International Journal of Self-Directed Learning®

Volume 10, Number 1
Spring 2013

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

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International Journal of Self-Directed Learning
7339 Reserve Creek Drive, Port Saint Lucie, FL 34986
issdl.sdlglobal@gmail.com

Cover design by Gabrielle Consulting

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Preface

This journal focuses on reflection, a fitting topic, since this issue begins the tenth year of the existence of the *International Journal of Self-Directed Learning*. In its short lifespan, the *IJSDL* has been gifted with the services of an outstanding group of professionals who volunteer their time to review and comment on submissions. A number of authors have expressed their gratitude for the careful reviews and valuable comments their work has received. Hats off, with deep thanks, to the members of the *IJSDL* Editorial Board, listed on the previous page.

The work of our dedicated editorial board and the quality of articles in the journal has resulted in the IJSDL being listed in Cabell's Directories of Publishing Opportunities as a "commendable journal" in three areas:

- Educational Technology and Library Science
- Educational Curriculum and Methods
- Education Psychology and Administration

The reflection continues. In the first article in this issue, Tanya McCarthy, a senior lecturer at Osaka Institute of Technology in Japan, reports on efforts to deepen and expand students' reflections on their learning. Recounting an admirable research-to-practice paradigm, she describes an approach to a 15-week self-directed learning course designed to improve language learners' cognitive and metacognitive abilities, then details and analyzes students' responses to an increased emphasis on levels of reflection on their learning.

Next, Roger Hiemstra, active in the Symposium and the International Society for Self-Directed Learning since their earliest beginnings and author of one of the most-frequented websites on SDL, shares a reflection on professional practice in adult education that has much broader applicability. Hiemstra offers an analysis of the reasons most instruction remains teacher-directed despite all we have learned over the years about the benefits of fostering students' self-direction. He incorporates comments and suggestions solicited from twelve experienced colleagues and ends with suggestions for wider advocacy of SDL.

Finally, Shelley Payne and colleagues, reflecting on the possible contribution of the final clinical internship to the development of self-directed learning readiness and self-determination among rehabilitation professionals, designed a study to examine that topic and report their findings here.

Lucy Madsen Guglielmino, Editor

International Journal of Self-Directed Learning

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CONTENTS

LEVELS OF REFLECTION: THE MIRROR, THE MICROSCOPE, AND THE BINOCULARS

Tanya McCarthy

Abstract

This paper analyzes the written reflections of 18 freshman students in a self-directed learning course. In the pilot course, it was found that the depth of students' reflections was limited to mainly short answers or surface reflections. Students reported that they found it difficult to understand the concept of reflecting on learning. A new course that placed more emphasis on various levels of reflection was designed with the specific aim of helping students to reflect more deeply on their learning so that they could be more aware of *why* they were doing what they were doing and see their accomplishments. The course culminated in a final 500-word report in which the students were asked to reflect on what they learned about themselves (the mirror), strengths and weaknesses they identified in their learning (the microscope) and how this connected to their life outside the classroom and into the future (the binoculars).

Educational reform in Japanese tertiary institutions has been a vital topic over the years as higher degree institutions are expected to develop human resources with a wide range of essential knowledge, expertise, and intelligence to support social development (MEXT, 2012a). Universities have therefore been implementing reforms, challenging themselves to keep abreast of the changing times. One innovation, which took place at the institution in which this research took place, was the introduction of a credit-bearing 15-week self-directed learning course designed to improve language learners' cognitive and metacognitive abilities and to see if this development would have an impact on English language proficiency levels. This course was seen as innovative due to the complete focus on the learner as opposed to the traditional Japanese language classroom environment in which knowledge was transmitted in a largely teacher-directed, instructional approach. Typical educational philosophies in Japan tend to place emphasis on translation techniques and "teaching-to-the-test" approaches. Most students entering university come from a background of being taught to pass tests through memorization of grammar rules, with less focus on communicative skills or personal or meta/cognitive development. The self-directed style of learning proposed for this class was thus quite different; it was aligned with the educational philosophies of the Western cultures from which the self-directed learning framework sprang: the less structured approach, knowledge sharing practices and classroom goals motivated from the learner's point of

view. However, as a focus on learners' autonomous development was one of the underlying philosophies of the curriculum at this university, courses encouraging good self-directed learning practices were encouraged.

Previously, the self-directed course ran as part of the voluntary learning advisory services over a period of eight weeks. It was, however, recognized that lower-proficiency level students in particular were having difficulties completing the course without the support of a teacher or wider learning community, and the drop-out rate among these students remained at around 60-70% each year. The opportunity to offer credit was seen as a means through which (a) students would be more motivated to complete the course; and (b) students would be able to interact more closely with peers and the teacher in their self-directed endeavors. It also marked a significant change in the attitude of the university in recognizing the importance of fostering self-directed learning skills in students as a credit-bearing course within the curriculum (rather than a class activity or a voluntary service offered to students in the center), which would provide them with the ability to "comprehensively utilize the knowledge, skills, behaviors and other experience acquired to date to successfully apply such experience to solving new issues" (MEXT 2012b, p. 14).

This study thus reports on methods employed in this EFL (English as a Foreign Language) language classroom in a Japanese tertiary institution to facilitate the development of 18 freshman students as they went through the process of trying to become more critically reflective about their learning and on their reactions to this experience. Freshman students, both male and female, were currently studying a second language (Portuguese or Indonesian) as their major course of study with the aim of becoming translators or getting a job in a trading company in the future. Unfortunately, focusing on their language major resulted in attrition in their English language studies. English was a mandatory class for all freshman students at the university; however, as English was one of the students' weaker subject areas in this department, they were having difficulties maintaining an appropriate level in their Freshman English classes. The new course was thus designed, with the support of the faculty, to help students to improve their English language proficiency by focusing on developmental skills. The class was conducted mainly in English, with Japanese allowed, when necessary, for student/student reflective discussions. Writing however, was the major tool of communication through a weekly diary, as students were unaccustomed to verbally communicating with others in English and more familiar with translating their thoughts on paper from Japanese to English. In particular, the course focused on the central role reflection took in helping students to increase their cognitive and metacognitive awareness and to gain more control over their language learning.

