellent suggestions for helping kids develop conflict resolution skills. Many of these ideas, such as a peace table and protocols for peace talks, have been successfully adopted into the ELC classroom.

Feeling confident and safe to express opinions, being able to collaborate, solve conflicts, and access materials independently are all instrumental factors in a student's development as a self-directed learner.

Rich and Inspiring Curriculum

A rich curriculum is another key component of fostering self-directed learning. Offering thematic units that integrate learning across subjects helps children make connections and leads them to want to learn more on their own. The Open School is fortunate to still have the freedom to create its own curriculum, especially in the realm of social studies and science. This freedom allows for tuning into the passions of the children and flowing with their interests as well as keeping the advisors' love for learning vibrantly alive. The annual curriculum of the ELC will typically be built around two major themes, one local, the other more global in nature.

Feathers, rocks, worms, and insects always intrigue young children and will thus always be honored and made part of the year's study of fauna or flora native or common to Colorado. It is crucial that students can observe their objects of study immediately, right outside their classroom, on the patio, the field, or the playground. As the Open School was remodeled recently, the architects recognized the importance of incorporating the outdoors into this learning environment. The remodeled ELC classroom has a glass garage door that can be opened with a simple push of a button and allows easy access to the outside.

Last year students were engaged in a study of birds through a wide range of experiences. Bird feeders were constructed during math time and hung in the ash tree and firs observable right from the classroom. Equipped with binoculars, children went on many excursions around the school and on fieldtrips to local parks and wetland areas to study different kinds of habitats and bird adaptations. Inside the classroom, time was spent digging into non-fiction texts and watching video clips. The Colorado Division of Wildlife made tubs chock-full of nests, skulls, feathers, eggs, and non-fiction literature available for exploration. In a series of science classes, students learned more about the unique adaptations birds have made in order to build nests, eat, reproduce, and survive. Students built nests, examined and drew bird skulls, and interpreted and understood the different kinds of beaks as tools akin to nutcrackers, straws, and tweezers. In math, children compared human vision with that of a hawk and learned about the immense strength of an eagle's grip by manipulating pressure gauges.

By the time the educational organization HawkQuest (a Colorado nonprofit organization that allows people to experience eagles, owls, falcons, and hawks at close range) gave their presentation of birds of prey during an all-elementary assembly, the students had developed an impressive schema of bird knowledge. Part of this presentation was a bald eagle who had been orphaned. This spoke particularly to one student who had been adopted from Ethiopia. She further investigated the story of this eagle, wrote about it, and presented her findings to the whole class. Over time, more and more students self-initiated bird studies and much self-directed non-fiction work emerged at school as well as at home. During the afternoon Choice Time two third graders spent hours on end creating a detailed map of bird habitats typical for Colorado. Two other students developed a fascination for owls. Together they wrote an owl book that incorporated many of the features used in non-fiction texts which they had studied during writing time.

The global part of the annual curriculum is introduced through the study of a Nobel Peace Prize Laureate. Each year a different peacemaker becomes the focus of the class. His or her life is presented to the young students in a creative and developmentally appropriate fashion – sometimes with specially made puppets and scenery, sometimes through paper figures moving across a biographical picture book projected onto the whiteboard. The often very violent conflict the peacemaker confronted is moderated to be child- and age-appropriate, and the emphasis lies on the peacemaker's non-violent response. Throughout the year, the culture and environment of the Nobel Peace Prize recipient is explored, compared and contrasted with our own customs and environment.

A visit to Denver by Rigoberta Menchu Tum (a Guatemalan Indian woman, social activist, and 1992 Nobel Peace Prize winner) prompted a study of her life's story and consequently of Guatemalan rainforests and volcanoes. One of the first graders was so intrigued by Rigoberta's story that she sat down to write a letter to her. The only help she requested was how to spell 'Rigoberta' and then she immediately got busy. Since Rigoberta Menchu was in town, it was possible to deliver this letter plus a collectively crafted, beautiful card from the whole class to her. The picture taken of Rigoberta's big smile when she received these letters filled the students with great pride and joy. Another year a study of the tree-planting campaign of Dr. Wangari Maathai (a Kenyan woman, environmentalist, and 1994 Nobel Peace Prize winner) paralleled a study of local trees. This past school year, the Himalayas became the students' passion when they learned about the Dalai Lama's homeland of Tibet. With the "14ers" of the Rocky Mountains in their own local backyard, the children developed a fascination for the gigantic Himalayan peaks. Snow-topped peaks appeared daily on little white boards and on big papers, until finally during an exploration at math time, a full-blown installation of the Himalayas in comparison to other world peaks was created in the hallway and around the class's entry door.

