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Preface

This issue touches on several important issues and trends in the field of self-directed learning today: the internet and SDL, instrumentation, further exploration of how leaders use self-directed learning in their leadership roles, and ways of incorporating self-directed learning into formal instructional settings.

As internet use increases exponentially, options for self-directed learning become more prevalent, more accessible, and more varied. In the first article in this issue, Kop and Fournier explore the options and actions of self-directed learners in the connectivist environment of a Massive Open Online Course (MOOC). They describe new dimensions of self-directed learning that emerged in their research, which was conducted under the auspices of the National Research Council of Canada.

Moving from the frontier of internet learning environments to the more familiar setting of organizations devoted to community service, Phares and Guglielmino report on an examination of the self-directed learning readiness of community leaders, describe the types of learning projects that contribute to the performance of their leadership roles, and document their belief that ongoing self-directed learning is essential if they are to fulfill their responsibilities well.

Two articles in this issue address instrumentation. Kirwan, Lounsbury, and Gibson explore the relationship of self-direction in learning and the Big Five and narrow personality traits in the Resource Associates Transition to College inventory (RATTC). Ponton, Carr, Schuette, and Confessore present an analysis of the usefulness of the Appraisal of Learner Autonomy (ALA), a measure of self-efficacy in autonomous learning, as a part of the Learner Autonomy Profile (LAP).

Finally, in a practice brief MacDonald and McLaughlin, two gifted professors, describe creative ways of incorporating self-directed learning into English classes in a college setting, focusing on creating integrated projects that require independent thought and effort as alternatives to traditional approaches to instruction and assessment.

Lucy Madsen Guglielmino, Editor

Huey B. Long, Editor Emeritus

A special note: The *IJSDL* will now be accepting articles written only using the 6th edition of the American Psychological Association's Publication Manual.

International Journal of Self-Directed Learning

CONTENTS

NEW DIMENSIONS TO SELF-DIRECTED LEARNING IN AN OPEN NETWORKED LEARNING ENVIRONMENT

Rita Kop and Hélène Fournier

Abstract

New technologies have changed the educational landscape. It is now possible for self-directed learners to participate informally in learning events on open online networks, such as in Massive Open Online Courses. Our research analyzed the agency and level of autonomy required by learners participating in a course of this nature. Using Bouchard's four-dimensional model of learner control, we found that there are new dimensions to self-directed learning in connectivist learning environments. The research also brought to light new challenges and opportunities for self-directed learners who might not be able to call on trusted educators for support in their learning endeavors, but rely on the aggregation of information and informal communication and collaboration available through social media to advance their learning.

The proliferation of Information and Communications Technology (ICT) in recent years has changed the educational landscape. It has added to the complexity of our lives and aided in the creation of a plethora of new opportunities for learning. Faculty members are changing their practice and are experimenting with open educational resources and cloud computing, such as Massive Open Online Courses (MOOC), acknowledging that informal and self-directed learning now form part of our everyday existence. The technology, however, raises new challenges and opportunities for the self-directed learner, who might no longer be able to call on a trusted educator for support in his or her learning endeavor.

The emerging technologies that are currently shaping the Internet and the Web provide us with access to information and the ability to work and learn with others in a creative global collaboration outside the educational structures that have been the norm for centuries (Downes, 2010; Fournier & Kop, 2010). New structures and environments are in place where people can learn autonomously, but one might question if people will be able to do so effectively (Kop & Bouchard, 2011). Two areas of research are foundational to examining learning in open networked environments: learner autonomy and connectivism.

Learner Autonomy

Several researchers in the field of self-directed learning see learner autonomy as an important component of self-directed learning (Ponton, 2005; Bouchard, 2009; Boucouvalas, 2009). Bouchard (2009) and Boucouvalas (2009) both highlighted the learning environment, learning context, and the connections people make during their learning as determining factors in the success of self-directed learning journeys. These elements are aligned with Bandura's (2002) ideas on "human agency" (p. 269). He accentuated three types of agency: *personal agency* exercised individually, *proxy agency,* in which people secure desired outcomes by influencing others to act on their behalf; and *collective agency,* in which people act in concert to shape their future in whatever cultural context they inhabit. Bandura emphasized the importance of all three agencies and their interrelatedness in the complex world in which we now live.

Tough (1979) and Grow (1991) noted that learners move through different phases of self-direction, and Bouchard (2009) identified particular factors that influence autonomous learning strategies. He clustered them in four dimensions, one dealing with psychological issues, one with pedagogical issues, and two with environmental issues:

1. The first dimension, which he called the *conative* one, relates to psychological issues such as drive, motivation, initiative and confidence. In this dimension Bouchard also highlighted aspects of context and transitions, how these influence people's urges to take up learning, and the social networks that people are involved in and which act as affective support and resources. He noted that their past learning experiences might also influence autonomous learning strategies.
2. The *algorithmic* dimension relates to pedagogical issues, for instance the sequencing, pacing and goal setting in learning, the evaluation of progress, and final evaluation and preparation for validation. These are clearly tasks that in the past were carried out by the educator; in an autonomous learning environment, they become issues that learners themselves have to resolve.

Bouchard (2009) also saw two environmental clusters of factors that would influence learning strategies:

3. The dimension that Bouchard called the *semiotics* of learning is related to the delivery model of resources. This model has drastically changed in recent years and moved from the use of resources such as books and paper to electronic texts and multimedia, which might be stored in searchable databases that could be linked through hyperlinks. It could also include contributions in blogs, wikis, and synchronous and asynchronous communication. Information is obtained through social networks and learners will need to be able to evaluate and navigate this new information landscape.
4. The importance of aspects of e*conomy* was recognized as a fourth category: the perceived and actual value of the learning, the choice to learn for personal gain such as for future employment, and the possible cost of other study options.

While Bouchard's dimensions provide an important basis for exploration of learner autonomy, examining self-directed learning in an open networked learning environment also requires awareness of the challenges of *connectivism*.

Connectivist Learning in an Online Environment

A current example of self-directed learning promoted by Downes (2010) and Siemens (2008) is based on *connectivism*. They posit that being a member of an online network, communicating with others and filtering information and ideas that others provide will lead to knowledge creation and learning advancement. Connectivism advocates the active engagement of people with resources in communication with others, rather than the transfer of knowledge from educator to learner. Moreover, they promote a learning organization whereby there is not a body of knowledge to be transferred from educator to learner, and where learning does not take place in a single environment. Instead, knowledge is distributed across the Web and people's engagement with it constitutes learning. This model recognizes that the increasing influence of the Web and the global online connectedness of people will have implications for people's learning (Siemens, 2008; Fournier & Kop, 2010). The role of the educator is predicted to change (Downes, 2010) as learners have the option to move from a learning environment controlled by the educator and the institution to an environment where they find their own information and direct their own learning as they develop ideas and connect with (knowledgeable) others on networks away from the formal setting.

A connectivist approach and learning environment might pose new challenges for learners who direct their own learning; but it is likely that such an approach will also provide new opportunities to enhance their learning experiences. The current literature related to Web development highlights four challenges and pertinent developments to connectivist learning:

1. The *nature of the network* as a place to learn as opposed to a group in an educational institution and the levels of *presence* in each has been highlighted as an important factor in the willingness of participants to actively engage online (Dron & Anderson, 2007). Power relations in online networks and how these might influence the information and resources that self-directed learners will be able to access are other important issues. The structures of the Web are preventing it from developing into a network where equality is the norm, rather than the exception (Barabasi, 2003; Boyd, 2010b). In addition, the increasing influence of commerce on the Web might negatively influence the potential of the social Web for learning and education (Friesen, 2010, Lanier, 2010)

2. Some *literacies* have been identified that are critical for learners to be able to effectively direct their own learning in an open online networked environment. Apart from reading and writing, these include information and media literacy and the ability to critically analyze resources and information in order to understand the new semantics of the Web. Creative abilities and a flexible mindset in an environment that is characterized by change and complexity

have also been highlighted as important (Downes, 2009; Partnership 21st Century Skills, 2009; Sahlberg, 2009).

3. *Cloud computing* and the emergence of Web2.0 and social media have altered the dynamics of the Web. Moving away from a linear process of printed text, they increasingly involve the production of digital artefacts and the storage of these away from local computing devices, as well as the use of a variety of communication, collaboration and sharing tools that people find and use on the Web. These tools have created a new demand on human agency in the form of creativity, innovation and self-expression (Sahlberg, 2009; Fisher, Giaccardi, Eden, Sugimoto, & Ye, 2005).

4. The *Semantic Web and learning analytics* are the latest developments of the Web and can be used for the visualization of large amounts of data, creating a need for learners to be able to understand and critically analyze graphs and figures. The analysis of this "Big Data" can also be used to improve learning in new ways, and some observers envisage the use of analytics in learning recommender systems to aid learners in their information aggregation strategies (Rogers, McEwen, & Pond, 2010; Fournier, Kop, & Sitlia, 2011).

In order to develop empowering learning environments that foster active learning, designers and developers of such environments first need to understand the factors that influence people's attitudes, intentions and behaviours. They must also understand the prerequisites for people to thrive in such environments in order to create favourable components and conditions. This paper will investigate whether the four dimensions that Bouchard (2009) highlighted in his research match the experiences and perceptions of learners in a Massive Open Online Course that was held in the autumn of 2010 and if additional dimensions might be justified by examining their connectivist learning in an online environment.

The Research on Self-Directed Learning in a Massive Open Online Course (MOOC)

Recognizing the challenges posed by innovations in Web-based learning, learning technologists have started developing structures to support autonomous learners in the negotiation of this new and ever-changing learning landscape. Carroll, Kop, and Woodward (2008) see the creation of a place where people feel comfortable, trusted, and valued as the crux to engaging learners in an online environment. The task would be to move towards a space that aggregates content and imagine it as a community, a place where dialogue happens, where people feel comfortable, and interactions and content can be accessed and engaged with easily: a place where the personal meets the social with the specific purpose of the development of ideas and of learning.

The National Research Council of Canada is in the process of designing and developing a place that might support autonomous learners online. It is a Personal Learning Environment (PLE) called Plearn. The development consists of two strands: The creation of a place, encompassing technological components, where people can

manage their own learning, and the creation of a pedagogical platform that would support learners in this endeavor. The research to achieve the design and development of such a PLE consisted of several strands, but this paper will report only on some components of the educational research: issues relevant to self-directed learning on a MOOC.

The Setting

The Massive Open Online Course (MOOC) researched was organized by the National Research Council of Canada as part of their research in Personal Learning Environments in cooperation with Athabasca University and the University of Prince Edwards Island. The subject under scrutiny was Personal Learning Environments, Networks and Knowledge (PLENK). It was a free course that lasted 10 weeks with a total of 1641 participants registered. PLENK2010 did not consist of a body of content and was not conducted in a single place or environment. It was distributed across the Web.

Two of the facilitators of the course were the founders of *connectivism,* in approach to learning that has been earmarked by some as the learning theory for the 21st century. Siemens and Downes (2009) have highlighted on numerous occasions the importance of human agency and the necessity of active participation in *connectivist learning.* They stress the importance of four types of activity for successful learning: *(a) aggregation of information, (b) remixing and reflecting on the resources and relating them to what people already know, (c) repurposing:* creating something of their own, and (d*) sharing their work and activities with others.*

The central resource in the course was *The Daily*, a newsletter that participants could subscribe to if they wished, which displayed the aggregated resources and artifacts produced by participants in the course. In addition, the Moodle Learning Management System with wiki was used to hold discussions and to display course resources and the schedule for speakers of twice weekly Elluminate sessions. Throughout the course Twitter and participants' and facilitators' blogs developed around the course subject, and Facebook Groups, Second Life, and other social network environments were developed by participants.

Learner support was provided by four facilitators in the form of videos, slideshows, and discussion posts in addition to blog posts, feedback to blogs, and Moodle discussion posts. Once a week Elluminate was used by facilitators for a synchronous discussion and chat session on that week's subject.

Research Methodology

Research in the intricacies of learning taking place on online networks is one of the axes of the research into the design and development of a PLE. If people are encouraged to move away from the institution for their learning, it is important to find out the relevance to the learning experience of the informal (online) networks in which they find their information and where they might develop. A network in the context of this paper would be an open online space where people meet, as nodes on networks, while communicating with others and while using blogs, wikis, audio-visuals, and other information streams and resources. De Laat (2006) highlighted the complexity of

researching networked learning and emphasized as key problems the issues of human agency and the multitude of issues involved, such as the dynamics of the network, power-relations on the network, and the amount of content generated. Effective analysis would require a multi-method approach and would involve new ethics and privacy issues.

New ethics and privacy issues in networked environments. Every researcher has to consider the ethical implications of the chosen methods of obtaining the data for a study and the use made of it. Sometimes obtaining data is a matter of accessing statistics or documents. When human subjects are involved in the research, careful consideration of the level of informed consent by participants is also required. Miller and Bell (2002) argued that gaining informed consent is problematic if it is not clear what the participant is consenting to and where "participation begins and ends" (p. 53). Several ethical issues were raised in the literature, of which misuse of data and privacy issues were the most important. Van Wel and Royakkers (2004) and Boyd (2010a) caution that data could pose a threat to subjects when misused, or used for different purposes than what it was supplied for. Researchers should at least anonymise data in order to respect privacy issues (Van Wel & Royakkers, 2004; Rogers et al., 2010; Boyd, 2010a). It has also been suggested by network researchers that people should have the choice to opt in or opt out of the use of their data. If someone is not aware that the data is being collected or how it will be used, he/she has no real opportunity to consent or withhold consent for its collection and use. This *invisible* data gathering is common on the Web (Van Wel & Royakkers, 2004) and highlights some new decisions related to ethics that researchers will have to make. We feel that researchers have a responsibility to carefully consider the context of their research, and also the process that takes place between observing, collecting and analyzing "Big Data"; data that is left by traces of activities that might not at all be related to the visible participation of learners.

In this study "Big Data" was captured out on open networks. The research team set out the boundaries of the research on the consent form that participants were asked to read at the start of the course. They were informed that data collection would include learning-related activities in the course environment and also learning activities that happened outside the course, but where the course tag #PLENK2010 was being used.

Data on PLENK2010 was collected according to these principles: using quantitative as well as qualitative measures, asking for informed consent, and using the #PLENK2010 tag to identify course-related data outside the course environment that learners would consent to include in the research.

Quantitative data collection. Three surveys were carried out near the end of the course and after it had finished in order to capture and explore learning experiences during the course: including the End Survey (N = 63); an Active Producers Survey (N = 32), that was filled out by people after an invitation was posted in the course blog for people who had produced more than two digital artifacts; and a Lurkers Survey (N = 74) that was filled out after a similar call for people who had limited their participation in the course to producing less that 2 digital artifacts and whose behavior was characterized in a consuming rather than a participating nature.

The Moodle data mining functionality was used to gather participant details, their level of use and access of resources, information on course activities, and discussions taking place in the course forums.

Qualitative data collection. In addition, qualitative methods in the form of virtual ethnography were used. An ethnographer was working on the course, collecting qualitative data through observation of activities and engagement. She also interviewed and surveyed a number of participants during the final week and held a focus group with 'silent participants' (lurkers) after the course to gain a deeper understanding of particular issues related to the active participation of learners. The researchers were interested in the processes taking place and the perspectives and understandings of the people in the setting; what Hammersley et al. (2001) describe as the "details, context, emotion and the webs of social relationships that join persons to one another" (p. 55). Hine (2005) highlighted that on the Web the technology itself and the artifacts it produces should be taken into consideration in the online ethnography, as these are part of the research setting and might influence the human interactions researched. As vast amounts of discursive data were generated in this form of networked learning in an open environment, computational tools such as Nvivo were used for analyses and interpretation of the qualitative research data. It was fairly easy to capture vast amounts of qualitative data through the aggregation tools such as the gRSShopper aggregator that was being used to feed into the newsletter (The Daily).

Data analysis. Learning analytics tools were used as a form of Social Network Analysis (SNA) to clarify activities and relationships between nodes on the PLENK network. SNA also provided information on the importance of "connectors" on other networks, and the most relevant tools to facilitate this. Secondary data analysis was carried out on the Moodle logs. The gRSShopper aggregator statistics functionality provided details on course-related use of blogs and micro-blogging tools such as Twitter. Some analytics and visualization tools, such as the Social Networks Adapting Pedagogical Practice (SNAPP) tool, were also used to deliver real-time social network visualizations of Moodle discussion forum activity; while the visualization tool NetDraw was used to create an ego network for understanding the role of a particular actor in a discussion.

Because of the volume of data generated by the 1641 participants and facilitators, quantitative analysis of blog posts and Twitter and Moodle participation was used, but the analysis of qualitative data was restricted to the Moodle environment and some blogs that were representative of all the blog posts produced by participants.