Metacognition and Reflection in Self-Directed Learning

Recent research literature on the self-directed language learning process in the self-access context has focused on the various kinds of support that can be provided to facilitate learning, such as language advising, language advising tools, self-access resources, and learning strategies (see for example, Gardner, 2007; Lamb and Reinders, 2006; Karlsson, Kjisik and Nordlund, 2007; Kato and Yamashita, 2008; Noguchi and McCarthy, 2010; Rubin, 2007; Yamaguchi et al., 2012). At the center of these studies is

the role reflection plays in helping students to become successful language learners and fostering skill development. Reflection has been defined in various ways (see Appendix A); however, most of the definitions point to increased metacognitive awareness as a key point in the development of the learner. Metacognition is referred to in this paper as a higher order thinking process, which involves the student actively taking control over his or her cognitive processes. In other words, when students reflect on a learning action they have recently performed, they are consciously revisiting the event. This is expected to result in more effective learning before proceeding to the next stage of learning.

According to Wenden (2001), metacognitive knowledge is essential for successful learning because students' understanding of themselves, the tasks they engage in, and the strategies available to them directly impact on all their decisions about learning; that is, "general skills through which learners manage, direct, regulate, guide their learning, i.e., planning, monitoring, and evaluation" (Wenden, 1998, p. 519). Zimmerman (1998) describes learning as "a proactive activity, requiring self-initiated motivational and behavioural processes as well as metacognitive ones" (p. 1). Schön (1987) states that the reflective thinker relies on all available resources to find relevant needed information and opinions in order to come to a personal understanding of a situation. In general then, the research literature seems to endorse that individuals demonstrating higher levels of metocognitive awareness and self-directed learning readiness are more likely to become successful independent learners (Knowles, 1990).

Thus, for the researcher, reflection and metacognition seemed to work in conjunction with the other and became the primary components of the self-directed learning course as students reflected on their personal development as well as their learning progress. A secondary component was to help students contextualize reflective practices to future endeavors beyond university life. The course therefore required students to be attuned to themselves as individuals: to understand their current strengths and weaknesses and use this knowledge to effectively transition between classroom experiences and real-life experiences. An initial analysis of student reflections (cycle 1) helped to reveal the areas of the course that most benefitted students. Insights from this process were used in the redevelopment of the course (cycle 2) to further enhance skill development and reflective practices. Later analysis examined the levels of reflections students were able to achieve after the changes were implemented.

Course Design

As part of the self-directed learning course, students were required to reflect on their language learning each week. This was a core element of the course design. In order to guide the students effectively through the self-directed learning course and increase their metacognitive competencies, the following aims of the course were proposed for the teacher/advisor:

- To identify specific components of reflective practices that would help students to develop deeper, more critical reflective skills (as opposed to the surface reflections which had been a problem in earlier courses)

- To introduce specific terminology in order to help improve students' ability to communicate about their learning at a higher level

- To try to understand student readiness for self-directed learning and monitor students that were having difficulties
- To develop a stronger community of practice between classmates by encouraging sharing of knowledge and learning strategies
- To encourage students to make wider connections between what was learned in class and their life outside the classroom

After fifteen weeks, the researcher examined the student reflections to gain a clearer picture of student development.

Cycle 1: The Pilot Course

Materials for the 15-week course were initially borrowed from an 8-week self-study course and adapted for the classroom. The mode of reflection in the 8-week course was mainly written reflections in the form of a reflective diary and one-to-one meetings with the learning advisor (see Noguchi and McCarthy, 2010, for more details). Like the 8-week course, the 15-week course culminated in a 500-word report in which students were asked to reflect on their improved areas of learning and future goals.

Table 1 is a breakdown of the various modes of reflection used in the pilot course. Most noticeable was the low level of student/student interaction, as the main mode of reflection was the written reflections students were asked to complete for homework. Two salient points from students on analysis of end of semester surveys of the pilot course were (a) the benefit of the one-to-one sessions with the learning advisor to discuss learning goals, plan actions, and discuss areas of success; and (b) students' preference for group reflections and knowledge-sharing practices rather than individual guided written reflections (see McCarthy, 2011, for the full report). Thus, in Cycle 2, the course was redesigned to build in more interactive practices and verbal reflection. This meant introducing specific vocabulary to help students to participate effectively in discussions. Whereas they could write reflections, as is typical of many Japanese students, they found it more challenging to engage in discussions about their learning.

Table 1. *The Pilot Course (Cycle 1)*

Weeks 1-6	Weeks 7 & 14	Weeks 8-13	Week 15
• Individual written reflections completed for homework on specific areas of learning such as goal-setting, time-management and learning strategies	• Week 7: One-to-one meeting to discuss learning plan: Learning goal; learning resources; self-evaluation method • Week 14: One-to-one meeting to discuss progress in 4 areas: Personal growth; language strengths and weaknesses; choice of resources	• Shared reflections within same groups during class time for 10 minutes • Individual written reflections completed for homework	• 500-word guided reflective report focusing on students' improvements in their learning and reflective abilities over 15 weeks. Guided questions: – Talk about your choices of goals, resources, strategies and time-management. – What are you satisfied with? – What do you need to improve? – What action will you take to improve this in the future?

Cycle 2: The Redesigned Course

Three major areas of change focused on were the in-class shared reflective discussions, weekly reflections, and the guided questions for the final reflective report. In Table 2, the additions and replacements are italicized.

Table 2. *The Redesigned Course (Cycle 2)*

Weeks 1-6	Weeks 7 & 14	Weeks 8-13	Week 15
• Individual written reflections completed at the end of class or for homework on specific areas of learning such as goal-setting, time-management and learning strategies • *Shared reflections in different groups during class time for 20 minutes* • *Quick 5-minute written reflection completed at the end of class asking students what they had learned in class that day*	• Week 7: One-to-one meeting to discuss learning plan: Learning goal; learning resources; self-evaluation method • Week 14: One-to-one meeting to discuss progress in 4 areas: Personal growth; language strengths and weaknesses; choice of resources (Unchanged)	• *Shared reflections in different groups during class time for 20 minutes* • Individual written reflections completed for homework • *Stronger self-monitoring practices:* – *Selecting appropriate goals* – *Planning action* – *Selecting appropriate resources* – *Implementing the plan* – *Monitoring choices and actions* – *Evaluating learning and action plan*	• 500-word guided reflective report focusing on students' improvements in their learning and reflective abilities over 15 weeks. • *Guided questions:* – *(What?) What did you notice about yourself as a language learner?* – *(So what?) Talk about your choices of goals, resources, strategies and time-management.* ➢ *What did you think you did well in your learning?* ➢ *Choose one area from above and reflect on the best way you can improve this area.* – *(Now what?) Which of the skills you learned do you think you can use in your other classes and/or in your life after university*?