Young students particularly connect with the struggles and challenges the peacemakers had during their childhood. To hear that Gandhi was once lying and stealing as a young boy and that even the Dalai Lama was so naughty and wild that he was called "the holy terror" by the monks raising him, is encouraging for all of the students who feel troubled and imperfect themselves. Once in awhile the question arises if this subject – the lives and work of peacemakers – might be too heavy and complex given the young age of the children, even when the conflicts and circumstances are being drastically simplified. But watching the students play and process, for example, in the classroom's Tibetan/Guatemalan/Kenyan dress-up area, or hearing from parents how their young children, including some of the most struggling learners, tell them glowingly about the lives of the peacemakers and bearing witness to the connections these kids make between themselves and people such as the Dalai Lama and Wangari Maathai, the choice of this kind of curriculum is validated time and again. In fact, it is Gibbons (2002) who speaks of the importance of introducing students to "the concept of the hero's journey – the story of initiative, struggle, and transformation" (p. 70) - a necessity, according to him, for becoming a self-directed learner.

The gift of curricular freedom also makes it possible to remain open for the unexpected. Two years ago one of the students' grandmothers offered to share information about her recently published biography of Eleanor Roosevelt. All other plans were suspended and, fascinated by Eleanor Roosevelt's life, students as well as advisors became eager learners. "Every day do something that you are scared of," Eleanor Roosevelt was quoted as having said. It was her motto and strategy towards overcoming her painful shyness. Two second grade girls, both struggling tremendously with academics, were affected so deeply that they chose to seek out more information on their own. In the end they created an informational poster about Eleanor Roosevelt and shared it with the class. Through their work Eleanor Roosevelt's advice stayed present in the ELC far into the following school year.

Time and Choice

A third factor necessary for creating opportunities for self-directed learning is providing time and choice. Guglielmo, Long, and Hiemstra (2004) emphasize that self-directed learning is often not an "orderly, linear process" (p. 7). Duckworth (1996), in her seminal study of young children's learning process, simply states: "Learning is messy" (p. 62). A messy, non-linear process needs time. Duckworth continues to say: "Putting ideas in relation to each other is not a simple job. It *is* confusing; and that confusion *does* take time. All of us need time for our confusion if we are to build the breadth and depth to give significance to our knowledge" (1996, p. 82). Allowing time for children to work through their confusion is crucial.

Elementary students at JCOS still enjoy plenty of outside time for open-ended, self-directed play and gross motor movement, so critical to brain development. Every afternoon and Friday mornings the ELC offers a block of time called Choice Time. During Choice Time the students have full autonomy over the use of their time. They have an opportunity to process the day's learning through drama and dress-up, drawing, sculpting, building, reading, or experimenting with the interactive SMART Board. They can play with the dollhouse, re-visit learning stations from the day, examine nature objects through magnifying glasses, study the worms in the worm box, paint, sew, cut, glue and tape paper on end, watch others, daydream, relax, or make plans together for a later time.

It is fascinating to watch students during this self-directed time. Some choose the same materials every day. First grader Felix chose to build a marble-run almost every day since the beginning of the school year. He was constantly testing new versions and experimenting with the number of marbles that can simultaneously be sent down the run. Thereby he was exhibiting true characteristics of a self-directed learner: persevering in his exploration, evaluating his structures, wondering, coming up with new ideas, theories and plans, setting new goals, and being enthusiastic or being - as Csikszentmihalyi calls it - "in flow" (Pink, p. 114) the entire time. Ayalnesh, a 3rd grade student, was drawn regularly towards building with pattern blocks, re-visiting previous designs and modifying them, learning playfully about geometry, patterns, design, and architecture.

Others will try out a variety of materials or projects, spending different amounts of time on each. For awhile 3rd graders Grainne and Izzy made their own little

books and displays about topics the class was studying while Chloe and Rodrigo were re-writing their own version of *The Wimpy Kid* series. In a different corner of the classroom first graders Kaeyla, Phoenix, and Iliana were deepening their understanding of Tibetan culture through dramatic play in the “Tibetan house” area. The worm box was the choice of exploration for second-graders Isabelle and Abby, who delighted in holding and observing the worms, discovering hundreds of baby worms, feeling and smelling the rich soil created by the worm castings. Paper, tape, and scissors kept many students busy for weeks on end, inspiring each other and fine-tuning their projects. They fashioned miniature puppet theaters and performed plays, projected by the document camera onto the whiteboard for the whole class to enjoy. Giant paper dolls were crafted with long paper hair and a daily growing wardrobe. Handbags, wallets, and money were the vogue for awhile, improving the tape clasps, handles, and general design with each generation. First grader Quintry, needing and losing glasses regularly, began to design her own outrageously fashionable glasses.