Findings

Participants' Ages and Locations

The professional background of participants on PLENK was mainly related to education, research, and design and development of learning opportunities and environments. Participants were teachers, researchers, managers, mentors, engineers,

facilitators, trainers, and university professors. Figure 1 shows PLENK participants' age, with a majority of participants in the course over 55 years old.
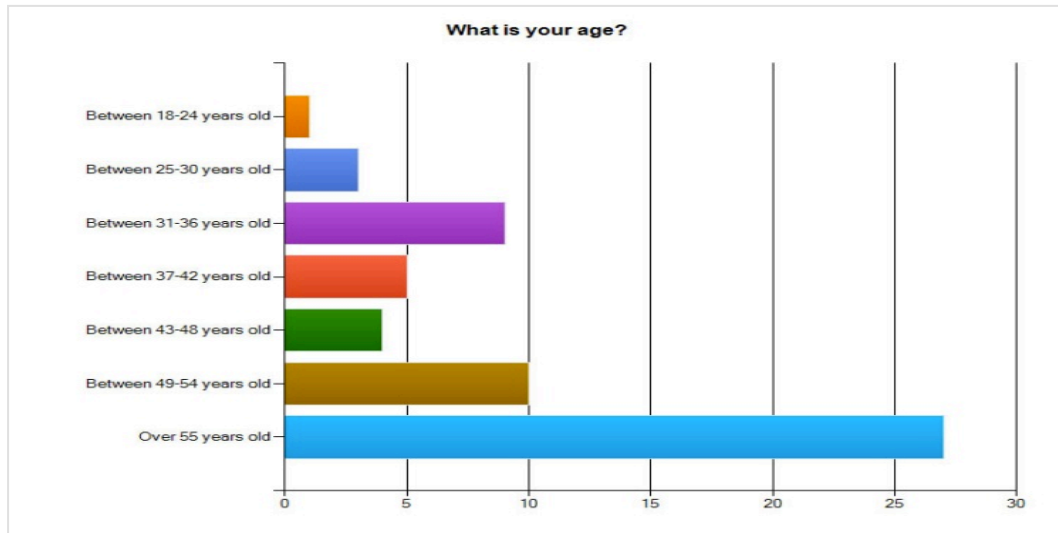
Figure 1. PLENK participants' ages.

Figure 2 shows a Google Map, instigated by one of the PLENK participants, representing participants' residence. A high number were from the USA, Canada, and Europe, although participants were from a total of 69 countries.

Figure 2. PLENK participants' locations.

Participation Levels

When the course started, 846 had registered; participation increased to 1641 by the end of the course, as shown in Figure 3. Twice-weekly meeting sessions were hosted on Elluminate; once a week with an invited speaker and once as a discussion session amongst the group and facilitator(s). Actual presence at these synchronous

sessions decreased over the weeks from 97 people in week two, when attendance was the highest, to 40 in the final week with a similar trend in accessing recordings for the sessions. Global participation and multiple time zones influenced who could be present and who accessed the recordings. A high number of blog posts were generated related to the course (900) and an even higher number of Twitter contributions (3104). The #PLENK2010 identifier facilitated the easy aggregation of blog posts, social bookmarking links, such as delicious, and Twitter messages produced by participants, which highlighted a wide number of resources and links back to participant's blogs and discussion forums; thus connecting different areas of the course. Although the number of course registrations was high, an examination of contributions across weeks (i.e., Moodle discussions, blogs, Twitter posts marked with #PLENK2010 course tag, and participation in live Elluminate sessions) suggested that about 40-60 individuals on average contributed actively to the course on a regular basis by producing blog posts and discussion posts, while the remaining participants' visible participation rate was much lower. Figure 4 shows the number of times people used particular tools, but does not show how these interactions took place.
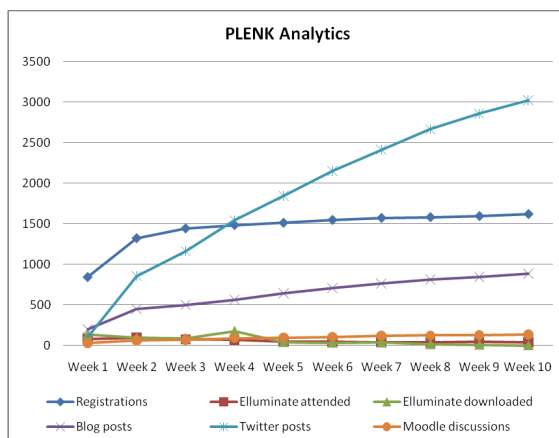
Figure 3. Plenk participation rates.
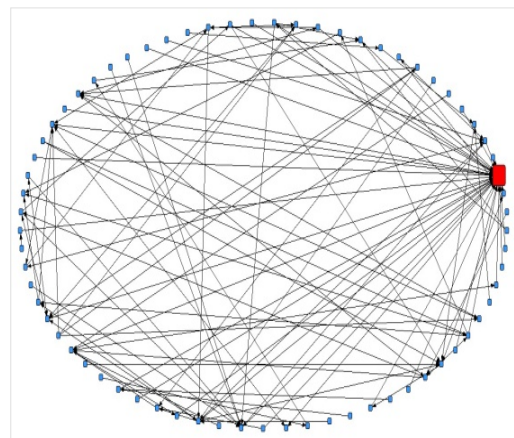
Figure 4. Connections between participants in a discussion.

Some additional visualizations provided us with some more revealing pictures in forum discussions and participation while using online tools. We have been experimenting with several analytics tools, such as the social network analysis tool SNAPP (Social Network Adapting Pedagogical Practice) used as a bookmarklet to the browser. The activation of the SNAPP tool resulted in network visualizations and the data generated was also exported to both VNA (Edgelist format) and GraphML formats. The creation of the network visualizations clarified the role that an actor might play in a particular discussion (Figures 5 & 6).
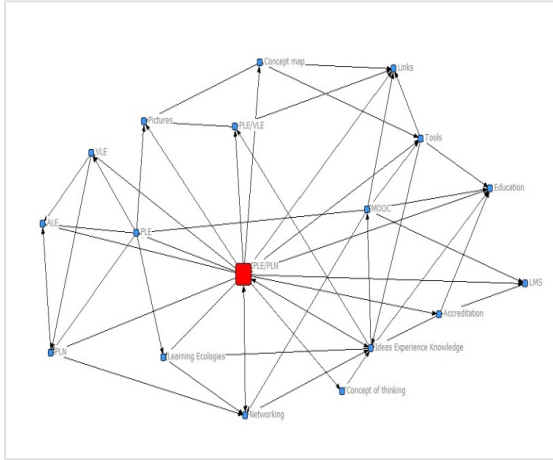
Figure 5. Relationship between topics in a discussion in week 1.
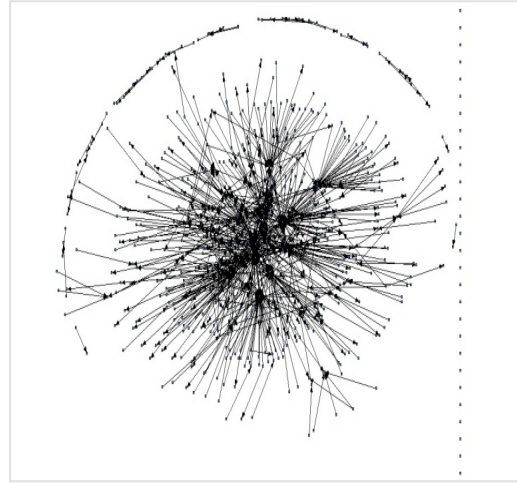
Figure 6. Learners as nodes on Twitter.

Agency and Active Participation

Some people with experience in learning in a MOOC were very involved in the course. One participant produced a Google Map (see Figure 1) that has received 22307 views and a blog that has been read in 69 countries. The technical tools motivated several people to produce course-related artifacts. Some examples: one learner produced a creative concept map (Figure 7). Another used Wordles to 'skim-read' papers and develop a visual impression of the content of a paper as shown in Figure 8.
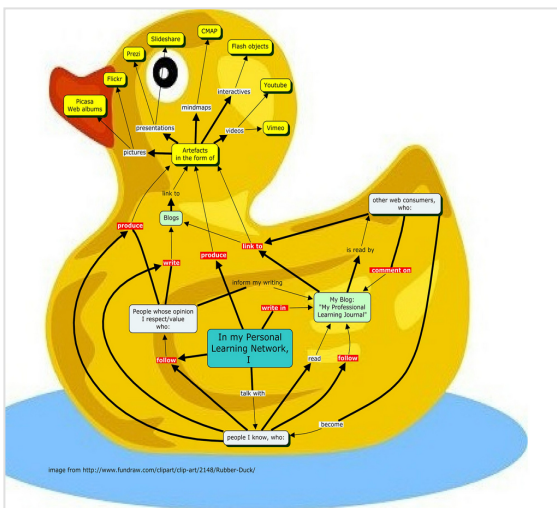
Figure 7. Example of learner concept map (http://bit.ly/hRBMSR).

Figure 8. Wordle of paper by Drexler on the networked student (http://bit.ly/g14Gov).

Not all participants contributed in a visibly active way. Many participants accessed resources, but were not engaged in producing blog posts, videos, or other digital artifacts. The basis of MOOCs has always been four activities:

1. Actively aggregating.
2. Actively relating these aggregated resources to earlier experiences and knowledge, what Downes (2009) calls remixing.
3. Actively repurposing; producing a digital artifact with this mix of thoughts.
4. Actively sharing.

It was clear that in this course only a small percentage of participants engaged in the production of digital artifacts. Between 40 and 60 were active producers; the other 1580 were not active in this way. This outcome was unexpected to the course organizers as they saw the production phase as vital to the learning in a networked environment. As some participants mentioned in the discussion, if nobody is an active producer, it limits the resources that all participants can use to develop their ideas, discussion, thinking, inspiration and learning. The research data showed some interesting reasons why the majority of participants were lurkers, rather than active producers. As Figure 9 shows, 54.5% of respondents to the lurkers survey indicated that they have always been self-directed learners and do not think they have to actively share and reply to discussion forums and blogs to learn. In addition, 50.9% highlighted that they are tactical lurkers who use particular strategies that are especially useful in their learning.
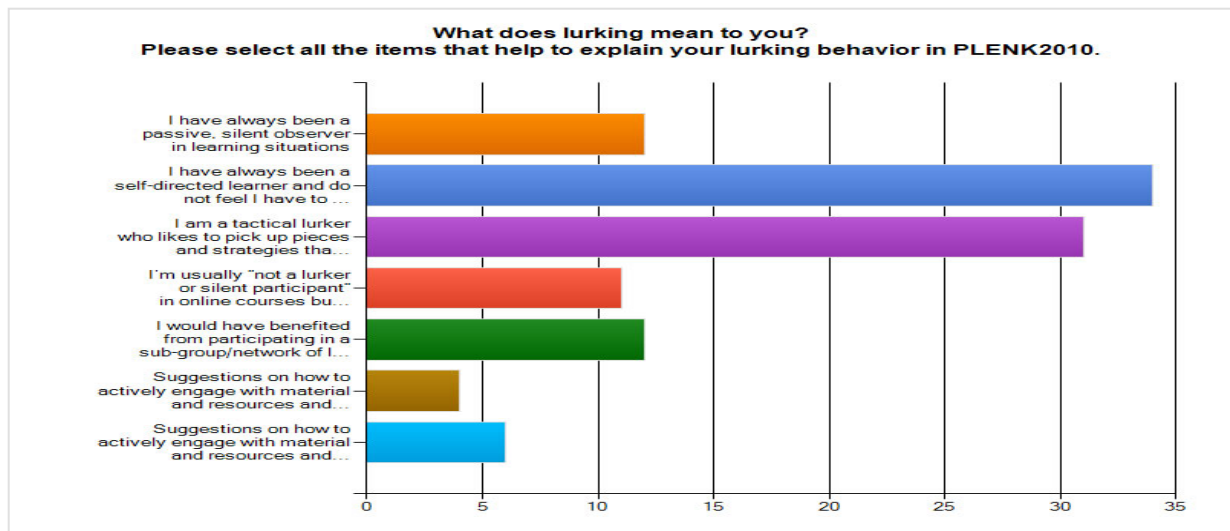
Figure 9. Explanations of lurking behavior.

Figure 10 indicates that the most important restricting factors to participation in PLENK were issues outside the course, related to people's everyday lives, such as time, job, family, and other commitments, for 80.6% of respondents to the lurkers survey. Other factors highlighted as important to lurkers were: being a listener and

reflector, so not being active was the natural thing to do (34.3%) and the perception that lurking is a legitimate learning strategy (29.9%). Factors related to the chaotic nature of the course and lack of confidence seemed to be less important, although novices indicated that it took them time to adjust to the unfamiliar course structure.
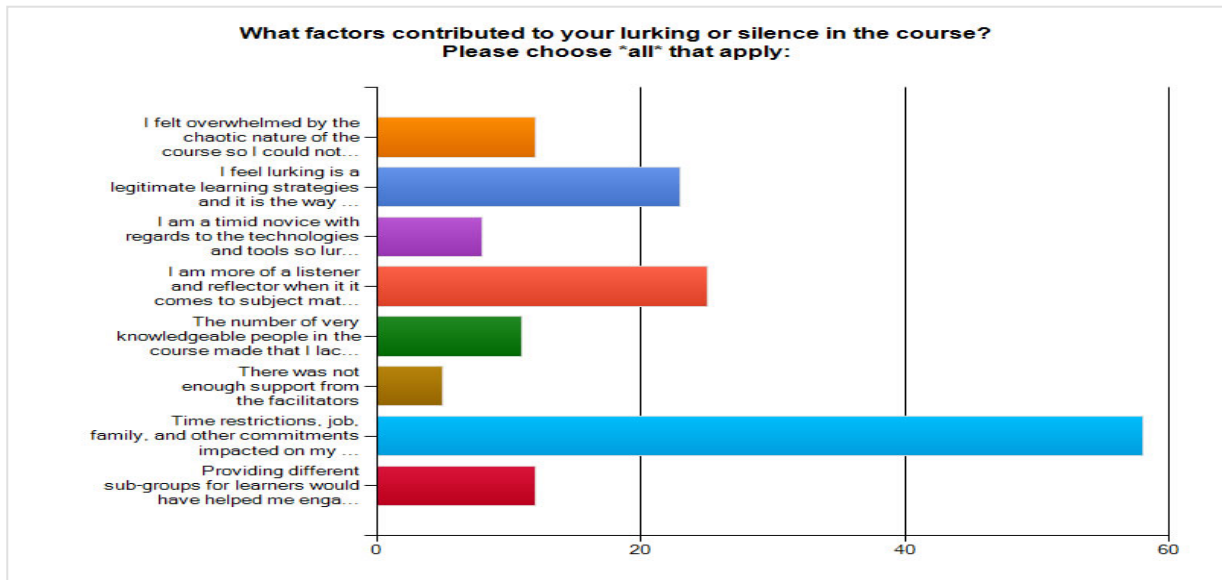
Figure 10. Contributing factors to lurking behavior.

For a variety of reasons (e.g. lack of confidence at the start of the course, the way tools and language were being used, trust and comfort levels, power relations in the course), lurkers preferred to read and view rather than join into a conversation. An understanding of the change process itself was also highlighted as important--the process of transformation and the steps required to achieve it. During the lurker focus group it was highlighted that novices might need more time for this change process to occur, especially in relation to building self-confidence and a sense of community in such a large course. These perceptions were expressed by a participant in the following blog post:

> I'm new to the world of PLNs. I certainly don't post as much as others but I'm learning and contributing as I go. Could I be considered a "lurker"? Perhaps, but I'm getting more and more involved as I go on and as my comfort level increases. . . . PLNs, despite best intentions can be quite cliquey (sp?) and as a newcomer, that can be quite intimidating. Will I get more comfortable sharing and experimenting? You bet! However, I need to do it in an environment where I feel supported and not judged for my perceived involvement or lack thereof.

Support by facilitators was highlighted in the literature as one way to make learners feel more at ease, but this was not confirmed in the end-of-course survey results. Responses to statements regarding the level of advice and support received

from facilitators and other participants in the course remain ambiguous with regard to support and feedback mechanisms. This ambiguity is highlighted in the higher percentages of neutral responses displayed in Figure 11.
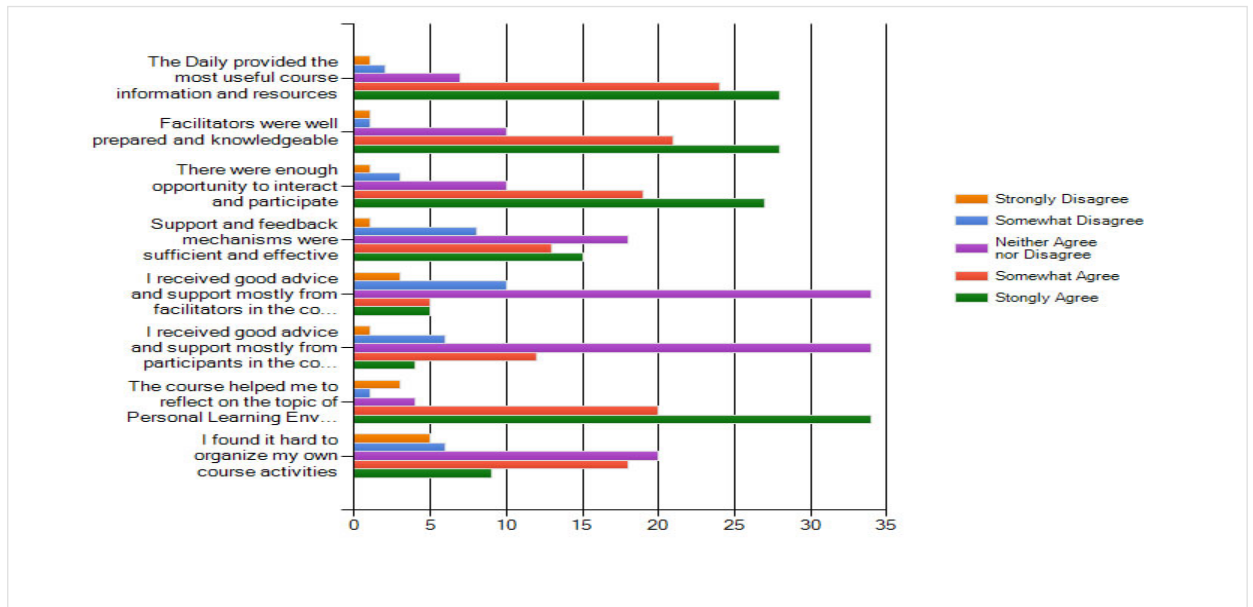
Figure 11. Agreement by lurkers with the level of support received during the course.