Weeks 1-6. It was decided to increase the time students spent in reflective discussions during class. Shared reflections were added earlier in the course during weeks 1-6 and the time increased to twenty minutes. Whereas in the first course, the teacher had students remain in groups connected to their language learning goals, in the second course, the teacher had the students change groups each week regardless of learning goals. This helped discussions to remain "fresh" each week and students enjoyed learning about strategies in other language skills. A quick in-class 5-minute written reflection was added to the course in order for students to get into an early practice of reflecting on their learning and to learn how to put their thoughts into words. This reflection was done during the last 10 minutes of class. Students were told not to use dictionaries and to simply use any words that could get their message across.

Weeks 7 and 14. There were no changes to weeks 7 and 14.

Weeks 8-13. There were two main changes during the second half of the course. As mentioned previously, discussion time was increased to 20 minutes. In some cases, the teacher allowed discussions to continue for 30 minutes if students were actively engaged in discussions. As the semester progressed, students were able to speak in greater length as their reflective practices increased. Stronger self-monitoring practices were also introduced as part of the in-class discussions to help students monitor their progress and to monitor time spent on their learning (Appendix B). One of the class requirements was that students do at least 60 minutes of learning during the self-study portion of the course. A problem faced in the pilot course was that the students reported finding it difficult to complete the 2-3 hours required weekly work load for the course due to other commitments such as having to submit numerous reports and homework in their other classes, their part-time job, and maintaining good attendance in their club activities, which was an important part of university life. Added to this, many students were unaccustomed to being responsible to meet deadlines for the self-directed course without weekly reminders from the teacher. A problem faced by teachers across all departments was the submission of late work; therefore, part of student assessment for this course was for students to show that they could effectively organize and manage their time without being given constant reminders by the teacher that a deadline was approaching. Students were thus expected to complete and record in their diary a specific amount of work each week and then submit it to a drop box on a specific date. Failure to do so, without communicating with the teacher, resulted in points being docked from their final grade.. The self-monitoring also helped to remind students of the purpose of the course which was for the students to see their development.

Week 15. Guided questions in the reflective report were changed to focus the student more specifically on changes they noticed in themselves and on how skills learned could be transferred to a new situation:

- What did you notice about yourself as a language learner?
- Which of the skills you learned do you think you can use in your other classes and/or in your life after university?

Modes of Reflection

Dewey (1997) writes that it is the teacher's responsibility to structure and organize a series of experiences that positively influence each individual's potential future experiences. By incorporating structured and unstructured reflective activities into the course design (see Figure 1), it was possible to encourage students to engage more fully in their learning and achieve deeper levels of reflection.

Kolb's (1984) design of the "Experiential Learning Cycle" proposed a framework that examined the details of the individual's experience and moved gradually toward critical reflection, interpretation of events, and then creating and implementing an action plan. Driscoll's (1994, 2000, 2007) "The What" model of structured reflection, drawing on Kolb's framework, presented three simple questions that formed the basis of his model:

- What? (Concrete or descriptive facts)

- So what? (observations, reflections and interpretation of facts)
- Now what? (application of insights to new situations)

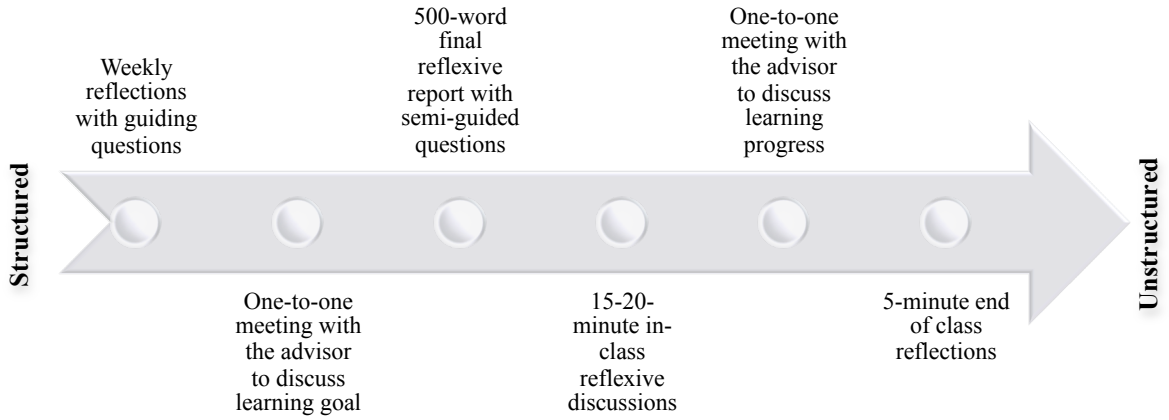


Figure 1. Modes of reflection on a continuum from structured to unstructured reflections.

The 500-word final reflective report was designed using Driscoll's (1994, 2000, 2007) model to help students achieve deeper and more meaningful levels of reflection that could lead to the formulation of an appropriate and relevant action plan for the future. Cooper's (1997) three lenses of reflection (the mirror, the microscope and the binoculars) were then attached to Driscoll's model in this research in order to help students gain a more visual understanding of the levels of reflection expected from them at the end of the course: "*What*?" became the mirror which reflected the students' feelings about themselves – their personal strengths, weaknesses and challenges overcome; "*So what*?" became the microscope which described in detail students' learning experiences, what they learned from this experience and specific actions they could take in the future to further contribute to their development; and "*Now what*?" became the binoculars which revealed a connection to transferable skills students could employ in future practices in a different learning environment. In past courses, students were asked reflective questions, but it was found that having three simple reflective questions, illustrated with visual aids and used throughout the course, stimulated deeper and more meaningful levels of reflection. Students showing all three levels of reflection in their final report were seen as having achieved the greatest level of development.

Extracts illustrating the personal and metacognitive growth of one particular student, Jun[1] are presented in the next section along with their relationship to Driscoll's (1994, 2000, 2007) and Cooper's (1997) models. Although an examination of the data revealed some form of development in all students in their reflective reports, Jun's report was selected as a result of the significant levels of awareness shown in both his personal and (meta)cognitive development upon completing the course. Coming out of a learning

[1] Pseudonym employed

situation in which he had to complete specific work selected by a teacher and being frustrated with his level of English language learning, Jun seemed to have relished the challenge of setting his own goals, sharing his newfound knowledge and skills with others and learning how to reframe his plan to meet new learning goals. His ability to recognize his own strengths and weaknesses in himself (the mirror), specific areas of his learning (the microscope) and his understanding of how he could transfer these skills to future endeavors (the binoculars) is evident in his reflective report below.

The Mirror

Guided questions asked in the report to trigger a more reflective response were:

- What are my strengths and weaknesses?
- What surprised me about myself?

The visual aid of a figure looking in a mirror accompanied these questions. The figure was purposely portrayed as non-gender-specific.