This Choice Time – providing free time and full choice within it - is fertile ground for students to discover their innate passions, to find out who they are, to deepen their learning, and to be inspired by their peers. Pink (2009) refers to Csikszentmihalyi’s claim that “Left to their own devices ... children seek out flow with the inevitability of a natural law” (p.130).

Open-Ended Materials

Another essential factor for facilitating self-directed learning in the classroom is the availability of open-ended materials. The materials in the classroom described here are carefully selected to promote meaningful play experiences and give children the opportunity to engage with these open-ended materials. Children are encouraged to creatively use what is available to them. Their capacity for innovation and imagination seems endless. On any given day students can be observed combining materials in unanticipated ways to create something new. Architect Simon Nicholson refers to open-ended materials as *loose parts*. Louv (2005) quotes Nicholson’s theory: “In any environment, both the degree of inventiveness and creativity, and the possibility of discovery, are directly proportional to the number and kind of variables in it” (p. 86). “A ‘loose-parts’ toy...is open-ended; children may use it in many ways and combine it with other loose parts through imagination and creativity. A typical list of loose parts for a natural play area might include water, trees, flowers, and long grasses...” Louv expands (p. 86).

In the summer of 2011, the Smithsonian Institution in Washington, D.C., hosted Invention at Play (Smithsonian Museum, 2008-2011), an exhibit on inventors. This exhibit featured the games and play materials that had most fascinated the inventors as children. The inventors related how playing with these materials fostered the habits of mind necessary to become inventors in their adult lives. A sign at the entry of the exhibit confirmed that self-directed learning begins in childhood with play. It read as follows:

Through play children gain important creative thinking abilities, physical skills, and knowledge of tools and materials. And although tools and materials change over time, the habits of mind fostered by play have persisted in the minds of inventive adults throughout history. Today there is increasing concern about the influence of television, movies, and computers on the way youngsters play. How can we preserve active, hands-on experiences, which are key to invention, in the electronic and digital age? (n. p.)

Many of the materials available at the hands-on learning center associated with the exhibit are present in the ELC classroom.

- Several shelves full of well-crafted, big, wooden blocks of various sizes and shapes allow children to experiment with architecture, design, and physics. New ideas emerge constantly and peers continuously inspire each other. Students have used blocks to build structures such as the Potala Palace in Lhasa, castles, parking garages, road systems, temporary dollhouses, zoos, pyramids, skyscrapers, benches and tables, and mazes for the classroom bunny. Boys especially are almost daily engaged in the hands-on physics of testing ramps and trying to increase the speed and distance of the toy cars rolling down. The concept of structural stability becomes a tangible challenge in the effort of building as high a structure as possible. Since students have free access to all materials, they often include other available resources into their structures and ensuing play, such as a basket full of animals, the tub with counting bears, toy cars, paper signs, dress-up items, and other types of blocks such as Lincoln logs and architectural blocks. Building together provides students with the opportunity to learn from each other, to collaborate, to problem-solve together, and to verbally discuss ideas.
- The ELC classroom has endless supplies of scissors, paper, tape, glue, crayons, watercolors, and so forth. Children use these materials to direct their learning as they practice drawing, sculpture, Origami, writing projects of all kinds, and all of the creations described above.
- Clay is another open-ended material which presents children with never-ending opportunities of tactile explorations. Frank Wilson, professor of neurology at Stanford University School of Medicine, reminds us that “much of our learning comes from doing, from making, from feeling with our hands” (Louv, p.66). Individual students or small groups of students go through phases of particular themes. Sometimes the ambition is to figure out how to shape animals, other times it is monsters, habitats, flowers, people, spaceships, playgrounds, and the like. Sometimes it is particularly a student with academic struggles who will emerge as a gifted sculptor. Being able to teach others and proudly share their creations is a big boost to children’s self-esteem. As with the other materials mentioned, students delight in fine-tuning, altering, and perfecting their creations. Children give each other encouragement and feedback. Learning to

incorporate feedback from peers is another habit of mind that helps children on their journey of self-directed learning.