A majority of active participants (56.3%) indicated that "Writing and producing something" was "very important" in their learning and/or active participation in the course. These same participants also indicated that active production and interaction with others increased their positive learning outcomes; it helped them to reflect, involved them in a creative process, and they wanted to give something back to the group, as shown in Figure 12. However, the others with whom they interacted did not necessarily have to be facilitators.
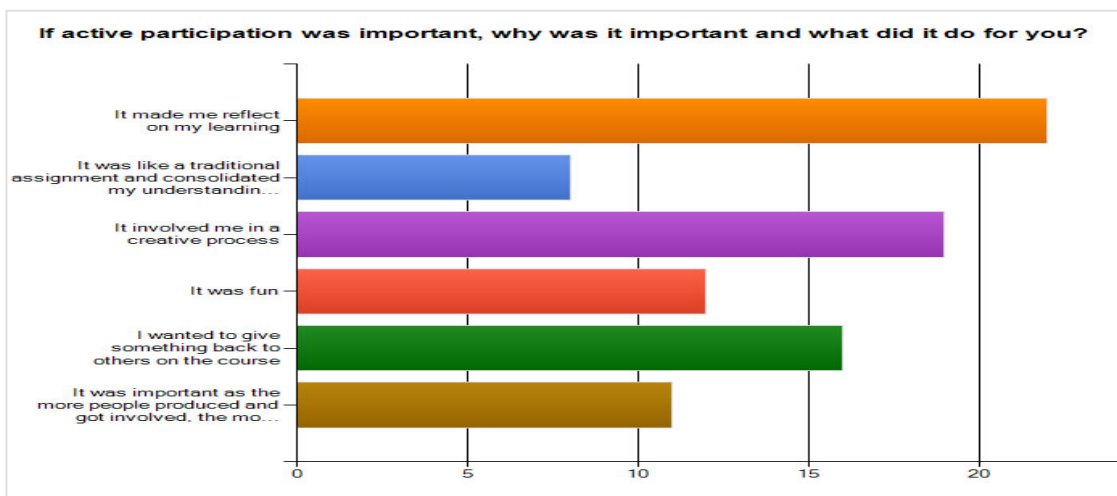
Figure 12. Why active participation was perceived to be important.

Motivational Issues Relevant to Networked Learning

The end-of-course survey highlighted factors that were important to participant motivation. What seemed to motivate participants most was finding particularly striking resources and information, getting involved in an online community, and the opportunity to learn something new. One participant highlighted, for instance, that learning alongside self-motivated peers was what motivated her as opposed to traditional training days where people were forced to be present. Learning how the new environment might improve their teaching and the learning of others was one of the motivational factors, while the topic of discussion was another. One participant highlighted the issues of self-evaluation, self-orientation, and self-regulation as important in relation to motivation in connectivist learning:

> Deciding to build a self-managed PLE must be a strongly (professionally or personally) motivated choice, and requires a high initial engagement and a constancy during the time, to be really useful. I put the "strong motivation" in the top of my list of personal requirements to build and use successfully a PLE/Ns. That signifies also having clear objectives, before starting a learning experience: what do I want to achieve? How long I can dedicate to do it? ... Other personal qualities: critical thinking, self-evaluation; self-orientation, self-regulation. I think the major challenges for people to feel comfortable learning in PLE/Ns are related to the "self" role, in learning activity.

The relevance of learning to everyday life was highlighted as important by several learners. One emphasized the importance of having choices at the start of the learning activity to increase motivation and the need for a negotiation process regarding content, skills, and process to make courses meaningful and relevant to everyday life. Affective issues were also highlighted as motivational factors. Some people found it particularly motivational to be learning about connectivist learning in the company of the originators of the connectivism theory, while other drew inspiration from learning in the company of self-motivated persons with a similar interest. They valued the opportunity to come in contact with, collaborate with, and meet people who would help to expand their personal network.

Critical Literacies for Learners Operating in an Open-Networked Learning Environment

Participants found different skills, abilities and competencies important to learn in a complex learning environment such as in the distributed PLENK2010. Some emphasized the particular mindset required, while others emphasized during the lurker focus group that novices might need more time to feel comfortable with this change process, especially in relation to building self-confidence and a sense of community in such a large course. One participant commented:

> People need to develop . . . a host of new critical literacies in order to learn and to work effectively with intelligent data, with people, and within the network.

I see the PLE as a way to process data, expand learning capacities of participants, and grow the network.

Participants highlighted a role for the educator in supporting this development: for instance, by introducing them to tools and resources and by teaching them how to critically evaluate information while using these new resources. Participants also emphasized responsibility for their own learning and their own lives in the new learning paradigm.

Discussion and Conclusions

The level of activity by participants in the course was particularly interesting. Although course organizers and promoters of connectivist learning posit that actively producing digital artifacts is an important stage in the networked learning process, most participants had a different view and participated in a different way. The large group of silent participants, "lurkers," who did not produce artifacts nor participate extensively in discussions, felt that they were actively engaged in the course through the other three activities: aggregating information, remixing of it and sharing it with others. The percentage of lurkers was similar to that of consumers versus producers on the Web as identified by other researchers and consequently should not be seen as too low (Nielsen, 2006). Our research showed that people were actively engaged in these other activities, although the sharing mostly took place outside the PLENK course structure, in their workplaces or at home and sometimes after the course had finished because people needed time to think and reflect on the resources, information, and communication made available during the course. Agency and activity are required in an autonomous learning environment, but it was clear that learners have their own ideas on what type of activities would suit them and their lifestyles, which might not necessarily be the same as those of the course organizers.

Some of the dimensions delineated by Bouchard (2009) clearly influenced the level of participation and types of activities learners engaged in. The *conative* factors, related to psychological factors such as drive, motivation, and confidence, were important. Participants who had already engaged in MOOCs before this course clearly participated more in the active production stage than novices, while they also motivated novices by sharing new tools relevant to educational practice. Novices also indicated their lack of confidence at participating on a worldwide stage where experts in the field of PLEs were sharing their research; they highlighted the power-relations as an inhibitor. On the other hand, these high-profile contributors were mentioned by others as a motivational factor to participation in the course. Opportunities to exploit the expertise in the MOOC amongst willing and active participants are therefore worth exploring in future courses.

Time management, goal setting, and time availability were mentioned as the most important *algorithmic* factors influencing people's participation. Learners found it hard to pace themselves and were, especially at the start, overwhelmed by the volume of resources and communication that needed to be managed, shaped, and organized, even though facilitators told participants that it would be impossible to read

and view everything that would come their way. People did make decisions about this at a later stage and devised coping strategies with the help of others.

It seemed that the *semiotic* dimension as highlighted by Bouchard (2009), the way in which people would access particular types of information and resources, was very important as it was different from what participants were used to in the past. Participants valued the new (to them) and different ways of aggregating information, by using RSS feeds and (#) tags through social networks and new tools. It was important for learners to learn about new tools and find out what these could mean for their own teaching practice. Participants helped each other to find tools that could aid them in supporting their learning and information aggregation.

The *economic* factors were also relevant to the course participants. Learners were intrinsically motivated to participate and placed a high value on the knowledge they developed on the course subject, Personal Learning Environments, Networks and Knowledge, and the new tools they could use to enhance their own teaching and work practice, as well as the extension of their personal networks.

Additional issues played a role in learners' participation and engagement, the major ones being the critical literacies required to learn actively in an open networked learning environment, such as a different mind-set and higher level of critical analysis of resources than is the case in a more organized classroom environment. People should clearly not have an aversion to risk and change to benefit most from learning in a MOOC. This ability to thrive in a changing environment will be influenced by all four of Bouchard's factors, and the research showed that there is an inter-relatedness of Bouchard's (2009) dimensions.

Based on analysis of the findings, it seems that to bring out the creative potential in people and to inspire them into the production of digital artifacts, dimensions of activity, engagement, and learning would have to be heightened and at their most favorable. Heightening the level of engagement and active participation is one of the main challenges of learning in an open networked environment and one in which educators could play a role. Educators and institutions might introduce more openness in the curriculum by using social media and global participation outside the boundaries of the institutional classroom to invigorate the learning experience of their students. Their participation as a critical knowledgeable other on the network could, at the same time, enhance the thinking process of all involved.

The combination of research methods used, and especially the use of analytics, added to the understanding of learning in a distributed, open networked environment. The analytics provided some clarity on the nature of the interactions between course participants, resources and networks; however, the ethnographic approach, using comment functions on blogs and questionnaires, was indispensable in arriving at an in-depth understanding of the learning process and the learning experience of participants. For instance, data regarding the learning experience of passive learners (lurkers) would have been impossible to obtain without these measures. This paper presents preliminary research findings and a more in-depth analysis is currently in progress. We expect that results of these analyses will provide us with indications of the most favorable conditions for facilitating learning for all participants in an online networked learning environment.

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SELF-DIRECTION IN LEARNING AND PERSONALITY: THE BIG FIVE AND NARROW PERSONALITY TRAITS IN RELATION TO LEARNER SELF-DIRECTION

Jeral R. Kirwan, John W. Lounsbury, and Lucy W. Gibson

Abstract

Based on a sample of 2102 college students, learner self-direction was found to be significantly related to four of the Big Five traits: Agreeableness, Conscientiousness, Emotional Stability, and Openness—as well as four narrow personality traits: Sense of Identity, Optimism, Tough-Mindedness, and Work Drive. Results of multiple regression analyses indicated that, after controlling for age, year in school, and sex, the Big Five traits accounted for 37% of the variance in learner self-direction, with other narrow traits accounting for an additional 15% variance. A combination of six Big Five and other narrow traits account for over 52% of the variance in learner self-direction. It was suggested that other personality traits may be influencing learner self-direction. Results are discussed in terms of theoretical and methodological implications.

This paper addresses the relationship between learner self-direction and other personality traits of college students when the traits represented by the Big Five model are differentiated from narrow personality traits. Our study draws on and extends the work of Lounsbury, Levy, Park, Gibson, and Smith (2009) who reported on the development of a personality measure of learner self-direction and construct validity. Before turning to their findings, we consider why this is an important topic.

Self-direction in learning is a major topic in the field of adult learning. There has been extensive coverage of the topic by theorists, researchers, and practitioners (Brockett & Hiemstra, 1991). Long (2007) has identified several themes and measurements of self-direction in learning including psychological factors. There have been several empirical measures created to look at different dimensions of self-direction in learning which address psychological factors such as the *Self-Directed Learning Readiness Scale (SDLRS)* (Guglielmino, 1978), and more recently the *Oddi Continuing Learning Inventory (OCLI)* (Oddi, 1986), and the *Personal Responsibility Orientation to Self-Direction in Learning Scale (PRO-SDLS)* (Stockdale, 2003). Research has shown that psychological variables are directly related to learner self-

directedness (Oliveira & Simões, 2006). However, there have been few studies that look at learner self-direction specifically in relation to personality traits.

In the rationale for their study, Lounsbury et al. (2009) made three important observations:

1. Personality traits may influence or provide the foundation for self-direction in learning-development processes.
2. When considered as a whole, much of the prior literature on the relationship between self-direction in learning and personality traits (Johnson, Sample, & Jones, 1988; Leitsch & Van Hove, 1998) is fragmented and piecemeal.
3. The Big Five model of personality represents an organizing scheme for understanding self-direction in learning-personality trait relations.

With regard to the latter point, the Big Five model of personality traits of Conscientiousness, Openness, Agreeableness, Extraversion, and Neuroticism (which we will refer to by its inverse—Emotional Stability) is widely accepted as a unified, parsimonious model of normal personality that has been validated in many different cultures and across several research settings (De Raad, 2000; Digman, 1997), with supporting studies based on many different demographic and personal characteristics of individuals (Costa & McCrae, 1994).

The results of the Lounsbury et al. (2009) study indicated that there was a significant relationship between the five-factor model of personality and learner self-direction. Their findings are important in that they further elucidate the nomological network for learner self-direction; in this case, that self-directed students displayed higher levels of Agreeableness, Conscientiousness, and Openness as well as lower levels of Neuroticism. These results also provide empirical support for self-direction in learning theorists who discuss the importance of such factors as creative achievements, new experience, and student participation in learning projects, intrinsic learning motivation, and self-concept (Hassan, 1982; Reynolds, 1986).

Drawing on recent developments in personality research, it is possible to extend the work of Lounsbury et al. (2009) to other personality traits that go beyond the Big Five model. Research in a number of areas has shown that validity can be enhanced above and beyond the Big Five traits by considering more narrow personality traits, which are defined as either subscales of the Big Five or as traits not encompassed by the Big Five model. For example, Lounsbury, Sundstrom, Gibson, and Loveland (2003) found that aggression and Work Drive added substantial variance to the prediction of academic performance of middle and high school students beyond the Big Five traits. Paunonen and Nicol (2001) found that narrow traits, such as self-discipline, straightforwardness, and modesty, added significant incremental variance beyond the Big Five when predicting 12 different criteria, including grade point average, blood donations, absenteeism, and traffic violations. Also, Paunonen and Ashton (2001) found that NEO Conscientiousness-related subscales of achievement, self-discipline, competence, and dutifulness as well as the Openness-related subscale of ideas added significantly to the prediction of collegiate GPA above and beyond the Jackson Personality Inventory Conscientiousness scale. Accordingly, the purpose of

the present study was to investigate whether other narrow personality traits are related to learner self-direction and to see if they contributed incremental validity to the prediction of learner self-direction above and beyond the Big Five. The narrow traits we examined were Sense of Identity, Optimism, Tough-Mindedness, and Work Drive. These traits are not part of current Big Five taxonomies and have been found to be related to important outcome criteria for college students including grades, satisfaction, and intention to withdraw from school (cf. Lounsbury, Sadaurgas, & Gibson, 2004; Lounsbury, Sadaurgas, Gibson, & Leong, 2005).

In the present study, our focus was on *learner self-direction* as an individual differences variable that can be represented on a continuum from low to high. We were not interested in representing learner self-direction as a categorical or nominal variable representing an identity status such as state of foreclosure, diffusion, moratorium, or achievement. With respect to Brockett and Hiemstra's (1991) two-dimension, self-direction in learning taxonomy, our learner self-direction construct corresponds to their learner self-direction construct. Consistent with prior conceptualizations of self-direction in learning (Brockett, 1983; Brockett & Hiemstra, 1991; Costa & Kalick, 2003), we conceptualized and measured learner self-direction as a personality construct reflecting an individual's preference to be in charge of their learning process; ability to conceptualize, plan, implement, and evaluate their academic experience; and disposition to be goal-oriented and to work independently or in group settings with little guidance.

We chose to study personality-learner self-direction relationships among college students for several reasons. The college experience is regarded as providing "many opportunities for students to develop, among other things, personal and professional identity" (Hamrick, Evans, & Schuh, 2002, p. 135). As Madison (1969) observed, college represents a unique and highly appropriate setting for studying Identity. Moreover, for those individuals who go to college directly from high school, the college experience occurs during a key developmental period for Identity development (Waterman, 1985, 1993), and it is regarded as playing a "critical role in identity formation" (Nakula, 2003, p. 9). We examined three research questions:

1. How much of the variance in learner self-direction can be accounted for jointly by the Big Five traits?
2. Are the narrow traits of Sense of Identity, Optimism, Tough-Mindedness, and Work Drive related to learner self-direction?
3. Do the narrow traits add incremental validity beyond the Big Five traits in predicting learner self-direction?

Method

Participants

A total of 2102 students enrolled in an introductory psychology course and a First-Year Studies program, at a large, public southeastern U. S. state university volunteered to participate in this study. Demographic characteristics of the sample

were: Gender--68% female (32% male); Year in School--79% freshmen, 15% sophomore, 3% junior, 3% senior; Age--3% under 18, 81% 18-19, 8% 20-21, 3% 22-25, 2% 26-30, and 3% over 30.

Procedure

After obtaining human subjects approval from the university's Institutional Review Board, participants were solicited to take a personality inventory on-line. Upon completion of the inventory, participants were provided a feedback report summarizing their personality characteristics and implications for a variety of areas related to being a student, including area of study, social life, managing stress, study habits, living situation, and using campus resources. Students in the introductory psychology course were offered extra credit for participation. All data were collected between September 1, 2004 and December 30, 2004.

Personality Measure

The personality measure used in this study was the Resource Associates' Transition to College inventory (RATTC). The RATTC is a normal personality inventory contextualized for late adolescents (Jaffe, 1998) and adults through high school and college. It measures the Big Five Traits of Agreeableness, Conscientiousness, Emotional Stability, Extraversion, and Openness as well as other "narrow" personality traits and learner self-direction. Scale development, norming, reliability, criterion-related validity, and construct validity information for the RATTC can be found in Lounsbury and Gibson (2010).

Findings from the above studies demonstrated that the RATTC constructs are internally consistent and display generally high convergence with common traits on other, widely used personality inventories, including the 16 PF, NEO-PI-R, and the Myers-Briggs Type Inventory (e.g., the RATTC measure of Extraversion correlates .77 with NEO-PI-R measure of Extraversion). Moreover, the Big Five measures of the RATTC significantly predict collegiate academic performance and withdrawal intention (Lounsbury, Sundstrom, Gibson, & Loveland, 2003; Ridgell & Lounsbury, 2004). An adult version of the RATTC has been found to be related to job performance, job satisfaction, and career satisfaction in a wide variety of occupations in many different business and industry settings (Lounsbury & Gibson, 2010).