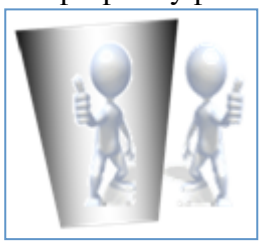


Figure 2. The mirror as a visual aid for learner reflection.

Illustrative example from Jun's final reflective report (The mirror)

> This class helps me improve my English skills. Thanks to it, I have get into the habit of making [an appointment at the] Practice Center, so I think I have improved my pronounce and vocabulary of daily conversation. I felt about myself that I am ambitious but I am a lazy person. Because I say I want to improve my English, but I don't not make own my plan. Though I made plan, I did not carry out well. So I am a lazy and ambitious language learner.

In Driscoll's (1994, 2000, 2007) model, the "What?" referred to a purposeful reflection on select aspects of an experience. In this study, it described the student's personal development. That is, how the learning experience during the 15-week course helped to give insight into specific aspects of the person. For Jun, his critical realization occurred in his awareness of his setting unreachable goals, resulting in an inability to create an effective plan to achieve these goals. This particular critical moment of self-reflection led to a deeper awareness of his need to implement a plan before carrying out a task.

The Microscope

Guided questions asked in the report to trigger a more reflective response were:

- What did I do well?
- What do I need to improve?
- How have I improved from point A to point B?

The visual aid that accompanied these questions was a figure with head bent over a microscope.

Figure 3. The microscope as a visual aid for learner reflection.

Illustrative example from Jun's final reflective report (The microscope)

> I did propose my opinions, and communicate actively. In this term, I often could not understand what teacher said, so in next term I will focus on what they say. I learned speaking to is the start point of communication in every scene. So in next term, too, I want to speak to some teacher in the SALC to become friend. I was happy to become friends with a lot of teachers in SALC through SALC learning.
>
> I lack in to make plan. Because, sometimes I could not make reservation intentionally, then I could not do my tasks. To improve it, I have an idea to make weekly schedule. It reminds me of doing tasks or preparing something. I have an idea to improve making idea. When a day begins, make time schedule of plan to do everything. And I must carry out. I write on paper. At first I did not do learning balance well because I was confused.
>
> I learned that it is important not only speaking well, but also trying to speak actively. In every class, it is important. I think "No speaking to, No start anything". When I become 2nd grades, I want to try to speak to actively. After graduating, it becomes more important. Not being shy I am good at speaking to foreigner. I will improve this strongpoint more.

Driscoll's (1994, 2000, 2007) "So what?" described the student's analysis of the experience through observations, reflections and interpretation of facts. In effect, the student considered specific points of learning that arose through the process of reflection. Through careful analysis, each small experience (failures and successes) expanded to impact the learning experience as a whole. Jun became aware that his lack of good time-management skills affected his ability to effectively implement a learning plan. He further recognized the importance of being more proactive in his learning to improve his communication skills. These individual insights can be considered to be two critical incidents in his self-analysis of his learning on a deeper level.

The Binoculars

Guided questions asked in the report to trigger a more reflective response were:

- What are my goals for my future?
- What skills will help me in my university career and beyond?

The visual aid that accompanied these questions was the figure of an individual looking outward with binoculars.

Figure 4. The binoculars as a visual aid for learner reflection.

Illustrative example from Jun's final reflective report (The binoculars)

> In the future, I have not decided my dream yet. But I want to use English in my job. After finishing this class, I do not know I can make plan, carry out, study vocabulary, and review them. But I need to do. I must do it to improve my English. I want to make sure that I get into the habit things I have done in SALC learning.

In the final component in Driscoll's (1994, 2000, 2007) cycle, "Now what?" the learner considered how to apply new insights to new situations, and reflected on concrete actions that could be utilized in future experiences. The binoculars enabled the learner to envision future developments based on the insights gained throughout the course. Jun's proposition to modify his future learning experiences was to maintain a habit of making a plan before an event in order to be more successful. His development as a learner was evident in his solution of how to transfer specific aspects of knowledge learned in the course to similar situations in the future.

Data Analysis

A qualitative analysis of 18 students' final reflective reports was done after 15 weeks of self-directed learning. Reports were typically 400-500 words in length. A constant-comparison approach was used to identify commonalities between students' reflections, particularly in areas of personal growth (the mirror), metacognitive development on their method of learning (the microscope) and their awareness of how these skills could be used in their future (the binoculars). Each report was examined and emergent themes placed into categories. Students in general, commented on the benefits of reflecting on their learning process, especially with regard to learning strategies. Trying to reflect on changes in themselves was confusing for many students, however, as they had never been asked to consider their own values and beliefs in the learning process. Further, connecting their new knowledge to their future proved to be a challenge for those students who had no clear vision of what they would be doing after graduation. As such, reflective reports had mixed results, with most students reflecting on progress mainly in their language learning and less on their personal growth and how they would transfer knowledge learned to other situations.

Findings

The categories that emerged from the analysis were:

- increased metacognitive awareness of planning and reflecting on learning needs,
- increased interpersonal skills with other language learners,
- increased motivation and self-confidence in language learning,
- increased English ability in writing and speaking skills, and
- increased knowledge of learning resources and services offered in the center.

As improving English writing and speaking skills and increased knowledge of the center were not the central aims of fostering reflective practices in the classroom, the main points which this paper explores are the first three categories. A discussion of these three main points follows.

Increased Metacognitive Awareness

The self-directed learning course was an effective means of helping students to critically examine their learning through ongoing written and verbal reflection. Being metacognitively aware referred specifically to students being cognizant of how they were learning and decisions they had made. In particular, students showed a deep awareness of their learning strengths and weaknesses in five areas: time-management, learning strategies, selecting appropriate resources, goal-setting and making an action plan for their learning. Sample quotes illustrating those areas are listed in Table 3.

Table 3. *Students' Metacognitive Awareness Through Reflection-on-Action: The Microscope*

	Metacognitive awareness of…	Student Reflection
The microscope	**Time-management**	"I had to organize my time better and make a specific study plan to not waste my time."
	Learning strategies	"I noticed review is most important for me. Because, I didn't review when I was Junior high school, high school, and primary school student. So, I always forget everything…I know it is my bad point…I felt keenly when I did review."
	Selecting resources	"The action I will do to improve this area is to try any resources and different resources until I can find the best one."
	Goal-setting	"I think that goal-setting will help me the most in the future…in Indonesian class, I have a goal which I want to be able to chat with Indonesian until graduation, so I am serious about learning."
	Planning learning	"I lack in to make plan. Because, sometimes I could not make reservation intentionally, then I could not do my tasks. To improve it, I have an idea to make weekly schedule…And I must carry out."