- Pattern blocks and other math manipulatives such as sets of plastic bears and glass beads, base ten blocks, scales, rulers and yardsticks, Unifix cubes, geo blocks, geoboards, Cuisenaire rods, tens and hundreds frames allow children to investigate essential mathematical concepts and draw conclusions about everything from the number system to symmetry. When children are allowed to use these materials during Choice Time they inevitably discover new and interesting ways to use them. Looking at the familiar with a different lens helps children understand that there are always new possibilities and different ways of using a resource.
- Sticks, rocks, sand, and other natural materials offer children opportunities for creative engagement. The classroom is equipped with a water table that can be filled with water, sand, rice, or soil. The possibilities of use are endless. Likewise, the easy access to the outdoors makes it possible for children to play with freshly fallen leaves, small and large rocks, grasses, feathers, and other things they find just outside the classroom. Stick teepees are built and fairy villages created. The art of Andy Goldsworthy (a contemporary British sculptor famous through his nature art) emerges spontaneously in child versions.
- Living in the age of technology with a community of parents who expect their children to become technologically literate, the ELC classroom uses computers, document camera, and the SMART Board. When engaging with technology, children are encouraged to use technology as a tool rather than as passive consumers. With the help of the SMART Board, children are able to research a subject they are interested in and design a presentation about it. Computers equally serve as a resource for finding information and printing out pictures for a particular project.

Conclusion

While there are many factors that contribute to self-directed learning in early childhood, self-initiated creativity and free exploration are crucial for developing the habits of mind which will allow students to engage in self-directed learning throughout life. A classroom that strives to facilitate self-directed learning must establish a supportive and safe environment, offer an inspiring curriculum, provide free time and choice, and make open-ended materials available.

The balancing act between staying true to the JCOS mission of fostering self-directed learning and the necessity of familiarizing students with the specific facts required in Colorado's standardized tests, continues to be a challenge. Changes and compromises had to be made. Faced with the extrinsic threat of losing their school, the older students of the JCOS community responded. They decided to forego their right to opt out of testing. Two years in a row 100% of the 10th grade students participated in taking the test. This participation rate contributed significantly to the school's

improved rating. By the end of the 2011/12 school year, the Jefferson County Open School remains open and fully accredited.

References

- Basile, C. (2004). *A good little school*. Albany, NY: State University of New York Press.
- Duckworth, E. (1996). *The having of wonderful ideas*. New York, NY: Teachers College Press.
- Gibbons, M. (2002). *The self-directed learning handbook*. San Francisco, CA: Jossey-Bass.
- Guglielmino, L., Long, H., & Hiemstra, R. (2004). Self-direction in learning in the United States. *International Journal of Self-Directed Learning*, 1 (1), 1-17. Retrieved from www.sdlglobal.com
- Jefferson County Open School. (2012). About JCOS. (Website). <http://www.jeffcoopen.org/>
- Knowles, M. S. (1975). *Self-directed learning: A guide for learners and teachers*. New York, NY: Association Press.
- Louv, R. (2005). *Last child in the woods: Saving our children from nature-deficit disorder*. Chapel Hill, NC: Algonquin Books.
- Mettler, A., & Korte, M. (2011, Summer). Many-colored ribbons: Creating community. *Silhouettes, Professional Journal for Educators of At-Risk Students*. Retrieved from <http://www.atriskeducation.net/silhouettes/>
- Pink, D. (2009). *DRiVE: The surprising truth about what motivates us*. New York, NY: Riverhead Books.
- Posner, R. (2009). *Lives of passion, school of hope*. Boulder, CO: Sentient Publications.
- Ravitch, D. (2010). *The death and life of the great American school system*. New York, NY: Basic Books.
- Singer, D., Michnick Golinkoff, R., & Hirsh-Pasek, K. (Eds.) (2006). *Play = Learning: How play motivates and enhances children's cognitive and social-emotional growth*. New York, NY: Oxford University Press.
- Smithsonian Museum. (2008 -Late Fall 2011). *Invention at play*. Retrieved from <http://www.si.edu/Exhibitions/Details/Invention-at-Play-633>
- Teaching Tolerance Project. (1997). *Starting small: teaching tolerance in preschool and the early grades*. Montgomery, AL: Southern Poverty Law Center.
- Winn, M. (1987). *The plug-in drug*. New York, NY: Penguin Group.

Ana B. Mettler (anacello@msn.com) is an advisor at Jefferson County Open School. Her professional interest is focused on progressive and developmentally-appropriate education. She published many articles about (American) educational matters in the German newspaper *Rheinischer Merkur* as well as a recent article in the e-journal *Silhouettes*. She was a presenter at Kinder Conference, Denver, 2006.

Mary C. Korte (mkorte@jeffco.k12.co.us) is an advisor at Jefferson County Open School. Her background is in Expeditionary Learning and Stanley British Primary Education. She co-authored an article in the educational e-journal *Silhouettes*. She was a presenter at Kinder Conference, Denver, 2006, and at a Regis University seminar for pedagogy students in 2012.