Big Five and narrow traits assessed. The Big Five and narrow traits measured in this study, along with brief descriptions and their coefficient alphas, are listed below:

- Agreeableness: being agreeable, participative, helpful, cooperative, and inclined to interact with others harmoniously (coefficient alpha = .81)
- Conscientiousness: being conscientious, reliable, trustworthy, orderly, and rule-following (coefficient alpha = .78)
- Emotional Stability: overall level of adjustment and emotional resilience in the face of stress and pressure. We conceptualized this as the inverse of Neuroticism (coefficient alpha = .83)
- Extraversion: tendency to be sociable, outgoing, gregarious, warmhearted, expressive, and talkative (coefficient alpha = .84)

- Openness: receptivity and Openness to change, innovation, new experience, and learning (coefficient alpha = .76)
- Sense of Identity: knowing one's self and where one is headed in life, having a core set of beliefs and values that guide decisions and actions; and having a sense of purpose (coefficient alpha = .77)
- Optimism: having an optimistic, hopeful outlook concerning prospects, people, and the future, even in the face of difficulty and adversity as well as a tendency to minimize problems and persist in the face of setbacks (coefficient alpha = .83)
- Tough-Mindedness: appraising information and making decisions based on logic, facts, and data rather than feelings, sentiments, values, and intuition (coefficient alpha = .75)
- Work Drive: being hard-working, industrious, and inclined to put in long hours and much time and effort to reach goals and achieve at a high level (coefficient alpha = .85)

Learner self-direction items. The ten items comprising the learner self-direction subscale of the Resource Associates Transition to College (RATTC) inventory are listed below. Item responses were made on a five-point Likert scale: 1=Strongly Disagree; 2= Disagree; 3=Neutral/Undecided; 4=Agree;   5=Strongly Agree.

1. I regularly learn things on my own outside of class.
2. I am very good at finding out answers on my own for things that the teacher does not explain in class.
3. If there is something I don't understand in a class, I always find a way to learn it on my own.
4. I am good at finding the right resources to help me do well in school.
5. I view self-directed learning based on my own initiative as very important for success in school and in my future career.
6. I set my own goals for what I will learn.
7. I like to be in charge of what I learn and when I learn it.
8. If there is something I need to learn, I find a way to do so right away.
9. I am better at learning things on my own than most students.
10. I am very motivated to learn on my own without having to rely on other people.

For the present sample, the coefficient alpha for the above RATTC was .85.

Demographic Variables

The age and gender of students were assessed using categorical items. In addition, we used two nontraditional student subgroups provided by the Nontraditional Student Resource Guide (University of Oregon, 2005) to ask respondents whether either of these characteristics applied to them:

- Over the age of 25

- Returning to or starting college after a long break

Results

Descriptive statistics and intercorrelations among the study variables are displayed in Table 1. All of the Big Five personality traits are correlated significantly and positively with learner self-direction, except for Extraversion. Specifically, in descending order of magnitude, the correlations with learner self-direction were: Openness ($r = .43$, $p < .01$), Emotional Stability ($r = .20$, $p < .01$), Conscientiousness ($r = .20$, $p < .01$), Agreeableness ($r = .21$, $p < .01$), Extraversion ($r = .01$, $p > .01$), and the other narrow personality traits also correlated significantly with learner self-direction, with the largest magnitude correlation observed for Work Drive ($r = .49$, $p < .01$), followed by Optimism ($r = .31$, $p < .01$), Sense of Identity ($r = .30$, $p < .01$), and Tough-Mindedness ($r = -.07$, $p < .05$).

Table 1. *Descriptive Statistics and Intercorrelations for the Personality and Satisfaction Variables*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Agreeableness	---	.16	.28	.02	.19	.34	.33	-.31	.26	.21
(2) Conscientiousness		---	.13	.06	.05	.28	.23	-.11	.33	.20
(3) Emotional Stability			---	.24	.07	.46	.59	.14	.09	.20
(4) Extraversion				---	.01	.26	.34	-.15	-.01	.01
(5) Openness					---	.21	.18	-.16	.41	.43
(6) Sense of Identity						---	.67	-.22	.36	.30
(7) Optimism							---	-.16	.26	.31
(8) Tough-Mindedness								---	-.23	-.07
(9) Work Drive									---	.49
(10) SDL										---
Mean	3.74	3.38	3.17	3.54	3.52	3.96	4.01	2.32	3.18	3.29
Standard Deviation	.62	.50	.69	.66	.59	.62	.57	.65	.62	.59

Note: $n = 2102$; medial effect size = 25.5; range of effect size = -.07 to .49
Correlations > .09 or < -.09 are significant at the $p < .01$ level.
Correlations > .05 and < .09 or < -.05 and > -.09 are significant at the $p < .05$ level.

To evaluate research questions 1 and 3, we performed a series of regression analyses with learner self-direction serving as the criterion variable and three demographic variables which have been linked to Identity—age, sex, and year in school (which in the present study correlated .11 ($p < .01$), .14 ($p < .01$), and .05 ($p < .05$), respectively, with learner self-direction)—serving as control variables by entering them as a set on the first step of each regression analysis. In the first analysis, the Big Five traits were regressed on learner self-direction in stepwise fashion and all five significantly entering the equation, accounting for 37% of the variance in learner self-direction beyond the 3 demographic variables, as can be seen in the first regression result in Table 2.

Table 2. *Regression Analysis for Learner Self-Direction with Age, Year in School, and Gender Entered First Followed by the Big Five Traits Entered Stepwise*

Step	Variable(s)	Multiple R	R^2	R^2 Change
1	Age, year in school, and gender	.172**	.030**	.030**
2	Emotional Stability	.506**	.256**	.226**
3	Conscientiousness	.563**	.317**	.061**
4	Extraversion	.586**	.343**	.026**
5	Openness	.603**	.362**	.020**
6	Agreeableness	.608**	.370**	.007**

*Note: n = 2102 * p <.05   ** p <.01*

To answer the question of whether the four narrow traits contributed incremental variance in the prediction of learner self-direction beyond the Big Five, the following regression procedure was employed. The three demographic variables were entered as a set hierarchically on the first step, followed by the set of Big Five traits on the second step; the narrow traits were allowed to enter in stepwise fashion. As can be seen in the results in Table 3, the demographic and Big Five variables accounted for 37% of the variance, with Optimism adding an additional 14% of the variance ($p < .01$), and Work Drive contributing an additional 1.5% of the variance ($p < .01$) in learner self-direction. Sense of Identity and Tough-Mindedness did not account for any significant variance in learner self-direction.

Table 3. *Regression Analysis for Learner Self-Direction with Age, Year in School, And Gender Entered First, The Big Five Traits Entered Second as A Set, Followed by Narrow Traits Entered Stepwise*

Step	Variable(s)	Multiple R	R^2	R^2 Change
1	Age, year in school, and sex	.172**	.030**	.030**
2	Big five traits	.608**	.370**	.340**
3	Optimism	.717**	.514**	.144**
4	Work Drive	.727**	.529**	.015**

*Note: n = 2102 * p <.05   ** p <.01*

As can be seen in the third regression results in Table 4, when the Big Five and narrow traits were allowed to enter the regression in stepwise fashion after the demographic variables, Optimism entered first, contributing an additional 44% of the variance ($p < .01$); Work Drive entered next, adding 3% ($p < .01$), followed by Conscientiousness (R^2-change = 1.4%, $p < .01$), Emotional Stability (R^2-change = .008%, $p < .01$), and Tough-Mindedness (R^2-change = .005%, $p < .01$). These five personality traits jointly accounted for over 50% of the variance in learner self-direction beyond that accounted for by the demographic variables of age, year in school, and gender.

Table 4. *Stepwise Regression Analysis for Learner Self-Direction with Age, Year in School, and Gender Entered First; Then all Personality Traits Entered Stepwise*

Step	Variable(s)	Multiple R	R^2	R^2 Change
1	Age, Year in School, and Gender	.172**	.030**	.030**
2	Optimism	.689**	.474**	.444**
3	Work Drive	.711**	.506**	.032**
4	Conscientiousness	.721**	.519**	.014**
5	Emotional Stability	.727**	.527**	.008**
6	Tough-Mindedness	.730**	.532**	.005**

*Note: n = 2102 * p <.05   ** p <.01*

Discussion

The findings of this study provide support for Lounsbury et al.'s (2009) summary "…of the importance and richness of the self-directed learning construct and provide strong support for its role as a personality trait…" (p. 417). All of the Big Five traits correlated significantly with learner self-direction, except for Extraversion. The significant, positive relationships between learner self-direction and Emotional Stability are consistent with Lounsbury, et al.'s correlational findings of a negative relationship between Neuroticism and learner self-direction. Moreover, the results of the present study indicate that the Big Five traits jointly explained a substantial amount of variance in learner self-direction, which provides additional support for the robustness of the Big Five model (e.g., De Raad, 2000; McCrae & Costa, 1997, 2003).

It appears that additional variance in learner self-direction can also be accounted for by other narrow personality traits. The results of the second regression analysis indicate that the traits of Optimism and Work Drive added incremental variance beyond the Big Five in predicting learner self-direction. Moreover, the results of regression analysis indicate that the narrow traits of Optimism and Work Drive entered the regression equation to predict learner self-direction before any of the Big Five traits. At this stage of research development, we would not conclude that any one of the personality traits studied is more strongly related to learner self-direction than other traits, but the moderate magnitude of the Optimism--learner self-direction correlation is noteworthy and would be a prime candidate for replication and explication by future research. Consistent with recommendations in other research domains to use multidimensional composites (Paunonen & Nicol, 2001; Schneider, Hough, & Dunnette, 1996), comprised of both broad traits such as the Big Five and narrow personality measures, to maximize validity, we suggest that future research on the relationships between learner self-direction and other personality traits consider both the full set of Big Five traits as well as narrow traits of interest which need not be limited to the small number of narrow traits we considered.

The generalizability of other personality traits and learner self-direction across different domains of demographic and social role characteristics augurs well for future self-direction in learning theory development which seeks to establish generalized

construct relations involving personality traits, and it also provides food for thought concerning a crucial unresolved issue noted by Clancy and Dollinger (1993) and framed here as: What is the causal direction of other personality traits in relation to learner self-direction? That is, do other personality traits influence or contribute to learner self-direction, or does learner self-direction influence other personality traits, or is the relationship bi-directional? Attempts to resolve this issue should involve a longitudinal design, which was not utilized in either Lounsbury et al. (2009) or the present investigation, and may involve measurement of college student experiences and activities through which personality is manifested. As but one example, it may be that higher levels of Conscientiousness and Work Drive lead to more successful study habits and academic performance, which may, in turn, lead to higher levels of learner self-direction.

Nevertheless, there are several considerations that point toward a conceptual model emphasizing the primacy of personality traits and portraying personality traits as leading to learner self-direction. From a lifespan-developmental perspective (e.g., Berger, 2001; Erickson, 1980) identity issues emerge primarily in adolescence, whereas personality traits, including constructs corresponding to the Big Five, have been reliably studied for children as young as age 3 (van Lieshout & Haselager, 1993, 1994); thus, it is not unreasonable to consider other personality traits as preceding learner self-direction. Moreover, personality traits are typically regarded as being relatively invariant or consistent over time and across situations and environmental or situational characteristics (e.g., Pervin & John, 1997).

In view of the above, we suggest that if personality traits are relatively consistent for students across situations and over time, and if learner self-direction changes more across situations and over time, the most logical interpretation of why the personality trait--learner self-direction relationship is relatively consistent within and across such disparate factors as age and returning to college after a long break is because the personality traits are driving the relationship, which implies that other personality traits are affecting learner self-direction, not that learner self-direction is influencing other personality traits. This is a conceptual model which should be more rigorously evaluated by future research, but should it prove to be even partially true, it would have major implications for those theories of self-direction in learning which place primary emphasis on the role of personal experiences and environmental determinants of college student self-direction. Such a model would not rule out the role of experiential and environmental factors in self-direction in learning for college students; rather, it would mean that personality traits, even traits measured in high school, may influence collegiate activities and experiences which may, in turn, influence the learner self-direction of college students. It may be that personality traits, not academic and personal experiences, are the major determinants of college student self-direction in learning.

Directions for Future Research

There are a number of interesting areas for future research that could clarify and extend the present findings. In addition to the need for replication on different

samples, research could be conducted on how the Big Five and narrow personality traits relate to Sense of Identity and learner self-direction. Another topic to investigate further is the relationship between age of college students and learner self-direction. As mentioned earlier, perhaps the most important need for future research is to utilize longitudinal research designs to help clarify the direction of causality for personality traits vis-à-vis learner self-direction and to try to determine how these linkages are established. For example, do individuals who are more optimistic engage in new learning activities than more pessimistic individuals, with optimism helping to facilitate self-direction? Hopefully, subsequent research in this area can assess the linkages among learner self-direction, Big Five and narrow traits, and a variety of important criteria in the college student domain, including grades (e.g., Furnham, Chamorro-Premuzic, & McDougall, 2003; Lounsbury, Sundstrom, Loveland et al., 2003), life satisfaction (Lounsbury et al., 2004), dropout (Heilbrun, 1962, 1965) life satisfaction, and subjective well-being (DeNeve & Cooper, 1998).

Study Limitations

There are two primary limitations of the current study that should be acknowledged. First, this study was limited to a four-month interval in time for a single year in a single geographic area at a large, public university, leaving open the question of generalizability to other time periods, geographic areas, and types of universities. Second, most of the study participants were underclassmen; thus, we do not know if the results would generalize to samples from other educational levels.

Conclusions

The results of the present study indicate that part of the Big Five traits as well as three of the four other narrow traits measured in this study were each related to learner self-direction, with other narrow traits adding incremental validity to the Big Five and accounting for substantial variance in learner self-direction on their own. In combination, the Big Five and narrow traits accounted for more than half of the variance in learner self-direction and a composite of six traits was found to be substantially related to learner self-direction for eight different subgroups of students representing different categories of nontraditional students and student gender. Taken as a whole, the present findings were interpreted as, in part, confirming and extending the results of Lounsbury et al. (2009) regarding the Big Five and learner self-direction, demonstrating the generalizability of personality trait-learner self-direction relationships across a variety of different demographic and personal subgroups of students and providing some clues that the direction of the causal arrow may be from other personality traits to learner self-direction.

In conclusion, it is clear that learner self-direction has manifold connections to other personality traits and is not clearly associated with just one of the Big Five traits. In a sense, this pattern of multiple connections to personality is consistent with the diverse factors learner self-direction has been linked to in the theoretical literature, as, for example, the six vectors of college student development that Chickering and

Reisser (1993) posit as leading to identity establishment for college students. Hopefully, further research will extend and clarify the nomological network of other personality traits and learner self-direction.

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THE ROLE OF SELF-DIRECTED LEARNING IN THE WORK OF COMMUNITY LEADERS

Leatrice Turlis Phares and Lucy Madsen Guglielmino

Abstract

This study was designed to examine self-directed learning readiness of volunteer community leaders and to explore their use of self-directed learning in their community leadership roles. The mean for this sample on Guglielmino's (1978) SDLRS (Learner Preference Assessment) was significantly higher than the general population mean. In-depth interviews with 10 of the 131 subjects revealed extensive self-directed learning contributing to the participants' community leadership efforts and a strong belief that ongoing learning is essential to perform well as a community leader.

The increasing complexity of our society, our work, and expanding technology place more demands on those who volunteer for community leadership roles. In 1996 Kotter stated, ". . . by any objective measure, the amount of significant, often traumatic, change in organizations has grown tremendously in the past two decades" (p. 3), and the change has continued to escalate. O'Connell (2006) notes, "The problems of contemporary society are more complex, the solutions are more involved and the satisfaction more obscure, but the basic ingredients to progress are still the caring and the resolve to make things better" (p. 7). Community leadership is defined as assisting the public and private non-profit sectors in meeting the changing needs of local communities, organizations and citizens (Kouzes & Posner, 1995). Today's society expects its leaders to take the initiative and devise goals and strategies to solve our increasingly complex community problems, working effectively both individually and within groups. Clark (1999) asserts that leaders must be creative problem solvers who work in a team atmosphere and are able to organize resources to accomplish tasks with maximum efficiency. They need to be flexible, able to assess situations quickly and accurately and to create appropriate goals. Kouzes and Posner (1995) surveyed several thousand business and government executives and found that forward thinking and a sense of direction were other important leadership characteristics; and Kotter (1998) found that the most notable trait of great leaders is their quest for learning. Voluntary community leaders step forward to take responsibility for community problems, often with little or no formal preparation, gathering information and marshalling resources to address new issues and challenges. The characteristics and

actions of community leaders described in the literature suggest that they are highly self-directed learners.

Self-directed learning has been described as 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 (Knowles, 1975). Tough (1971) found that 98% of adults are involved in self-planned learning, with a mean of 8.3 projects a year, each averaging 8.16 hours, and several recent studies have reinforced his findings (Davis, Bailey, Nypaver, Rees, & Brockett, 2010; Guglielmino et al., 2005). According to Merriam, Caffarella, and Baumgartner (2007), "Guglielmino has provided the most-used operational definition for self-directed learning" (p. 121). Guglielmino (1978) described a highly self-directed learner based on her Delphi study of experts in self-directed learning:

> A highly self-directed learner is one who exhibits initiative, independence, and persistence in learning; one who accepts responsibility for his or her own learning and views problems as challenges, not obstacles; one who is capable of self-discipline and has a high degree of curiosity; one who has a strong desire to learn or change and is self-confident; one who is able to use basic study skills, organize his or her own time, set an appropriate pace for learning, and develop a plan for completing work; one who enjoys learning and has a tendency to be goal-oriented. (p. 73)

A growing body of literature supports a link between self-directed learning and attainment of or performance in leadership roles (Boyce, 2004; Durr, 1992; Connelly, 2004; Guglielmino, 1996; Guglielmino & Guglielmino, 1983, 2008; Kandarian, 2004; Roberts, 1986). *Self-Directed Learning Readiness Scale (SDLRS)* levels are even higher among top entrepreneurs in the U.S. who, like community leaders, often have fewer guidelines such as corporate policies to guide or restrict their actions (Guglielmino & Klatt, 1994).