The categories of time-management and learning strategies accounted for the highest levels of metacognitive awareness. Students were able to increase knowledge of how to manage their time more effectively to meet their responsibilities and improved in their understanding of how to use and/or modify particular strategies to improve their learning performance and problem-solving capabilities. One of the major challenges faced in the course was students handing in late work or not completing the required amount of work in the self-study component of the course. It was thus seen as a success that students considered time-management as the area in which they most benefitted. Students further had difficulty balancing their strategies for learning between input and output. That is, students were encouraged to not only gain new knowledge (input) but to also apply this knowledge (output) through speaking or writing in order to obtain a clearer picture of their learning. Most students at the beginning of the course were strong in either one area or the other (mostly input) and showed significant progress in balancing both components as the course came to an end. An increased awareness of goal-setting and selection of resources demonstrated that students had gained insight into how to narrow down a larger goal and set a specific target; and that they had found appropriate tools (or resources) to help them to attain this goal. In the beginning of the course students seemed to have clear goals, but they lacked the knowledge of how to break down goals into more manageable steps. Further, students typically selected learning materials that they were familiar with rather than resources that connected to their learning target. Therefore, this broader repertoire of metacognitive knowledge enabled students to achieve their goals more quickly.

There was however, less awareness of personal gains, as this aspect of student development was not focused on as much as language learning strategies (which students had said they wanted in the feedback from the pilot course). Identity within the language learner's metacognitive experience can be linked to Oyserman and Destin's (2010) identity-based motivation model, which implies that "people interpret situations and difficulties in ways that are congruent with currently active identities, and prefer identity-congruent over identity-incongruent ones" (p. 1002). They further state, "identities matter because they provide a basis for meaning making and for action" (p. 1011). Thus, students who seemed cognizant of their language learning identity were better able to connect different areas of metacognitive processes, define their learning and reach deeper levels of reflection based on this knowledge. Having a strong sense of identity also seemed to be in symmetry with students' metacognitive readiness for self-directed learning. Table 4 presents an example of a student's increased awareness of his identity and personal growth.

Table 4. *Student's Metacognitive Awareness Through Reflection-on-Action: The Mirror*

	Metacognitive awareness of…	**Student Reflection**
The mirror	**Personal growth**	"Not being shy I am good at speaking to foreigner. I will improve this strongpoint more."

With regard to transferability of skills, a main concern of the pilot course was that many students reported that they did not understand how to apply knowledge, skills and attitudes to learning experienced during the course to a new situation. The research literature suggests that knowledge transfer should be consciously fostered and nurtured as it is not a natural bi-product of educational settings. Thus, by raising awareness of the transferability of skills students were able to consider how they could apply new skills to an environment outside the classroom. Table 5 provides examples of skills students felt would help them in their out-of-class endeavors.

The metacognitive skill which students felt would help them most in other classes and/or in their future careers was how to balance input and output in their learning strategies. For most students in the course, they had to become accustomed to applying knowledge, as previous learning experiences focused largely on knowledge acquisition. A skill which students found beneficial for their future was the goal-setting process, which they felt they could easily transfer to other language classes and the work place. Time-management was the third skill that students considered useful in different aspects of their life beyond the classroom. Although student reflections were positive with regard to personal development and planning actions, for students, these skills were ranked on a lower level of transferability.

Table 5. *Students' Metacognitive Awareness Through Reflection-on-Action: The Binoculars*

	Metacognitive awareness of…	**Student Reflection**
The binoculars	**Transferability of skills**	"I learned that it is important to find balance. In my other class…I can use learning plan. I have to study and review. And also I have to speak…So I will try to find balance. When I leave university, I think I have to use learning plan also. Because of I have to do well in my job. So I have to review my job and try to do good work. I have to evaluate my work so I can do well." "I will set my goals. Not only do I set goal, but also do reflect. I think reflect of my action is important. If I didn't reflect my action, I couldn't grow up." "In the future, I will work job then I need time management. Because it is necessary to spend time effectively. I have to make a plan and have to do according to schedule."

Awareness of these various metacognitive skills was considered to be illustrative of student growth and development, as students were able to recognize and, in some cases, overcome challenges related to their personal behavior and learning capabilities. The course was designed to help students develop specific skills to improve overall performance in other classes; but it was also expected that, armed with this new knowledge, students would be able to focus on the larger picture and show evidence that they could connect these skills to life beyond the classroom.

Increased Interpersonal Skills

Interpersonal skills refer in this study to basic communication skills between students and/or with the teacher/advisor. The communications consisted mainly of in-class discussions of metacognitive processes with peers and one-to-one sessions with an advisor. Although all students in the course had completed six or more years of English learning, the communicative skill of most of the students was very basic. Thus, several opportunities were provided to help students develop, practice, and expand their inter-

Table 6. *Increased Interpersonal Skills As a Result of Self-Directed Learning*

	Relationship	Student reflection
Increased interpersonal skills	Student/student (in-class discussions)	"And every time when I speak English, I became nervous. But the group discussion could help me to speak more and had fun. It helped me to think that I don't have to be nervous when I speak. I just enjoyed speaking!!! Now I can speak in front of others. It is my progress." "I accustomed to tell my remark when I talk with group and class. When I do group talking I tell my remark first then I ask another member. It is the improved point." "At first, I had no idea to improve my speaking. However, in the class, we could have possess own idea. So step by step, I got many idea of improve my speaking. "
	Student/Student (out-of-class discussions)	"I sometimes talked with my friend on a way home. It was also good, and I could enjoy the time, so it suited me." "And from the latter half of self-learning, I found that I could talk with students of university. I felt that talking with students was very fun. And I could get on with them from these conversations."
	Student/Teacher	"And I noticed, do conversation positively is important for me. I always felt afraid, talk with other person [teacher] in English…but this time I could notice my skill." "So I got nervous but teacher supported me. Before I know it, I could say what I want to say…I could enjoy talking with someone!"
	Student/Advisor	"I want to improve my conversation skill but I didn't know how to way for the goal, so I asked learning adviser. She gave me one advise…I did it. It helped me. I could talk smoothly then before."

personal skills. Students were guided in small-group and/or partner reflective discussions at the beginning of every class (which lengthened as the semester progressed); required to speak with a learning advisor twice during the semester for 30 minutes each; and encouraged to participate in other forms of communication during the independent study

component of the course to become more accustomed to using specific phrases to critically reflect on learning, as well as to become more comfortable reflecting on their learning with their peers. Based on students' inability to engage in meaningful reflective discussions at the beginning of the course and go beyond mere surface descriptions of their learning activities, it was considered a huge success that students' interpersonal skills became the most successful component of the self-directed course as students began to share their own knowledge and learn from others. Their progress is illustrated in the extracts in table 6.

Increased Motivation and Self-confidence

Motivation and self-confidence play a central role in producing effective self-directed learners who will actively and continuously engage in the learning process even after reaching targeted goals. Increased confidence in the course helped to transform students into more responsible, active participants in their learning and improve overall language proficiency. For the students in this study, English was a mandatory course and they were expected to reach a specific level in order to graduate. This mandate resulted in many of the students entering the course with low motivation and self-confidence. Evidence of students' high affective filter (Krashen, 1981) was evident in many of the reflective reports; however, these students were able to overcome their personal challenges and find purpose and direction as they became more critically reflective of their learning and discovered ways of learning that suited their unique identity. The sample quotes below illustrate the gains.

Overcoming lack of motivation

> "At first, I felt scary in this class…My motivation is very low…So I always nervous in this class. But, I can be feel interesting, since start self study… And I noticed, do conversation positively is important for me."

> "The course makes me change my mind. I had a bad image of learning English that is stiff and difficult. However, threw the class, I could find how to learning which is fit for myself. Moreover, I can talk my teacher and listen she said easier than when I'm a newly enrolled in this university."

Overcoming lack of self-confidence

> "Before started the course, I didn't have any confidence in my speaking…I didn't have any confidence to go to practice speaking…However, in the class…I got many idea of improving my speaking…After review by teacher, I review myself. I checked that I could speak prepare sentences, and balance of conversation."

For these students, a key theme that seemed to emerge continuously through their reflections was a newly-found enjoyment in learning. As students' motivation changed from extrinsic (gaining the class credit) to intrinsic (discovering new ways of learning), their level of satisfaction increased. This research thus found that enjoyment plays a crucial role in helping to sustain students' motivation and increase levels of confidence. This finding seems to support current literature in motivational studies (See for example Dörnyei, 2001; Pintrich and Schunk, 1996; van Lier, 1996).

Levels of Reflection in Self-Directed Learning

O'Malley and Chamot (1990) state, "students without metacognitive approaches are essentially learners without direction and ability to review their progress, accomplishments and future learning directions" (p. 99). According to Burnard and Chapman (1988), there are two main levels of reflective enquiry: deep and potentially meaningful inquiry and superficial problem solving. Analysis of students' final reports showed a deeper level of maturity in students related to the progress made in their self-directed learning. Incorporating various structured and unstructured modes of reflection in the course (as shown previously in Figure 1), encouraged students to go beyond a mere description of events (which was prevalent in the pilot course) to setting appropriate and relevant goals, planning an action, observing changes, monitoring progress, interpreting events, theorizing about what to do next, and evaluating their own progress (see Figure 5).

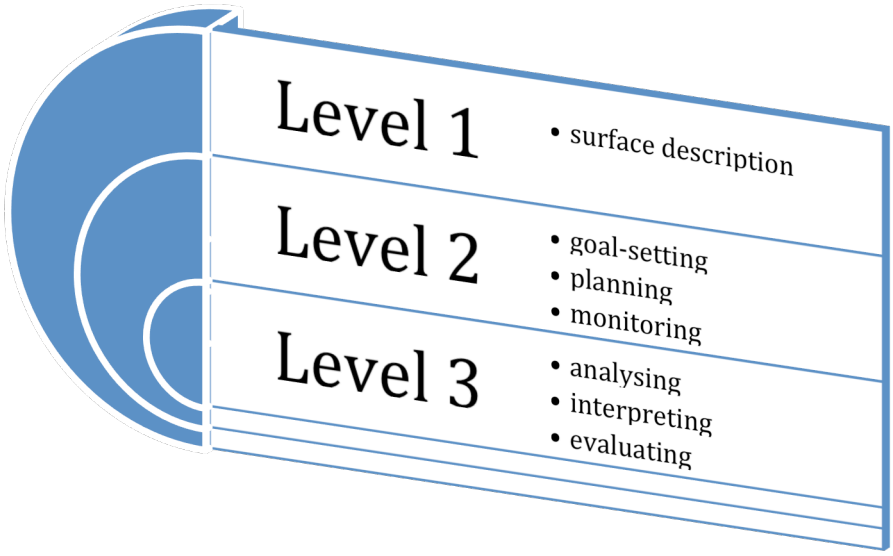


Figure 5. Emergent levels of reflection from students' final reflective reports.

Conclusions

Based on these research findings, being an active and reflective participant in one's learning and having the knowledge and self-awareness of one's own language learning process seem to be salient features of a good self-directed learner. This study demonstrated that a structured process of reflective learning can be a valuable learning tool to help students achieve deeper levels of reflection. The findings reaffirm existing studies of the benefit of increased reflexivity and metacognitive awareness on short-term and long-term learning outcomes. Although students admitted that becoming a reflective learner was at times challenging, the value of this research for the researcher was in helping students to become more critically reflective about their learning, gain more

insight into their own personal strengths and weaknesses, and to consider how skills could be transferred to a new situation. Further, not only were students able to see their step-by-step progress, but their deeper reflective abilities enabled them to move beyond surface reflections and more critically question their learning process as the weeks progressed.

One area that warrants further attention in this area of curriculum innovation is the emphasis of students' language learner identity, which was seen to play a central role in their learning. It is suggested that self-directed courses introduce reflective tools in which students are able to become aware of their own role in the language learning process. It is suspected that this would lead to a more highly motivated student as he or she would be able to select a learning behavior that was congruent with his or her unique identity.

The learning environment provided in this study was designed specifically to emphasize a reflective approach to enhancing knowledge and increasing students' conscious awareness of developing metacognitive skills that were relevant to other classes and learning outside the university's walls. Three positive reflections about the course itself gave the researcher hope that students would indeed be able to apply knowledge learned in the course to other areas of their lives:

> "I think my self study week helped me to know what I really need to study and achieved my goals…When the course will end, I can study by myself."

> "In this class, I learned important of challenge. This experience is good for me."

> "I learned process is very important as a result. I think I will make much of process."

To conclude, as the implicit became more explicit, students' self-awareness increased and they became more effective at managing their own learning. Thus, the benefits seen in the findings of this research highlight the important influence a self-directed curriculum can have on students' personal, learning and future development.