Many leaders in the workplace, whether in business, education, or other areas, are also community leaders. It appears that the processes of community problem solving and self-directed learning are analogous, as are the characteristics of effective community leaders and the characteristics of highly self-directed learners. Imel (1999) states that there are those who participate in self-directed learning for the process of community problem solving. However, the use of self-directed learning by volunteer community leaders has not previously been investigated in depth. Taylor (2002) raised the issue that "there is very little in the literature that analyzes exactly how self-directed learning is happening, the dynamics of learning in these contexts or the differences between learning as an individual for personal reasons and learning as an individual member of a group working for a common cause" (p. 44). Determining the levels of self-directed learning readiness of community leaders and exploring whether they use self-directed learning in their leadership roles (and, if so, how) can enhance our understanding of the process of community leadership and provide

valuable insights to improve the limited professional development available for community leaders.

Purpose and Research Questions

This study was designed to examine the self-directed learning readiness of community leaders and to explore their use of self-directed learning in their community leadership roles. Three research questions and one hypothesis guided the study:

1. What is the mean level of self-directed learning readiness of community leaders and how does it compare to the readiness levels of other groups?
2. What types of learning projects did community leaders participate in during the 12-month period prior to the study?
3. Did the community leaders use self-directed learning projects to carry out their community leadership roles? If so, to what extent?

One quantitative research hypothesis was posed to investigate the first research question. The second research question was explored through documentation and analysis of learning projects in structured in-depth interviews. The third research question was explored through analysis of the responses to open-ended questions incorporated into the interview.

Null Hypothesis: There is no significant difference in the level of self-directed learning readiness of community leaders as measured by the Self-Directed Learning Readiness Scale (SDLRS) and the mean SDLRS score for U.S. adults.

Delimitations and Limitations

This study was delimited to volunteer leaders of community service organizations, specifically (a) board members of the Leadership Broward Foundation in Fort Lauderdale, Florida; Leadership Miami in Miami, Florida; Leadership Palm Beach County in West Palm Beach, Florida; and (b) Rotarians who have a leadership role in Rotary District 6990 and live in Broward, Miami-Dade, and Monroe Counties in Florida.

The convenience sample also constitutes a limitation. The primary researcher is a member of two of the organizations studied, which creates an advantage in terms of access to participants, but may affect the content of participant response and interpretation of results. However, the researchers strove for objectivity and an additional professional educator reviewed the transcripts and data analysis.

Method

To assess the readiness for self-direction in learning among the community leaders and compare it to the means of other groups, the SDLRS (Guglielmino, 1978)

was used. A modification of Tough's (1971) interview schedule was used to gather data on the learning projects of a selected sample of the community leaders. Open-ended questions were added to the interview to further explore the use of self-directed learning in community leadership roles. The data collection instruments are described below.

Instruments

   Self-Directed Learning Readiness Scale. The SDLRS is the most often used quantitative measure of self-directed learning (Merriam, Caffarella, & Baumgartner, 2007).   It is a 58-item, five-point Likert-type scale that measures the attitudes, values, and abilities of learners relating to their readiness to engage in self-directed learning at the time of their response. This readiness is assessed as a total score, which is then converted into bands of *high, above average, average, below average* and *low* levels of readiness (Guglielmino & Guglielmino, 1991). The SDLRS is referred to in test settings as the Learning Preference Assessment (LPA). The reliability has most often been assessed through measures of internal consistency; estimates normally range from .87-.92 (Delahaye & Choy, 2000).

   Content validity of the *SDLRS* was established by Guglielmino's (1978) development process, which used a modified Delphi technique that involved a panel of experts in three rounds of surveys to identify the characteristics of a highly self-directed learner. Fourteen researchers known for their work in the area of self-direction in learning participated. Among them were Malcolm Knowles, Allen Tough, Cyril Houle, B. Frank Brown, Arthur W. Chickering, Wilbert J. McKeachie, and Morris Weitman (Guglielmino, 1997). The vast majority of studies have supported the reliability and validity of the instrument (for example, Chuprina & Durr, 2006; Connolly, 2004; Delahaye & Smith, 1995; Durr, 1992; Finestone, 1984; Graeve, 1987; Hassan, 1981; Liddell, 2007; Long & Agyekum, 1984; McCune, 1988; McCune & Guglielmino, 1991; Muller, 2007; Oliviera & Simões, 2006; Posner, 1989-90; Zsiga, 2007). There has been some criticism (Brockett, 1985; Field, 1989), responded to by Long (1989), McCune (1989), and Guglielmino (1989). A comprehensive review by Delahaye and Choy (2000) concluded, "There has been extensive support for the [SDLRS] *LPA* in the literature as an accurate and useful instrument for measuring readiness for self-directed learning" (p. 2).

   Tough's interview schedule with additional open-ended questions. A modification of Tough's (1971) interview schedule was used to answer the research questions regarding the types of learning projects the community leaders had participated in over the 12 months preceding their interviews. Numerous studies using Tough's Interview Schedule have been conducted (for example, Brasfield, 1984, Coolican, 1975; Davis et al., 2010; Estrin, 1986; Guglielmino et al., 2005; Hiemstra, 1976; Penland, 1978, 1979; Peters & Gordon, 1974; Ralston, 1981). Although there have been variations in both the total number of learning projects and in the total percentage of self-planned projects, the findings from the original Tough investigation have largely been substantiated (Brockett & Hiemstra, 1991).

   Modification of the interview schedule for this study involved the addition of open-ended questions. One broad question was added specifically to explore learning

projects related to the performance of the subjects' community leadership roles: "Let's take a little time now to talk specifically about learning and your community leadership role. Would you tell me about any new learning required for your community leadership role?" Appropriate follow-up questions were asked to fully explore this topic.

Procedures

Assessment of SDL readiness. The convenience sample for the assessment of readiness for self-directed learning consisted of volunteers who held leadership roles in community organizations. The participants were recruited from the specified groups until a usable sample size was obtained. Power analysis indicated that at least 128 subjects were needed to obtain a power of .80 with a medium effect size ($d = .50$) with an alpha of .05.

After approval by the Institutional Review Board, the primary researcher requested letters of support for the study from leaders of the targeted organizations and then contacted the executive directors of Leadership Broward Foundation, Leadership Miami, and Leadership Palm Beach County to gain permission to attend a board meeting and explain the research study. After explaining the study, she distributed the data collection material to board members who agreed to participate at that time. The materials included: (a) Institutional Review Board consent forms, (b) the Learning Preference Assessment (SDLRS), (c) the demographic form, and (d) a self-addressed, stamped envelope to return the completed questionnaire.

The researcher used the District 6990 Rotary International 2004-2005 Official Directory as a guide to identify the Rotarians in a District Rotary 6990 leadership role (Benson, 2004). She then attended major Rotary District 6990 events and asked Rotary leaders if they would like to volunteer to complete the *LPA* questionnaire. Procedures for administration were the same as described for the leadership groups, except that these participants were offered the option to complete the questionnaire and demographic sheet at that time or return it to the researcher at a later date. The materials were distributed to 172 potential participants. The primary researcher placed a follow-up telephone call to participants who had not returned their questionnaires within two weeks. Seventy-one participants chose to return the material by mail, while 60 participants completed the material onsite, resulting in a 76% response rate for the survey (131 of 172).

Exploration of learning projects. Once the *LPA* forms were administered and the completed forms were returned, the researcher chose a subsample of ten community leaders to represent a cross-section of ethnicity, gender, age, education, and the four identified organizations. *SDLRS* (*LPA*) scores were not computed before the individuals were selected and interviewed. The ten interviews were based on a modification of Tough's Interview Schedule to obtain direct information about the types of learning projects the community leaders participated in over the 12 months preceding the interviews.

The interviews, conducted by the primary researcher, lasted from one to two hours; they took place at locations mutually agreed upon by the researcher and the participants. Participants were assured of the confidentiality of their responses and

their right to withdraw at any time and were asked to sign a consent form. All participants were asked the same questions in the same order, using both fixed choice and open-ended questions. The open-ended questions were designed to explore in detail the learning projects of the community leaders, and a final open-ended question was added in an attempt to determine if and how community leaders used learning projects to carry out their community leadership role. If early responses indicated that they did, follow-up questions were used in an attempt to determine the extent to which this had occurred. The participants' replies were audiotaped and transcribed by the researcher. To ensure accuracy of the acquired data, the researcher also used member checking, asking the participants to review their transcripts for accuracy and make any appropriate changes (Glesne, 1999).

Profile of Respondents to the LPA

There were 71 males and 60 females in the study. The majority (81.7%) of the participants were Caucasian, with 9% African American, 6.1 % Hispanic, 1.5% Asian or Pacific Islander and 0.8% American Indian or Alaskan Native. Most were between the ages of 36 and 65, with the largest number being 56 - 65 years old. Everyone had at least some college, with most having some graduate education. Almost all reported that their employment level was professional or managerial.

Data Analysis

The completed *SDLRS/LPA* questionnaires were scored using the instructions provided by the author (Guglielmino & Guglielmino, 1991) and the mean score was calculated. The *LPA* mean score of the community leaders was compared to the general adult population mean score of 214, to the mean of a meta-analytic study of research using the *LPA* with adults in 29 different studies from 1977-1987 (McCune, Guglielmino, & Garcia, 1990), and to a sample of top entrepreneurs (Guglielmino & Klatt, 1994). *T*-tests were used for the comparisons. The quantitative items from Tough's Interview Schedule were tallied and the data described to develop an understanding of the extent and types of learning projects conducted by community leaders. In analyzing the open-ended questions that were added, the researchers identified the most common responses and documented them with supporting quotations. Two researchers independently conducted the analysis.

Findings

Self-Directed Learning Readiness
Mean score of sample. The mean LPA score of the sample of 131 participants was 245.09 with a standard deviation of 19.04. The lowest score was 187 and the highest score was 285. According to the conversion table (Guglielmino & Guglielmino, 1991), the participants' mean score of 245.09 ranked in the 87th percentile and converted into a readiness level of *above average*. No participants scored in the low readiness level. Two participants scored in the below average level

and 20 participants scored in the average level. Eighty-three percent (83%) of the participants scored in the above average and high levels. Fifty-four scored in the above average level and 55 scored in the high level.

   Hypothesis testing. The null hypothesis tested in this study was that there is no significant difference in the levels of the self-directed learning readiness of community leaders as measured by the Self-Directed Learning Readiness Scale (SDLRS/LPA) and the mean score for US adults and specified groups. The *LPA* mean score of community leaders (M = 245.09, SD = 19.04) was significantly higher than the *LPA* mean score of the general population (M = 214, SD = 25.59), $t(130) = 18.69$, p<.001. The Cohen's *d* for this comparison was 1.21, a large effect size (Cohen, 1988). The *LPA* mean score of community leaders was also significantly higher than the *LPA* mean score of adults in 29 different studies from 1977-1987 (M = 227.7), $t(130) = 10.46$, p<.001. The *eta* squared for this comparison was 0.45699, a large effect size (Cohen, 1988). Finally, the *LPA* mean score of community leaders was significantly lower than the *LPA* mean score of top entrepreneurs (M = 248.6), SD = 18.74), $t(130) = 3.51$, p =.037. The Cohen's *d* for this comparison was 0.18, a small effect size (Cohen, 1988). Consequently, the null hypothesis was not accepted. These results support the alternative hypothesis that mean *LPA* scores for community leaders differ from mean *LPA* scores of the general population, adults in 29 different studies from 1977-1987, and top entrepreneurs.

Interviews

   Profile of interview participants. Six males and 4 females completed Tough's Interview Schedule. All had previously completed the *SDLRS* (*LPA*) for this study and were purposely chosen to be representative of the volunteer community leaders. The researcher based the selection on community leadership organization, ethnicity, age and education. The majority of the participants (70%) were Caucasian; the others were African American (10%), Asian or Pacific Islander (10%) and Hispanic (10%). There were an equal number of participants between the ages of 46 - 55 (30%) and the ages of 56 - 65 (30%). There were also an equal number of participants between the ages of 36 - 45 (20%) and 66 - 75 (20%). All were college graduates and 40% had some graduate education. All described their employment level as professional or managerial.

   Number of learning projects. The 10 participants completed an average of 16.2 learning projects during the previous year that met Tough's (1971) seven-hour minimum. The median number of learning projects was 15. The time spent on each learning project averaged 123.1 hours, with a range from 10 hours to 2,000 hours.

   Content of learning projects. The subjects of this study participated in a variety of learning projects during the 12 months before their interviews. After the interviews were completed, the researcher reviewed all the individual projects and combined similar types of subject matter, identifying five main content categories: employment / job-related, community organizations, personal interests, computers/ technology, and current events. Aspects of these categories relating to community leadership roles are discussed; the personal interest category is omitted in this paper.

Employment / Job-related. The largest number of learning projects that the participants identified related to their primary employment. All the participants had more than one learning project that was job-related. Although most included or began with formal learning settings, almost all included some form of self-directed learning as a part of the learning project. The topics were varied and reflected the participants' different types of employment, but many of their work-related projects also enhanced their community leadership skills; for example, marketing, financial management, survey methods, funding for public transportation, legal issues, and tax issues.

Community organizations. The second largest number of learning projects centered on the leaders' work community organizations. All participants identified learning projects related to their work with community organizations. The subjects of learning projects were varied and related to the needs of the individual community leader and the organization. There were far fewer references to the inclusion of formal learning segments in the learning projects related to community organizations as compared to employment / job-related projects. Sample quotes are included later in this paper.

Computers /Technology. All ten participants identified some type of computer or technology-related learning project that was self-directed. These learning projects focused on improving their skills, such as learning how to do PowerPoint presentations, how to conduct Internet searches, and how to use new technology. Learning about computers and technology was viewed as a tool to support other learning. As one leader commented, "Internet research is probably one of the fastest ways to educate yourself on a given subject and I found that ability, that experience very vital in the new job that I have had."

Current events. Seventy percent of the participants reported that current events were an ongoing learning project for them. They read the newspapers, read the news online, watched the news reports and shows on TV, followed the stock market, and attended meetings that involved local government issues. One participant said, "I've always had an interest in current events and so I just make it part of my day. Current events are just something that's a part of life."

Learning projects in relation to community leadership roles. All participants had voluntarily identified learning projects that related to their community leadership roles before they were asked the final question, "Would you tell me about any new learning required in your community leadership role?" When asked, they all referred to previously-identified learning projects that related to their leadership of community organizations. These were strongly represented in the *community organization*, *computer/technology*, and *current events* categories and, to a lesser extent, in the *job-related* category. The only one of the major categories that did not appear to contribute meaningfully to learning for community leadership role was the personal interest category.

As the researchers reviewed and analyzed the interviewees' descriptions of learning related to their community leadership roles, three concepts were mentioned most often:

1. The community leaders had a desire to learn more about their organizations.
2. They identified self-directed learning that contributed to helping them do their jobs better.
3. They recognized a need for their learning to be ongoing.

Desire to learn more about the organization. The two organizations from which the subjects were selected were community-based, and the participants had been elected to unpaid leadership roles within them. Some participants knew more about their organizations than others, but they all expressed a desire to learn more. Two sample quotes:

> Well, as incoming president, what I set out to learn in greater detail was all about our programs and the specifics of those, how we put those on, so that I had a thorough understanding of what our organization is all about. And also, I felt it very important that I better understand our budget so I spent a lot of time digging behind the finances.

> I had to learn a great deal about the organization that I was attempting to be the leader of -- a club that was one component of a huge international organization. So I had to learn as much as I could about it. I attended conferences as well as read the magazine and all the various materials provided by them. I did many things on my own, ongoing learning.

Identification of learning that contributed to doing their jobs better as community leaders. The participants identified many examples of learning that contributed to doing their jobs better as community leaders. Most of the comments reflected independent learning; others involved or grew out of group experiences.

> I tried to learn a bit more about community water projects because potable water is a great interest, and I knew I was going to attempt a matching grant project on potable water.

> I learned how to put on a web-based zone membership seminar, which had never been done before. The web-based portion of it was motivated because we have such a diverse zone.

> Right now we are going out and learning different marketing aspects, different techniques to get people interested in giving to the capital campaign.

> I tried to learn how to do fundraising… for nonprofits to generate more revenues for the projects that I am working with, to be more effective with what I am already involved in.

> I have been learning how to get volunteers to work together as a group and as individuals.

Right now I'm going through a lot of training that details how to motivate people to accomplish goals, how to grow membership, how to grow projects.

[I] went online to research resources on membership.

You get a lot of materials. [The Rotary] Manual [of] Procedures, manuals of how to set up committees, manuals of all sorts of things. Those are all the readings, books, pamphlets, and so forth.

I did many things on my own, but the conferences, two main conferences I attended, the District and International, helped as well.

Being able to attend [conferences] and talk to people who can increase my own understanding of what issues there are, whether they're social or monetary or environmental or professional, plays a big role in my decision making.

It wasn't so much a class as it was a commitment to chair a committee that would stretch me as an individual--that would force me to spend more time learning all there was to learn.

Ongoing learning. Most of the participants identified the learning as "ongoing," some using that exact word. Sample quotes illustrate their strong expression of the need for ongoing learning:

Ongoing. Ongoing because the leaders are very helpful to one another. So it is a constant process.

I believe that I need to continue to learn so when I'm making a judgment call, I'm making judgments based upon experience both personally and from others and also from knowledge that I gained from the various resources that I have been able to use.

I did many things on my own, ongoing learning.

I'm continuing to school myself.

I read a considerable amount online. I'm constantly using different reference sites and a considerable amount of news sites per day. . . . So, I'm constantly reading.

I don't think that you are ever through learning. There is always something else to learn.

Conclusions and Discussion

Based on the findings of this study, three major conclusions were drawn: community leaders are highly self-directed learners; they make extensive use of their learning projects in their community leadership roles; and they recognize that their community leadership roles require ongoing learning.