Appendices

Appendix A. *Definitions of Reflection in the Research Literature*

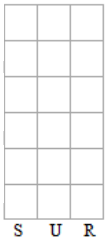
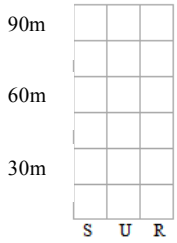
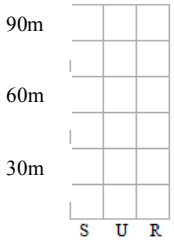
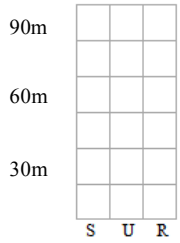
Boud, Keogh and Walker (1985)	Reflection is an important human activity in which people recapture their experience, think about it, mull it over and evaluate it. It is this working with experience that is important in learning (p. 19). …Those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations (p. 19)
Dewey (1933)	Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends, constitutes reflective thought (p. 9).
Schön (1983)	The practitioner allows himself to experience surprise, puzzlement, or confusion in a situation which he finds uncertain or unique. He reflects on the phenomenon before him, and on the prior understandings which have been implicit in his behaviour. He carries out an experiment which serves to generate both a new understanding of the phenomenon and a change in the situation (p. 68).
Smith (2001)	The act of reflecting-on-action enables us to spend time exploring why we acted as we did, what was happening in a group and so on. In so doing we develop sets of questions and ideas about our activities and practice
Schunk and Zimmerman (1998)	Self-regulation theorists view learning as an open-ended process that requires cyclical activity on the part of the learner that occurs in three major phases: forethought, performance or volitional control, and self-reflection…self-reflection, involves processes that occur after learning efforts and influence a learner's reactions to that experience (p. 2).
Jarvis (1987)	Reflection is an essential phase in the learning process whereby people explore their experiences in a conscious manner in order to lead to a new understanding and, perhaps, a new behavior (p.168).
King (2002)	Critical reflection is taken to mean a deliberate process when the candidate takes time, within the course of their work, to focus on their performance and think carefully about the thinking that led to particular actions, what happened and what they are learning from the experience, in order to inform what they might do in the future (p. 2).
York-Barr, Sommers, Ghore and Montie (2001)	It is a complex process that requires high levels of conscious thought as well as a commitment to making changes based on new understanding of how to practice (p. 4). Reflective practice is "a deliberate pause to assume an open perspective, to allow for higher level thinking processes. Practitioners use these processes for examining beliefs, goals, and practices, to gain new or deeper understandings that lead to actions that improve learning for students" (p.6).
Hatton & Smith (1995)	Deliberate thinking about action with a view to its improvement (p. 52).

Appendix B

Weekly Self-Monitoring Activities

PART 1 (At home)

Fill in the Study – Use – Review chart below.

	Diary 1	Diary 2	Diary 3	Diary 4
90m				
60m				
30m				
	S U R	S U R	S U R	S U R
Level of satisfaction: (1-5)	( )	( )	( )	( )

PART 2 (In class)

Rate yourself first, and then ask your partner about his/her learning.

Week 1

- I'm happy with my learning goals. 1 --- 2 --- 3 --- 4 --- 5
- I'm happy with my balance of Study-Use-Review. 1 --- 2 --- 3 --- 4 --- 5
- I'm happy with my resources. 1 --- 2 --- 3 --- 4 --- 5

Week 2

- I'm happy with my learning goals. 1 --- 2 --- 3 --- 4 --- 5
- I'm happy with my balance of Study-Use-Review. 1 --- 2 --- 3 --- 4 --- 5
- I'm happy with my resources. 1 --- 2 --- 3 --- 4 --- 5

Week 3

- I'm happy with my learning goals. 1 --- 2 --- 3 --- 4 --- 5
- I'm happy with my balance of Study-Use-Review. 1 --- 2 --- 3 --- 4 --- 5
- I'm happy with my resources. 1 --- 2 --- 3 --- 4 --- 5

Week 4

- I'm happy with my learning goals. 1 --- 2 --- 3 --- 4 --- 5
- I'm happy with my balance of Study-Use-Review. 1 --- 2 --- 3 --- 4 --- 5
- I'm happy with my resources. 1 --- 2 --- 3 --- 4 --- 5

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Tanya McCarthy (mccarthy@rsh.oit.ac.jp) is a senior lecturer/learning advisor at Osaka Institute of Technology. She has earned a PhD in Linguistics from Macquarie University and teaches courses that facilitate self-directed learning. Her research interests include Advising for Language Learning, self-directed learning, and self-directed professional development.

SELF-DIRECTED LEARNING: WHY DO MOST INSTRUCTORS STILL DO IT WRONG?

Roger Hiemstra

In a recent article in this journal I described how most instructors of adults use a teacher-directed approach in spite of the SDL scholarship and lost learner potential. In this article I describe why this apparent disconnect takes place. In addition, twelve teaching colleagues provide their ideas relative to why many teachers fail to utilize SDL approaches. They also describe their own experiences in helping learners take increasing responsibility for their own learning. I add my own ideas on why many instructors still do it wrong and end by suggesting various ways to better advocate for SDL processes, techniques, and instructional approaches in classrooms.

Overview

During the initial Self Directed Learning Symposium in 1986 I made a case for building on the self-directed learning (SDL) potential within each learner via what I referred to as the individualized teaching-learning process (ITLP) (Hiemstra, 1988a). I provided research and literature to support this approach's viability, spelled out specific facilitator roles, and described how ITLP had worked for me. This lead to a co-authored book on the topic (Hiemstra & Sisco, 1990) where the process terminology morphed into individualized instruction (II), a book related directly to understanding personal responsibility (Brockett & Hiemstra, 1991), numerous related dissertations, and various other publications including two recent efforts (Hiemstra 2011a, 2013).

However, I have been disappointed over the intervening years since my initial efforts and the research reports by many others to note that numerous teachers, including instructors of adults, still rely primarily on teacher-directed approaches and fail to tap into that SDL potential among their students (and I suggest to the long-term detriment of such learners). I also believe that many teachers do not understand how their own teaching philosophy inhibits what they might do to adopt more "learner friendly" approaches. Brockett and I had an early inkling of such instructional philosophy limitations: "It also has been our observation that many people have difficulty accepting some of the humanist philosophical underpinnings crucial for self-directed learning success" (Hiemstra & Brockett, 1994, p. 60). Merriam also speaks on this point: "Those grounded in a humanistic philosophy posit that self-directed learning should have as its goal the development of the learner's capacity to be self-directed" (2001, p. 9).

In essence, I contend that most instructors of adults in various teaching and training settings still do it wrong. By this I mean they don't achieve what is possible in

helping tap into and maximize the nascent potentiality of learners for achievement both in credit and non-credit courses or even one-time facilitator-learner encounters such as conference or training sessions. To speak to my concerns and observations, this article has four purposes:

1. To briefly describe my initial work regarding the ITLP (now II) process.
2. To summarize some feedback from several colleagues regarding their own teaching experiences and why they believe instructors still do it wrong.
3. To provide my own ideas on why most instructors still do it wrong.
4. To suggest ways that the message of SDL's potential can be better disseminated to teachers and trainers of adult learners.