Community Leaders as Self-Directed Learners

Based on the sample studied, community leaders are highly self-directed learners, as indicated by both their *SDLRS* scores and their involvement in learning projects. The *SDLRS* mean score of community leaders (245.09) was higher than the adult population mean (214) and higher than the mean of a large meta-analysis of 29 studies (227.7), but not as high as the mean of top entrepreneurs (248.6) in the U.S. The numbers of learning projects undertaken by the community leaders and their duration (discussed in the next section) similarly reflect a high level of self-direction in learning.

It seems logical that high-level community leaders would be highly self-directed learners because of the complex demands for learning that community leaders face. In addition, this finding parallels the findings of high levels of self-directed learning readiness among leaders in business. Another possible reason for the higher mean score as compared to the adult population and the large meta-analytic study means could be that the participants in the present study all had a least some college and most were college graduates. Some previous studies have documented a relationship between *SDLRS* means and educational level (for example, Durr, 1992; Roberts, 1986); however, some have not (Bryan-Wunner, 1991).

All of the participants had listed employment level as professional or managerial. Studies by Roberts (1986) and Durr (1992) had shown that there is a significant relationship between the *SDLRS* scores and participants' managerial level and management performance in large businesses; however, Bryan-Wunner (1991) did not find significant differences in *SDLRS* scores of different levels of park and recreation leaders. It was understandable that the participants scored lower than the top entrepreneurs in the U.S. (Guglielmino & Klatt, 1994). In that study, a very select group of 50 top entrepreneurs selected by a professional magazine constituted the sample.

The results of this study add support to Brockett and Hiemstra's (1991) statement that self-direction in learning is clearly not limited to white, middle class adults. Although the education level included some college for all participants, the sample of community leaders in this study represented a variety of ethnicities. The study sample included 107 Caucasians, 12 African Americans, 8 Hispanics, 2 Asians, and 1 American Indian/Alaskan Native; and 3 of the 10 interviewees were non-Caucasian.

Self-Directed Learning Projects of Community Leaders

There is evidence that community leaders make extensive use of self-directed learning projects in carrying out their leadership roles.

Numbers. In the sample studied, the participants had completed an average of 16.2 learning projects during the past year that met Tough's (1971) seven-hour minimum. This was nearly twice the average number of projects reported in Tough's original findings (a mean of 8.3 learning projects in the previous year).

Time. The average number of hours spent on each project was 123.1 hours, which was higher than Tough's reported average of 100 hours per project. The hours were also higher than the study by Guglielmino et al. (2005) that reported an average of 56.1 hours per learning project. A few possible reasons for these differences could be that the participants in this study were highly educated, all had professional or managerial employment levels, and all were involved in more than one community organization.

Reporting of learning projects related to community leadership. Of the five major categories identified in all of the learning projects reported by community leaders, learning projects relating to community leadership roles accounted for the second highest number of projects. Other themes were employment/job related, computer/technology, current events and personal interest. As could be expected, employment/job related accounted for the largest number. All the participants had identified and discussed learning projects that related to their community leadership roles before being asked the final open-ended question. It appears that they were well aware that they had participated in self-directed learning projects that helped them carry out their leadership roles.

Emphasis on need for self-direction in learning for community leadership roles. In addition, a comparison of the learning projects that were job-related as compared to those relating to committee leadership roles revealed that many more of those related to community leadership were completely self-planned and self-directed. One interviewee's comment suggested a reason for this strong difference. Mentioning the "lack of direction" for community leaders, he commented:

> You know, in most situations, you are given an assignment and you're given the expectation and a time line and so on. And you know the scope and the magnitude of the job and then you can assess what you need to go about to fulfilling that assignment. And then at the end of the day or the project, you're able to evaluate your progress. The problem with [community organizations] is that they give you a title, and you ask, what's the scope of the job? Well, the job is to be in charge, so then you [ask], "Where's my job description? What are my duties? What do I have to do?" Well, don't worry about it. You'll do it as you go.

The relative lack of specific job descriptions, training and formal guidelines and procedures for community leadership roles places greater responsibility on the individual to learn what it is needed to perform well, and these individuals took that responsibility seriously. Two quotes summarize especially well the challenges faced and commitment evidenced by community leaders as they try to make a difference:

It has been a tremendous growth experience. I have met some wonderful people, locally and globally. It has forced me to really challenge myself to do something. [I have] never done anything this tough, I don't think, especially nothing that I've done for free.

I was in a leadership position. I was obligated to learn as much as I could so that I could share that knowledge with the group so we could become effective.

Emphasis on learning through conversation. It was interesting to note the emphasis participants placed on talking with others in similar roles or those who had expertise in the area they needed to learn about. One person described his learning method as, "Meeting and talking." Another remarked, "Networking put me in contact with people who … were experts." While nine of the interviewees reported that they attended programs sponsored by the national offices of their local community organizations, their comments regularly mentioned conversations with other participants as a primary means of learning, as indicated by the following quote:

Attending the conference in Atlanta helped me understand what organizations around the country are doing with respect to improving their communities and try to take away ideas from that. . . You know, our organization has been [around] for 25 years and you kind of get set in your ways. It's refreshing to go to these conferences and talk to other people and walk away with new ideas that perhaps we might be able to implement locally.

These comments support the thinking of Brookfield (1981, 1984), Knowles (1975), and others that self-direction does not necessarily mean that learning takes place in isolation. In many cases, participants emphasized their identification as part of a group of individuals with a common interest who could expand their knowledge by sharing with each other.

Recognition of the Need for Ongoing Learning by Community Leaders

Community leaders strongly evidenced the need for and the practice of ongoing learning in order to adequately fulfill their duties in both their work roles and their community leadership roles, as documented in the quotes provided in an earlier section of this paper. Their comments support Kouzes and Posner's (1995) claim that "effective leaders are constantly learning" (p. 323). The community leaders conducted a large number and a wide variety of learning projects. Although the most prevalent learning projects related to their jobs and the second most prevalent related to their community leadership roles, it could be assumed that many of the learning projects had a dual purpose of both work and community organization. For example, one participant indicated that he was applying the learning from his workplace to his leadership of the community organization.

The specific things that I have been learning are my new roles and responsibilities that are required of me. We are part of an international

organization fostering good will in our local and global community. Right now I am going through a lot of training that details how to motivate people to accomplish goals [at work].

The demands of the participants' jobs and their leadership positions appeared to fuel both their need for continued learning and their recognition of their learning capacity. One respondent said:

I'm finding that I'm needing to apply myself more in whatever; [for example,] communicating more to larger groups than one-on-one. I mean both exist, but the majority of my communication has been either one-on-one or in groups of five or six, and this year that has flipped. And also, I'm having to readdress the need [to be] much more sensitive to listening, not only to others, but also myself. I'm continuing to school myself.

Another noted, "You realize that your learning capabilities are not limited when you can put your mind to it and involve other people." One final quote provides a good summary of the community leaders' recognition of their need to be continuous learners: "I don't think that you're ever through learning. There is always something else to learn."

Implications For Practice

It is evident that the community leaders examined in this study are self-directed learners. They know how to take the initiative in diagnosing their own learning needs and finding ways to meet those needs. They are lifelong learners who value the importance of ongoing learning and have participated in a variety of learning projects. They are aware of current technology and try to maintain their proficiency. Therefore, outdated learning materials and traditional lecture-formatted educational programs would not be acceptable to them. This sample was limited and may not necessarily reflect the wider population of community leaders; however, it suggests that training programs need to be developed and material presented in a manner that recognizes that community leaders are likely to be self-directed learners. The issue of time also needs to be addressed. Usually, community leaders are members of the workplace in a professional or managerial position, belong to more than one community organization, and participate in several different leadership training programs. They have the enthusiasm to meet and learn with and from others and exchange ideas. They are willing to share and are always looking for ways to do things more effectively and efficiently. However, they do not have the time or desire to waste on being spoon-fed information that they may have already mastered.

Trainers and developers of training programs need to take into consideration that community leaders are likely to be self-directed learners and plan the educational programs accordingly. The traditional training programs need to be reevaluated and updated. Community leaders need to have some face-to-face contact with other learners and be able to share ideas. The interviewees all spoke of the value of one-on-

one and small group discussions as effective learning approaches. Planners need to remember to provide space for collaborative learning and extensive sharing of lessons that people have learned through their own efforts. The information needs to be useful and applicable, cutting edge, and it needs to go beyond the boundaries of the local community. All of the community leaders interviewed also reported learning projects related to technology. This finding suggests that internet-based resources such as discussion boards, desktop conferencing, web-based tutorials and listservs might be excellent vehicles to assist community leaders.

Suggestions For Further Research

Further research on volunteer community leaders in other organizations and in other cultures is needed. This study targeted a specific area of one state and included only two types of organizations, the Rotary and community leadership organization boards, limiting its generalizability. It would be assumed that other community organization leaders are self-directed learners, but it would be interesting to identify their learning projects and explore how these relate to their community leadership roles.

Leadership is a key ingredient to strong communities. A convergence of factors is making effective, insightful community leadership ever more essential in the fabric of our society. Expanding responsibilities and challenges of community leaders are being fueled by budget cuts and rapid changes in all aspects of our society. There are many community needs not being met or inadequately being met. Development of community leaders is a never-ending process, beginning with the identification of potential leaders, drawing them into areas of involvement, and providing training (Bloom, 1995). Continued research and support into the learning needs and methods that will assist community leaders in effectively meeting the demands of their complex roles is essential.

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SELF-EFFICACY AND THE LEARNER AUTONOMY PROFILE

Michael K. Ponton, Paul B. Carr, Christine T. Schuette, and Gary J. Confessore

Abstract

In 2004, the Appraisal of Learner Autonomy (ALA) was created as a measure of self-efficacy in autonomous learning. Since 2005, it has been offered in conjunction with the Learner Autonomy Profile (LAP) and has been completed by over 2,000 subjects. The purpose of this article is to present recent analyses to better articulate the usefulness of the ALA within the context of the LAP and to discuss related implications to the study of adult learning. The findings suggest that the ALA offers important explanatory utility in understanding learner autonomy and predicting autonomous learning.

The Learner Autonomy Profile (LAP; licensed to Human Resource Development Enterprises, HRDE) was initially developed as a battery of four instruments: the Inventory of Learner Desire (ILD; cf. Meyer, 2001), the Inventory of Learner Resourcefulness (ILR; cf. Carr, 1999), the Inventory of Learner Initiative (ILI; cf. Ponton, 1999), and the Inventory of Learner Persistence (ILP; cf. Derrick, 2001). The purpose of the LAP is to use these measures of the four conative factors of desire, resourcefulness, initiative, and persistence (cf. Confessore, 1992) as a method of determining the extent to which an adult tends to engage in agentic learning, which is a defining characteristic of autonomous learning (Ponton, 1999, 2009). To this end, HRDE continued instrument refinement (Park & Confessore, 2002) and currently engages in the coaching of those adults around the world who are interested in increasing their learner autonomy.

In 2004, Ponton, Derrick, Carr, and Hall presented the Appraisal of Learner Autonomy (ALA) as a measure of self-efficacy in autonomous learning. The construct of self-efficacy has been supported empirically as an important mediator between motivation and agency (Bandura, 1997); therefore, Ponton et al. (2004) argued that such a measure was essential in furthering the understanding of learner autonomy. The 9-item final version of the ALA (Ponton, Derrick, Hall, Rhea, & Carr, 2005) was argued as valid and has been used as part of the LAP since its publication in 2005 (note that the ALA is unlicensed and is available in its entirety in Ponton, Derrick, Hall, et al., 2005, for research purposes). At this time, over 2,000 people have taken the ALA in conjunction with the administration of the LAP by HRDE.

Ponton (1999) offered a definition of learner autonomy as "the characteristic of the person who independently exhibits agency [i.e., intentional behavior] in learning activities" (pp. 13-14). He argued that the construct of *learner autonomy* exists within the cognitive/affective domains of the learner and that *autonomous learning* represents the

resultant conative manifestations (i.e., intentional action) of such latent autonomy. The ILD was conceptualized as a preconative measure of the degree to which a person can act intentionally in any domain of functioning (cf. Meyer, 2001, Inventory of Intentional Behavior) whereas the ILR (Carr, 1999), ILI (Ponton, 1999), and ILP (Derrick, 2001) were designed as conative measures within the domain of adult learning. Self-efficacy is a belief of personal capability to engage successfully in a given performance (Bandura, 1997); therefore, the ALA—a measure of one's belief in requisite ability to successfully engage in autonomous learning—exists within the preconative domain similar to the ILD.

There has been potential ambiguity in the literature with respect to whether conative constructs should be included in the learner autonomy or autonomous learning domains (cf. Ponton, Derrick, Confessore, & Rhea, 2005; Ponton & Schuette, 2008). Ponton, Derrick, Confessore, et al. (2005) stated the following:

> It should be noted that *showing* resourcefulness, initiative, and persistence in one's learning is conceptually separable from what is measured…[by the ILR, ILI, and ILP]. The ILR, ILI, and ILP are measures of *intention to show* resourcefulness, initiative, and persistence. These instruments were developed in this manner because it is not possible to know, a priori, whether or not study participants are currently engaged in autonomous learning activities (cf. Ponton, 1999). Further research is necessary to uncover the strength of the relationship between the intention to engage in autonomous learning and the enactment of the behaviors of autonomous learning, the latter being the exhibition of resourcefulness, initiative, and persistence. (p. 86)

Thus, autonomous learning represents the actual manifestation of action related constructs (e.g., resourcefulness, initiative, and persistence) and not merely an intention to manifest such action. Using the conative measures of the ILR, ILI, and ILP to characterize autonomous learning as was done in Ponton and Schuette (2008) *is by proxy only* as there does not exist any way of knowing whether or not a randomly selected study participant is currently engaged in an autonomous learning activity for a direct measure of autonomous learning to be applied. In addition, as the present conative constructs are cognitively based (e.g., anticipating the future benefits of learning as part of the ILR), such direct measures cannot be limited to behavioral observations but rather must encompass a constellation of measures associated with self-reported "action-related concepts" (Chapman & Skinner, 1985, p. 201) under the larger umbrella of action theory.

To test this conceptual differentiation between learner autonomy and autonomous learning, Ponton and Schuette (2008) conducted a 2-factor confirmatory principal component analysis (PCA) using ILD, ILR, ILI, and ILP data from a nonprobability sample of 2,277 adults; insufficient ALA data precluded an inclusion of this measure in the analysis at that time. The PCA results supported the hypothesized separation of learner autonomy—represented by ILD measurements—and autonomous learning as represented by proxy by the ILR, ILI, and ILP measurements. Based on these results, they proposed it would be tenable to combine ILR, ILI, and ILP scores as a singular measure of *autonomous learning* (i.e., a new variable) provided each measure were normalized by the number of items in its respective scale (it could certainly be argued that normalization is

required at the subscale level as well; however, this argument has not been investigated to date).

The continued use of the ALA in conjunction with the LAP has resulted in a data set of sufficient size to continue this analysis; Comrey and Lee (as cited in Tabachnick & Fidell, 2007, p. 613) state that a sample size of 1,000 is excellent for factor analysis. Note that there is no necessary reason to continue to define autonomous learning via proxy measure arguments in order to make comparisons to learner autonomy constructs; theoretically, preconative and conative constructs should be separable as well. Thus, we hypothesize that a 2-factor confirmatory PCA would support the separation of the ALA and ILD vis-à-vis the ILR, ILI, and ILP based upon the conceptual separation of the preconative and conative domains of learner autonomy. The purpose of this investigation is to test this research hypothesis. Furthering our understanding of the relationship between these measures will help us to continue to assess the appropriateness of making causal arguments for facilitating autonomous learning using Fishbein and Ajzen's (1975) behavioral model that relates cognition, affection, and conation to intentional behavior. Based on this continued understanding, future studies would require the use of structural equation modeling to test directional relationships.

Method

Participants

The data from a nonprobability sample of 2,074 adults were analyzed. These data represent a conglomeration of samples from numerous research studies in which both the LAP and ALA were administered. The average age of the participants in this resultant sample was 28.1 years ($SD = 12.0$). The majority were female ($n = 1,496$; $P = 72.1\%$) and the level of education was as follows: high school diploma/G.E.D., $n = 1,205$, $P = 58.1\%$; bachelor's degree, $n = 324$, $P = 15.6\%$; and graduate/professional degree, $n = 518$, $P = 25.0\%$ (note that 27 participants, $P = 1.3\%$, did not respond to this field).

Results

Table 1 presents the intercorrelations between the five scales. All correlations are significant at the .01 level (2-tailed), and the ILD moderately correlates with the ILR, ILI, and ILP whereas these last three scales correlate highly with each other. The ALA moderately correlates with the ILR, ILI, and ILP, and its correlation with the ILD is low. ("Low," "moderate," and "high" correlation descriptions as per Hinkle, Wiersma, & Jurs, 1998, p. 120, for correlation ranges .30 to .50, .50 to .70, and .70 to .90, respectively.) Internal consistency for each scale is reflected in the following Cronbach alpha coefficients: ILD, .93; ILR, .96; ILI, .97; ILP, .97; and ALA, .89.

Inspection of histograms (not presented) suggests normality for all five measures with each distribution having a slight negative skewness. Linearity is supported by the product-moment correlations presented in Table 1; as PCA was performed as opposed to factor analysis, multicollinearity is not a concern (no matrix inversion in PCA; Tabachnick & Fidell, 2007).

Table 1. *Intercorrelations Between Scales* (N = *2074*)

Scale	1	2	3	4	5
1. ILD	-	.573*	.521*	.549*	.391*
2. ILR		-	.843*	.854*	.552*
3. ILI			-	.893*	.592*
4. ILP				-	.577*
5. ALA					-

p < .01 (2-tailed)

Table 2 presents the factor loadings using exploratory, unrotated PCA performed on the correlation matrix. Compared to factor analysis, PCA is the preferred method of factor extraction for exploratory studies (Mertler & Vannatta, 2005, p. 250); thus, it was used in this investigation for the purpose of data reduction where it is presumed that the principal components are based upon the measured responses (DeCoster, 1998). The sole purpose of performing this preliminary analysis was to determine if there was any initial indication that the five scales were statistically unrelated, which would be in contrast to their theoretical classification as salient aspects of learner autonomy. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA) and the Bartlett Test of Sphericity were used to assess the suitability of the correlation matrix for factor analysis. For factor analysis, the MSA index should be no less than 0.5 (Cureton & D'Agostino, 1983, p. 389). In addition, Bartlett's χ^2 should enable a rejection of the null hypothesis of no difference between the correlation matrix and the identity matrix (i.e., common factors cannot exist unless partial correlations between items exist; Norusis, 1988) although this test is likely to be statistically significant for large sample sizes even with low correlations (Tabachnick & Fidell, 2007). The resultant MSA = .86 and Bartlett's Test of Sphericity approximate χ^2(10, *N* = 2074) = 8,102.1, *p* < .001, suggest the sample was adequate for PCA. Gorsuch (1983) states the first principal component represents the best condensation of a group of variables; thus, because the ILD, ILR, ILI, ILP, and ALA are linked to a related theoretical construct (i.e., learner autonomy), it should be no surprise that the loadings are high (Gorsuch asserts a minimum salient loading to be 0.3, p. 210, which is consistent with Tabachnick & Fidell's suggestion to only interpret variables with loadings of 0.32 or greater, p. 649) in the first component. Note that the highest loadings—all greater than 0.9—are for the ILR, ILI, and ILP scales.

Table 2. *Exploratory Principal Component Analysis: All Scales*

Scale	Loading
ILD	.698
ILR	.920
ILI	.928
ILP	.933
ALA	.722

Note. Only one component extracted explaining 71.7% of the total variance.

The intercorrelation and PCA results suggest that the hypothesized grouping of ILR, ILI, and ILP scales versus a grouping of ILD and ALA may be testable using linear methods. Thus, a confirmatory PCA was performed on the correlation matrix for a two-factor solution using Oblimin rotation with Kaiser normalization (two factors were chosen to correspond to the preconative and conative constructs of learner autonomy). Note that oblique rotation was chosen because it would be reasonable to expect that preconative and conative aspects of learner autonomy would correlate—conation results from beliefs as per Fishbein and Ajzen (1975)—thus making oblique rotation tenable. The resultant correlation between the two components is 0.44 (see Table 3), which is greater than the 0.32 minimum recommended by Tabachnick and Fidell (2007, p. 646) as justifying oblique rotation. As is evident in Table 3, the loadings for the ILR, ILI, ILP, and ALA are highest for the first component whereas the ILD loading is highest for the second component; cross loadings do not suggest a more complex interpretation than this separation. This is in contrast to the hypothesized 2-factor solution separating preconation as represented by the ILD and ALA versus conation as represented by the ILR, ILI, and ILP.

Table 3. *Pattern Matrix for Confirmatory 2-Factor PCA: All Scales*

Scale	Loading	
	Component 1	Component 2
ILD	.097	.902
ILR	.747	.302
ILI	.840	.182
ILP	.807	.236
ALA	.922	-.242

Note. Extraction sums of squared loadings: (a) for Component 1, 3.587 (71.7% of the total variance); for Component 2, .617 (12.3% of the total variance). Rotation (Oblimin with Kaiser normalization) sums of squared loadings: (a) for Component 1, 3.352; for Component 2, 1.955. Correlation between Components 1 and 2: $r = .44$.

Because the ILR, ILI, ILP, and ALA constituted the first principal component, a hierarchical regression analysis was performed to determine the predictive utility of the ALA on conation. Note that a new variable *conative learner autonomy* was created by summing ILR, ILI, and ILP scores where each is normalized by its respective number of items (i.e., 53, 44, and 34, respectively; cf. Ponton & Schuette, 2008). The ALA was chosen as the baseline model (i.e., Step 1a; see Table 4), and because of the statistically significant correlation between the ILD and the other four scales, the ILD was added to the ALA in Step 2. Both Step 1a and Step 2 models are significant at the .001 level; $F(1, 2072) = 1179.1$ and $F(2, 2071) = 1025.2$, respectively. The change in R^2 from Step 1a to 2 (i.e., .135) is also significant at the .001 level.

If the ILD were chosen as the independent variable for *conative learner autonomy* in a second baseline model (i.e., Step 1b; see Table 4), the model is also significant, $F(1, 2072) = 1016.2$, $p < .001$, with $R^2 = .329$ versus .363 when using the ALA as the independent

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variable. As would be expected, the change in R^2 by adding the ALA as a second independent variable to this new baseline model (i.e., .169) is also significant at the .001 level. Thus, the ALA is a slightly stronger predictor for *conative learner autonomy* when compared to the ILD due to an increase of 3.4% (i.e., .363 - .329) in explained variance.

Table 4. *Summary of Hierarchical Regression Analysis for Variables Predicting Conative Learner Autonomy (ILR$_{norm}$ + ILI$_{norm}$ + ILP$_{norm}$)*

Variable	B	SE B	β
Step 1a			
ALA	.015	.000	.602**
Step 1b			
ILD	.057	.002	.574**
Step 2			
ALA	.011	.000	.446**
ILD	.040	.002	.399**

Note. R^2 = .363 for Step 1a; R^2 = .329 for Step 1b; R^2 = .498 for Step 2 ($p < .001$ for change from either Step 1a or 1b).
**$p < .001$.

 Focusing on the ILR, ILI, ILP, and ALA and following the hypothesized separation of preconation (i.e., ALA) and conation (i.e., ILR, ILI, and ILP), a confirmatory PCA was performed on the correlation matrix for a two-factor solution using Oblimin rotation with Kaiser normalization for the ILD, ILR, ILI, and ALA. MSA = .83 and Bartlett's Test of Sphericity approximate χ^2(6, N = 2074) = 7,224.0, $p < .001$; thus, the sample was deemed adequate for PCA using this reduced variable set. In addition, the correlation between components is 0.60 (see Table 5) thereby supporting oblique rotation. As is evident in Table 5, the loadings for the ILR, ILI, and ILP are highest for the first component whereas the ALA loading is highest for the second component; cross loadings do not suggest a more complex interpretation than this separation.

Table 5. *Pattern Matrix for Confirmatory 2-Factor PCA:*
ILD Scale Excluded

Scale	Loading	
	Component 1	Component 2
ILR	.962	-.031
ILI	.934	.036
ILP	.960	.001
ALA	.001	.999

Note. Extraction sums of squared loadings: (a) for Component 1, 3.181 (79.5% of the total variance); for Component 2, .548 (13.7% of the total variance). Rotation (Oblimin with Kaiser normalization) sums of squared loadings: (a) for Component 1, 3.088; for Component 2, 1.986. Correlation between Components 1 and 2: r = .60.

Discussion

The research hypothesis is not supported by the findings; that is, the expected separation of the ILD and ALA (within the preconative domain of learner autonomy) versus the ILR, ILI, and ILP (within the conative domain of learner autonomy) is not tenable (see Table 3). The factor loadings associated with the ILR, ILI, ILP, and ALA on the first principal component suggest a common latent construct among these measures.

Meyer (2001) created an instrument that assesses the degree to which an adult can act intentionally based upon three constituent subscales: basic freedoms, managing power, and acquired skills. From her original instrument titled the Inventory of Intentional Behavior, the ILD evolved; however, the ILD does not actually represent a measure within the context of learning but rather represents a measure of theoretical importance to any agentic action of which autonomous learning is but one example. As Park and Confessore (2002) stated, "[Meyer's] work on desire to learn has been treated as an effort to understand the *precursors* to the development of intentions related to learning" (p. 289).

In contrast to the ILD, the ILR, ILI, ILP, and ALA are contextualized to learning. Carr's (1999) ILR assesses the degree to which an adult (a) anticipates the future benefits of learning, (b) prioritizes learning over nonlearning activities, (c) chooses to engage in learning versus nonlearning activities, and (d) solves problems that impede desired learning. Ponton's (1999) ILI assesses the following behavioral intentions in an adult learner as manifest with respect to a learning activity: goal-directedness, action orientation, persistence in overcoming obstacles, active approach to problem solving, and self-startedness. Derrick's (2001) ILP measures the sustained maintenance of the following behaviors in learning: volition, self-regulation, and goal-directedness. Finally, the ALA (Ponton, Derrick, Hall, et al., 2005) measures the perceived capability of an adult to engage in autonomous learning in the face of impediments to personal agency.

In the PCA model, "the principal components are based on the measured responses" (DeCoster, 1998, p. 3); thus, our interpretation of the results presented in Table 3 is that the first principal component is associated with learner autonomy based on beliefs of efficacy and intentions to exhibit resourcefulness, initiative, and persistence within the context of learning. The ILR, ILI, ILP, and ALA are all contextualized to adult learning and have been argued as together supporting autonomous learning; however, the ILD is not contextualized to learning. Therefore, the PCA results may have separated the five variables along the dimension of learning, which appears theoretically possible. When this dimension is controlled (i.e., when the ILD is removed from the PCA; see Table 5), factor loadings again support the theoretical separation of preconative learner autonomy (related to the ALA) and conative learner autonomy (related to the ILR, ILI, and ILP).

The present results suggest that the reason asserted by Ponton and Schuette (2008) for the separation of the ILD vis-à-vis the ILR, ILI, and ILP may not be the relationship between preconation and conation but rather is a result of the varied contextualization to learning; however, this could not have been assessed in 2008 without the ALA data. Controlling for learning contextualization results in a component structure that still supports the conclusion of Ponton and Schuette (2008) regarding the appropriateness for summing normalized ILR, ILI, and ILP scores into a new variable existing within the

conative domain of learner autonomy versus the preconative domain of learner autonomy as represented in part by the ALA.

The separate, predictive utility of either the ALA or the ILD on a new variable *conative learner autonomy* is statistically significant at the .001 level and qualitatively similar: R^2 = .363 for the ALA versus .329 for the ILD. In addition, using both as independent variables, the total variance explained in *conative learner autonomy* is 49.8% (see Table 4), which compares reasonably to the 59.7% previously reported by Ponton, Derrick, Confessore, et al. (2005) in their preliminary study of 82 adults using the same independent variables but rather a summation of nonnormalized ILR, ILI, and ILP scores for a reduced variable. Note that the addition of either the ALA or the ILD to the model results in a statistically significant increase in R^2 at the .001 level; thus, the model is more fully specified when both scales are included. The low correlation between the ILD and ALA (see Table 1) suggests that each accounts for separate variance in *conative learner autonomy* although the 49.8% of variance explained suggests that there are still more preconative measures (e.g., motivation, personal responsibility) required to fully specify a prediction model.

The degree to which a person believes him or herself generally capable of acting agentively, which is assessed by the ILD, will manifest itself in the intentional activities, or lack thereof, of the agent. The statistical findings associated with the ILD, ILR, ILI, and ILP are consistent in numerous studies over several years in that the ILD has always exhibited a statistically significant and moderate to high correlation with the other three measures either separately or in summation; thus, the degree of extant agency is well established as being related to the degree to which an adult intends to engage in autonomous learning. We find it interesting, however, that the ALA does exhibit some interesting statistical properties when compared to the ILD: (a) it loads with the ILR, ILI, and ILP along the proposed dimension of learner autonomy; (b) it loads separately from the ILR, ILI, and ILP when the dimension of learning is controlled along the argued dimensions of preconation versus conation; and (c) it accounts for more variance (albeit slightly) with respect to the reduced variable *conative learner autonomy*. However, the regression model associated with the criterion variable *conative learner autonomy* is more fully specified when both the ILD and ALA are included as independent variables.

Thus, we assert that the ALA offers some important explanatory utility in understanding learner autonomy and predicting autonomous learning. Specifically, in support of HRDE's coaching interests, the ALA should be offered as part of the LAP and inform resultant interventions that promote learner autonomy using the sources of efficacy information outlined by Bandura (1997): mastery experiences, verbal persuasion, vicarious experiences, and interpretations of physiological/emotive arousals. Generally, as we continue to further our understanding of adult learning, the ALA should be used in conjunction with other studies to continue to define and inform the causal role of self-efficacy in agentic learning.

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Author Note

FOSTERING SELF-DIRECTED LEARNING IN AN HONORS CLASSROOM THROUGH UNCONVENTIONAL METHODS AND ASSESSMENT

Nancy D. McDonald and Idell McLaughlin

Abstract

Instructors familiar with the attributes of self-directed learning (SDL) sense their resonance with the Honors course objectives set forth by the National Collegiate Honors Council (2008). Consequently, it seems Honors classrooms present ideal opportunities for exploring SDL, not only in instructional approaches, but also in evaluation and assessment. Assessment can be integrated so it becomes not a terminal evaluation of a specific learning activity but an open-ended element in a continuous progression of learning. This article is an exploration of how such an assessment approach has been implemented in Honors classes at Palm Beach State College, how that implementation encourages SDL, and the corresponding observable results.

The National Collegiate Honors Council (2008), in a statement on Honors Course design outlining course objectives, noted the following: "The key to a successful Honors program is not the intelligence of the student or the subject matter of the course, but the attitude and approach of the instructor" (2008, p. 1). In order to support and guide instructors through a process of designing an Honors course, the Council delineated five objectives that, either in this form or some variation, should be included in most Honors courses:

1. To help students develop effective written communication skills (including the ability to make effective use of the information and ideas they learn);

2. To help students develop effective oral communication skills (while recognizing that not all students are comfortable talking a lot in class);

3. To help students develop their ability to analyze and synthesize a broad range of material;

4. To help students understand how scholars think about problems, formulate hypotheses, research those problems, and draw conclusions about them; and to help students understand how creative artists approach the creative process and produce an original work;

5. To help students become more independent and critical thinkers, demonstrating the ability to use knowledge and logic when discussing an issue or an idea, while considering the consequences of their ideas, for themselves, for others, and for society. (p. 1)

As delineated and academically supportive as these objectives are, there is, as with all learning objectives, an understood challenge, that of assessment. Assessment is always the other side of objectives, the cart behind the horse. How one connects the two informs the manner in which material and media of the instruction are configured. The challenge can be broken down into three considerations:

1. How can the instructor assess if students have been successful in meeting the Honors course objectives?

2. How can the instructor guarantee that assessments offer equal opportunities for all students?

3. How can the instructor integrate assessments into a continuous learning cycle?

These considerations prod an instructor to think outside the usual approaches to assessment, opening the door to a new consideration for enhancing student success and their ability to become independent and critical thinkers—the field of self-directed learning. To instructors aware of the strengths of self-directed learning (SDL), the alignment of Honors course objectives and self-directed learner attributes is obvious. Those attributes, as delineated by Guglielmino (1978), include the following:

- exhibits initiative, independence, and persistence in learning;

- accepts responsibility for [personal] learning and views problems as challenges, not obstacles;

- is capable of self-discipline and has a high degree of curiosity;

- has a strong desire to learn or change and is self-confident;

- is able to use basic study skills, organize [personal] time and set an appropriate pace for learning, and to develop a plan for completing work; and,

- enjoys learning and has a tendency to be goal-oriented. (p. 73)

These suggest that the Honors classroom presents an exciting opportunity for exploring self-directed learning, not only in instruction, but also in evaluation and assessment. As stated in Mok (2010), assessment, as it is usually thought of, is in need of change. In particular, she believes there are three principles that should be the basis for designing assessments: "Namely, that assessments should be designed as learning task[s]; that assessment should engage students in the evaluation of [their own and their peers'] performance; and that feedback should be used as feedforward in order to support current and future learning" (p. 14). In order to accomplish this redesign, it is necessary to completely rethink the concept and integrate assessment in such a way that it becomes part of a continuous learning progression, not a terminal evaluation of a specific learning activity or module.

This paper is an exploration of how a continuous learning cycle approach to assessment has been implemented in several Honors College classes at Palm Beach State College. It also describes how such an implementation effort encourages SDL and what

results have been observable from the process. The use of strategies to promote self-direction in learning in the areas of narrative learning, somatic learning, and imagitive learning will be examined. These three areas, with their emphasis on independence, creativity, analysis, goal-setting, organization, and time management and their encouragement of open-ended questions and projects, seem especially well-suited for fostering self-direction in learning.

Narrative Approaches

Most class assignments can be a means of assessment as well as an opportunity for extrapolated learning experiences. Unfortunately, some assignments, by nature or psychological connections, can have a detrimental effect on learning. One assignment almost universally dreaded by students begins with these words: "Write about . . . ." Many students, even those in Honors, fear writing. Whether or not the fear is based in reality, it can have a paralytic effect that interferes with students' abilities to express themselves with clarity and intelligence. Students who are ordinarily articulate in classroom discussions may experience a terrible frustration when confronted with a blank piece of paper or a newly opened computer document. That frustration dams ideas, connections, and creativity. Journal writing provides a simple and viable way to defuse that initial response, to make writing a natural expression medium as normal and acceptable as cell phone usage.

Journaling has been universally extolled as a gateway to self-knowledge (Boud, 2001; Dirkx, 2001; English & Gillen, 2001; Hiemstra, 2001; Jarvis, 2001, Karpiak, 2002; Mezirow & Associates, 1990). Boud (2001) observes that it provides an opportunity to engage students in reflective practice—practice that encourages both self-directed learning and transformative learning. In *Journal Writing as an Adult Learning Tool*, Kerka (2002a) underscored the connection between writing, reflection, and learning. She also addressed approaches to evaluating journals. Suggested methodologies, including coding, were considered, but the initial question she posed remained: What is more important: process or product? Until that is decided, it is almost impossible to make decisions about evaluation. One obvious answer is to transcend the usual division and make product and process identical.

The very act of journaling requires reflection at some level, creating opportunities for transformative learning. Mezirow and Associates (2000) outlined three elements of transformative learning: experience, critical reflection, and development. They divided reflection into three subdivisions: content, process, and premise. It is essential that journaling activity provide an opportunity for multi-layered reflection as a natural function of the activity; that is, the activity should be structured so that what is produced flows as freely as possible—in much the same way as a pre-teen's diary. Tailoring an assignment to fit this parameter is manageable through simplifying requirements. Hiemstra (2001) provided a breakdown of journal types, usages, advantages and limitations. It is possible to find an initial template among these choices and then alter configuration to fit purpose.

In this application, journal writing on its simplest level was introduced in a first-semester composition course. The instructions were straightforward and encouragingly open-ended. The student was responsible for obtaining a bound journal and creating two,

100-word, hand-written entries weekly. Subject matter was neither assigned nor limited—with one exception: if a student was engaged in felonious activities, these were off limits. Otherwise, students were guaranteed confidentiality, with no one but the instructor reading the journals. Vocabulary, spelling, and grammar were not checked. The only thing not allowed was vulgar language. At the end of eight weeks (midterm), the student was simply responsible for 1600 words. The instructor also informed the students that there would be no feedback on the journals, no comments written in the journals.

The journal's primary objective, in this application, was to dissipate students' writing anxiety; the secondary objective was to encourage critical reflection. Although critical reflection was not formally evaluated, it should be noted that while many students began with fairly superficial entries, by the end of the activity almost every student was writing longer, more thoughtful pieces. In fact, a number of the journals far exceeded the required word count, and many students asked if they could continue the project and receive extra credit. The answer was yes.

Despite substantial research demonstrating that feedback is "one of the most powerful factors influencing leaning and achievement" (Mok, 2010, p. 17), feedback, in this case, it was likely to have proven counterproductive. It would have focused the students' attention on the fact of writing and having that writing evaluated instead of encouraging the student to just relax and do it.

The use of narrative writing of a more sophisticated nature, however, can be demonstrated by the following example from Honors World Literature before the Renaissance. In this course there are a number of readings conducive to reflective writing; for example, is the *Confessions* of St. Augustine is especially appropriate. In general, autobiographical writing has a deeply spiritual component (Dirkx, 2001; Dominice, 2000; Foehr & Schiller, 1997; Hiemstra, 2001; Karpiak, 2002; Tisdell, 2003). Its content reflects much more than a narrative, containing art, theory, and philosophy (Karpiak, 2005), and opens the author to the possibility of a transformative learning experience. Consequently, the more self-directed the writing experience is, the more likely transformative learning will take place.

In the Honors class, the *Confessions* was studied at mid-semester. The students read book selections including his learning to speak, the pear tree incident, time in Carthage, conversion, and spiritual evaluation of his mother. In-depth discussions were conducted in which students considered Augustine's motivation, audience, methodology, selection of material, and life experiences that impacted who he was and what he became. At the assignment's completion, students were informed that the final examination would be an individual exercise. Each student was to write a 20-page minimum *Confessions* ala St. Augustine. In it, students were to submit their lives to the same scrutiny that Augustine employed. Although the audience did not have to be God, students were urged to pick someone as audience in order to give the work consistency and focus. Life-defining incidents were to be explored, both positive and negative, in order to gain insight into motivations and choices.

Again, confidentiality and trust were essential. Unless a deep trust was built between instructor and students during the first half of the course, this assignment could be useless. The students would be guarded in what they said and refrain from deeply reflective writing. To further this trust, the instructor of this course, during the discussion

of the *Confessions*, recounted incidents in her own life that were benchmarks. Some of the occurrences were either neutral or positive events, but two of the episodes were negative, and she illustrated how these had given rise to valuable personal insights into herself and her life. By sharing personal events, the instructor further augmented the trust already established. Personal reassurance during the rest of the term was also important. The instructor periodically asked about progress, concerns, and experiences. Any initial trepidation eased as time passed and familiarity with the assignment was established. It was also essential that students be reminded this was not a paper designed as an exploration of writing errors. It was, rather, a paper that investigated who the student had become. It was a unique opportunity to receive course credit for taking the time to consider who they were—something for which their fast-paced lives left them little time.

This assignment/assessment was not introduced without adequate SDL preparation and encouragement throughout the entire term. In addition to in-depth consideration of the *Confessions* prior to making the assignment, students were encouraged throughout class to develop SDL attributes. This was done through structuring open-ended classroom discussions, assigning short reflective papers, and supporting other activities that promoted individual investigation and exploration.

When first examining the *Confessions* assignment, there might be a tendency to view it as an interesting assignment but not as an assessment; however, in the truest sense of the word, it was not only an assessment but also an exercise in self-directed learning. It opened student assessment into self-reflection, potential transformation, and lifelong learning and self-development. Students had been invited to experience these processes from the beginning of class, and the *Confessions* assignment/assessment was a culmination of that learning. It differed from most assessments in one respect only: feedback. Because of the powerful, personal material elicited and the remarkable insights recorded in the individual pieces, it would have been not only inappropriate but counterproductive to comment on the work. The *Confessions* were private—the instructor was simply allowed to read them. The contract for the grade was fulfilled in the writing.

This final class assessment has been in use each Fall term for the past eight years. The resultant works, without exception, have been moving testaments to triumph and failure; sadness and joy; struggle and loss; and, most of all, to survival and determination, the brave beauty that is the best part of humanity.

Somatic Approaches

Another approach to SDL can be made through somatic learning. Somatic or embodied learning, as defined by Merriam, Caffarella, and Baumgartner (2007),

> is most often linked to experiential learning in the sense that we *learn* in the experience. Somatic knowing, as is also true of spiritual and narrative knowing, is connected to adult learning through meaning-making. Attending to these noncognitive dimensions of knowing can bring greater understanding to our lives; they enable us to make meaning of our everyday experiences. Learning in the experience is immediate, physical, emotional. (p. 192)

Kerka (2002b) envisioned somatic learning as a holistic approach that seeks to correct the western tendency to separate body and mind. Somatic learning integrates the body—senses, perception, and movement—into the learning experience. Also pertinent is Lawrence's (2005) exploration of the implications of multiple intelligences and indigenous knowledge when leading students to a deeper understanding of self, world, and his discussion of the implementation of art as a way of accessing and uncovering hidden knowledge in students.

In two Honors classes, Honors World Literature before the Renaissance and Honors English Literature before 1800, somatic learning was drawn upon in a unique manner. The embodiment that was required involved a minimum of actual physical movement but a maximum of intellectual, spiritual, and emotional identification. It was an approach leaning heavily on internal transformation, which, in turn, informed physical presence; and, the mutual change was initiated by artistic experience. In these class assignments, the insights provided both Kerka and Lawrence were important. For Honors English Literature before 1800, students were asked to rewrite Chaucer's *Canterbury Tales*, setting it in a different time and peopling it with totally different pilgrims. For this project, the class was divided into groups of three. After self-selecting membership groups, students were informed of the assignment's general outline but assured that creative construction of the work would be left completely to them. Once students understood the assignment and requirements, they met as a class and decided in which era to set the new pilgrimage. The consensus was to place the work in the present. Although the instructor provided a site with web links to Canterbury, both town and cathedral, bus schedules, train schedules, and airlines, the students were left to figure out where they would begin their pilgrimage and how they would make it last long enough for everyone to tell tales.

Once basic structure was approved, students broke into small groups and decided what members would be in terms of pilgrim identities. For example, one group decided there would be a psychiatrist, the psychiatrist's patient, and the patient's hallucination. Another group chose to come from a Latin American country and be private school students in a religious club. The young woman chose to be a true member of the club, a member with gently pious bearing. One young man chose as his character a holier-than-thou, nerdy prig. The third student's character was a club member only because he liked the girl and was going on the pilgrimage to get a date. Another group was an environmentalist, an industrialist, and a Congresswoman. After all roles were decided, the research and writing began. Each student was charged with contributing three separate pieces: a section on the chosen character to the General Prologue, a complete personal prologue that preceded the character's tale, and, of course, a tale appropriate to the character. Web links to several Tale databases were also provided but most students chose to make up their own tales. To make the experience more authentic, students were encouraged to make the work rhyme.

The completed work, entitled *The Canterbury Project*, was presented on final examination day. Students acted out their appropriate parts. It was astounding—moving, funny, exhilarating and surprising. The overall experience for students and instructor, alike, was gratifying and transformative. It was a fine example of self-directed learning rooted in somatic learning supported by an artistic creation.

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Following the same somatic philosophies outlined for the Canterbury assignment and also incorporating Brockman's (2001) position that a somatic epistemology can provide a moral foundation to consider cultural goods and cultural evils, the Honors World Literature before the Renaissance class members each were given the task of analyzing and rewriting a canto from Dante's *Divine Comedy*. The instructions were simple: Each student was to pick a canto, become Dante, chose a suitable guide, re-people the circle or terrace with appropriate sinners, repentants, or saints from the modern era, add explanatory footnotes if necessary, make it 33 lines long, and make it rhyme *terza rima* style. Although the whole could not really be assembled into a coherent piece since the individual interpretations of Dante and his guide precluded that, the class enjoyed hearing each individual's canto read. And, strangely enough, although unplanned, a sort of "class Dantean journey" emerged.

Imagitive Approaches

Embracing multiple prototypes, Honors instructors encourage experimentation with unconventional techniques to assist the learning process. When teaching literature, instructors introduce Honors students to a variety of genres. The "Dantean journey" complements another creative assignment introduced as a learning cycle continuation, one in which students explored, experimented, and employed their knowledge while creating new and dynamic art works. Garrison (1992) notes that meaningful learning occurs when learners assume shared responsibility for their educational process. Instructors can use student-generated visuals to motivate students to become actively involved in the learning process. This process can be instrumental in promoting SDL, modeling it, creating a positive environment, introducing dramatic experiences and matching experiences to student demands (Gibbons, 2008). The magnitude of the instructor's importance in fostering students' self-direction in learning cannot be overstated. Gibbons suggests that when students' self-directed learning efforts bring success, that success is a powerful motivator for continued learning. The imagitive approach integrates SDL and motivation that leads to success. Defined, the imagitive approach is a creative process that encourages students to incorporate visual images as an expression of their literal understanding of literature, especially poetry.

Predictably, poetry's compressed language poses difficulties for many Honors students who find some poems too abstract and complex. As a result, countless students struggle to understand themes, patterns, key concepts, metaphors, and imagery. The incorporation of student-generated visuals can minimize students' perplexity. Visuals encourage students to find their inner voices and be creative while using their critical thinking skills. Giving students freedom to create an image for interpreting poetry is an innovative way to engage and assess Honors students, while at the same time promoting self-direction in learning. The assignment/assessment begins a transformative process that engages the class and affects the learning outcomes, facilitating understanding and appreciation.

Instructors may question whether visuals can be utilized effectively beyond illustrative purposes. First, note that the visuals used for this assignment were not downloaded Internet images, but original visuals that students constructed and

incorporated in the literary discussion. Research indicates that images integrated in the classroom deepen understanding and engage students through interpretation, argumentation and analysis (Little & Felten, 2010), producing results for students and teachers (Stokes, 2007).

When integrating visuals into teaching poetry, it is important not to restrict students to a single visual medium. Students should be encouraged to utilize a variety of illustrations, including posters, paintings, drawings, power points, sculptures, personal photos, or objects. By creating their own visuals, students can make meaning out of poetry by combining their knowledge and experience with imagery, motifs and symbols found within a specific poem. The process begins by allowing students to select a poem. Students are strongly discouraged from going on-line and reading literary commentaries from sources such as Sparknotes.com. Instead, they are advised to read biographical sketches and to review the social, political, and cultural climate that coincides with the poem's time era. The literary anthology selected for the course in this example provided excellent biographical sketches as well as pertinent historical data, but as self-directed learners, students were expected to rely also on their on their own research, creativity, and intuition. As students read to understand the poem's interior meaning, they mentally recorded the mood, feeling or thoughts the poem conjured within. The objective was to create a concrete visual image that emphasized a single literary feature or multiple elements.

The student was then expected to unify the visual image with the poetry analysis. As a class activity, students presented their poems and displayed their visuals. Each presenter engaged the class by a reading derived from the poem. Afterwards, the presenter facilitated an in-depth discussion on the poetic insights. While they were given complete freedom in choosing and developing their visual imagery, they were provided with an instructional rubric for developing the presentation (Figure 1). The rubric offered clear guidelines, which served as a tool to contribute to the presentation's quality in addition to allaying anxiety about what to include.

Poetry Presentation Rubric

Questions	Check Yes or No
Is the visual original?	___Yes ___No
Did the visual connect to theme of presentation?	___Yes ___No
Was the visual prominently displayed?	___Yes ___No
Was the theme of poem stated?	___Yes ___No
Was the poem paraphrased?	___Yes ___No
Were figures of speech used?	___Yes ___No
Was a central, controlling image identified?	___Yes ___No
Were lines quoted from the poem?	___Yes ___No
Did the audience ask questions or comment at end of the presentation?	___Yes ___No
Did the student make eye contact?	___Yes ___No
Instructor's Comments:	Grade

Figure 1. Sample rubric.

The presentations engaged multiple learning styles—visual, auditory, kinesthetic, and tactile, as students learned from each other. Some students were bewildered initially, especially those who labeled themselves uncreative. Humans often approach new challenges "with fear rather than mystery and wonder" (Costa & Kallick, 2004, p. 31). To alleviate the fear, this creative assignment gave students academic freedom to explore artistic alternatives. Inevitably, intelligent feedback and rich discourse ensued among peers, even timid ones, making the assignment inspiring and meaningful. This assignment generated enthusiasm while simultaneously challenging students to step outside the box.

Infusing visuals in a poetry assignment did more than help students meet learning objectives. The creation and presentation of an original visual analysis also helped students become more adept self-directed learners:
- Making choices while working independently and interdependently throughout the process;
- Adding depth to what was learned from multiple interpretations;
- Building confidence;
- Deepening engagement;
- Connecting with the human factor in course material;
- Improving verbal communication skills;
- Learning from peers who shared their efforts, insights, and creations;
- Sparking new understandings of the poetry; and
- Employing their strengths and hidden talents.

This assignment also helped students realize their capacity to be original critical thinkers. Reflecting on their learning experiences, many students reported feeling initially overwhelmed by the requirements of this assignment. Once fear abated, they discovered that multiple readings of the poem provided clarity. Most students felt the greatest challenge was to create a visual that complemented their understanding of the poem. They discovered that literal clarity sparked creativity and confidence; thus, pride in their artistic work helped alleviate the fear of public speaking. Like most students, they anxiously awaited feedback. Unlike class assignments that were assessed using a question-answer format, this assignment introduced an additional way to discover what students know and how they think; therefore, in assessing this assignment, knowledge acquisition was not as important as knowledge production. Students produced a product and were rewarded.

The Honors Council objectives, delineated earlier, were designed to help students not only with their oral and written communication skills but also to help students embrace their independence while becoming better critical thinkers and to become skilled at recognizing and understanding the methods scholars use to think about problems, formulate theories, conduct research, and reach conclusions. This assignment, infusing visuals in poetry critiques, encompassed aspects of all five objectives. Most remarkable was that one work of art inspired the creation of another work of art.

Discussion

The methods of learning and assessment discussed are only a few samples of the use of innovative learning activities and nontraditional approaches to assessment that can

foster student reflection, self-direction in learning, and potential transformation, the beginning of a potentially productive investigation of SDL and its connection to Honors courses and Honors students.

In the classes discussed, the approaches to course material were shifted from instructor to student. Rather than listening to a professor's humdrum lecture or witnessing a circuitous discussion, students undertook novel approaches that created excitement and participation. Evoked excitement stemmed from truly personal student involvement: writing journals, acting out rewritten *Canterbury Tales,* and presenting visual poetic interpretative critiques. An added bonus to the enhanced academic experiences was the incorporation of creative abilities, allowing both professor and students to celebrate individual talents. These approaches are not limited to these singular course experiences. They are available, with appropriate specific curriculum restructuring, to any instructor with the determination to encourage SDL in the classroom.

In an attempt to further promote self-directed learning and build student confidence in those classes already discussed, students could be engaged in the actual construction of assessment rubrics. This hands-on experience would give students the opportunity to create their own assessment instrument. For example, in the imagitive approach, after the instructor provides the students with a thorough explanation of the project, including its basis and rationale, they could be asked to produce their own rubric. Andrade (2000) notes that rubrics are valuable because they support the development of sophisticated thinking skills. Student development of the rubric could enhance the impact on thinking skills and add the dimension of promoting SDL. Each student could write five items. Taking their lists, students could form groups of three and be asked to consolidate them into one list of eight items. After consolidation is complete, the class as a whole could post the lists and then vote on ten items that will comprise the grading rubric to assess the poetry assignment. Not only will the students have more ownership in the project but, in addition, it will be interesting to note the variance in a student-generated evaluation instrument compared with that of the professor's rubric. Will the students emphasize the creative, abstract aspects more?

Another area that invites further research includes SDL indicator studies. Is involvement in assignments and assessments such as those described in this article associated with measurable increases in readiness for self-directed learning? In the classes described, the SDL indicator instrument (Guglielmino, 1978) could be given at the beginning and end of the courses to see if there is any change in how the students perceive themselves. Along these same lines, giving the 4MAT (McCarthy & McCarthy, 2006) or some similar instrument in conjunction with the SDL indicator might provide useful insights into whether or not there is an identifiable connection between learning styles and SDL in this population of Honors students. If there appears to be a relationship among these factors, the studies could be widened to include other campuses, other professors, and other Honors courses.

Although most instructors come to Honors teaching without specific training, that should not limit them in providing an Honors education for students. Reviewing various techniques that promote self-directed learning and incorporating those techniques into Honors classrooms should be an integral part of instructional process. Implementation of those techniques into various methods of evaluation and assessment promotes self-

directed learning in students who do not exhibit it, and further develops self-directed learning attributes in those who already embrace it.

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