Individualizing Instruction

As noted above, in 1986 at the first SDL symposium I described my work with individualizing the teaching and learning process (Hiemstra, 1988a). In many respects, it built upon Knowles' work with andragogy and SDL (Knowles, 1970, 1975) and Tough's work with adult learning projects (1971). As a relatively new assistant professor I had participated in workshops presented by each of them in 1972 and subsequently was stimulated to reexamine the way I teach adults.

My II process was designed to help adults learn how to make their own decisions in accomplishing personal learning goals. This instructional approach assumes that adult learners are capable of SDL and the associated choice-making. On the other hand, if learning decisions are made by instructors, opportunities adults have to take increasing responsibility for their own learning often become thwarted.

It had been my experience for several years as I gained comfort with the II process and began incorporating learning contracts (Guglielmino, Guglielmino, & Durr, 1999; Knowles, 1986) that most learners rapidly accepted taking on responsibility for their own learning decisions if given the opportunity to do so. In fact over my now nearly four decades of developing and using II procedures, I have observed that few adults reject or have real difficulties utilizing the process although the time required for adoption or real comfort with it varies from person to person. In fact, most quickly begin thriving in such an environment, often finding some ways of taking more personal responsibility in courses where instructors utilize traditional teacher-directed approaches.

I also have been involved with teaching one or more online courses each year since 1988 and the II approach has been foundational in that environment as well as for student success. Even in my now more than 15 years as an adjunct professor since retirement, I have been able to incorporate various II approaches to help learners go beyond any predesigned requirements or curricula and create learning experiences tailored to individual needs. In a 2011 presentation at the International Self-Directed Learning Symposium (Hiemstra, 2011a), I included several comments from learners on how the II process and learning contracts worked for them.

Steps in Individualizing Instruction

Six major steps are involved in the II process:

1. Step one involves several activities prior to meeting with any learners, such as determining competencies or requirements, designing course-related needs assessment forms, acquiring learning support materials, preparing extensive study guides to complement the textbooks and syllabus, and creating supplemental web pages.
2. Step two requires paying attention to physical, emotional, and social environmental needs (Hiemstra, 1991).
3. Step three includes some initial time with learners clarifying probable individualized educational needs and focal points, including engaging them in a self-discovery needs assessment process.
4. Step four necessitates the identification of various ways learners can build knowledge or increase competencies through reading, writing, discussion, designed activities related to any identified needs, and the identification of various learning resources. This is usually done mutually between the learning facilitator and each learner via conversations, at least two versions of a learning contract, and provision of considerable oral or written feedback.
5. Step five begins to parallel traditional instruction in that it is when the facilitator provides any needed information, monitors learning activities, identifies new learning resources if needed, provides ongoing feedback, and contributes to the progress of the initial planning efforts.
6. Step six entails facilitating learners in ongoing self, teacher, and course evaluation efforts. It also is when the facilitator assesses the learners' overall accomplishments in relation to their learning contracts via considerable individualized written feedback, by providing an institutional required grade, and by engaging the learner in any needed conversations.

Instructional/Facilitator Roles

Instructional/Facilitator roles that work for me in promoting corresponding personal responsibility among adult learners are listed below.

1. Content resource—Sharing expertise and knowledge with learners through written material, web pages, presentations, face to face or online discussions, and one-on-one advising, conversations, counseling, and coaching (Posner, 2009).
2. Resource locator—Locating and sharing various learning resources to meet needs identified and emerging during learning experiences. These can include written materials, Internet resources, and facilitating for learners various people-oriented experiences such as agency audits or visits, mini-internships, and talking with topic specialists.
3. Interest stimulator—Arranging for and employing, face-to-face or online, various resources and learning experiences designed to maintain learner interest such as gaming devices, small group discussions, online asynchronous forums, face-to-face or online guest presentations, and even humorous PPT presentations.

4. Positive attitude generator—Helping students gain increasing confidence in making personal learning decisions via constructive feedback, personal encouragement, positive reinforcement, and extensive critique of written material.
5. Creativity and critical thinking stimulator—Stimulating a learner's creative and critical thinking skills through discussions (face-to-face or online), study groups, journal writing (Hiemstra, 2001), interactive reading logs, role playing, creating a written or pictorial autobiography (Hiemstra, 2011b), writing a biography of a relevant individual, or various ways of stimulating real-life experiences. Additional means include helping learners develop web pages or blogs as an electronic technique for sharing what they have developed.
6. Evaluation stimulator—Evaluating learner progress and stimulating self-evaluation by learners. The learning contract provides opportunities for learners to think about how they can use an instructor, colleagues, and others to enhance personal evaluation of their learning efforts.

In essence the II process works because "it helps adults take responsibility for their own learning. It does not work equally well in every teaching situation, but its foundation in the belief that all people are capable of self-directed involvement with learning makes it a process that should be studied, understood, and tried" (Hiemstra, 1992, p. 335).

My Colleagues Voice Their Opinions

In an effort to gain fresh insight and knowledge related to my topic, as a convenience sample I invited several trusted colleagues, all of whom are professors, to provide their advice, experience, and wisdom. Using email communication I described the topic for which I was seeking their feedback, provided an URL to Hiemstra (2011a) as background information, and asked each person for responses to four question areas shown in Appendix A. Each question serves as a sub-heading for the following sections.

Twelve of 14 people responded with suggestions, many of which included fresh insights beyond my own thinking and experience. I need to note that six of the 12 respondents took one of more graduate courses from me in the past. Of these 12 colleagues, seven are females and 10 have adult education as their primary instructional focus. Seven of them have presented at one or more International Self-Directed Learning Symposia before. Two people are younger than 40, two are between 40 and 49, four are between 50 and 59, three are between 60 and 69, and one is over 70. Ten live in the United States. Four have taught at the college level five or fewer years, two have taught between six and 15 years, and six have taught 16 or more years. All of them have several years of professional experience and/or consulting experience outside of college teaching. In essence, this small group represented a wide range of views about and experiences in teaching adults. Throughout the summarizing and portrayal of their comments within the following sections, I use R-1 (respondent number one), R-2, etc. to provide anonymity when direct quotes are presented.

Encouraging Students to Take Individual Initiative

One colleague structures a course in such a manner that for students to succeed in completing learning tasks or activities, they need "to exert personal control over the learning process . . . [this requires using] traditional means (grades, points, instructor feedback) as a platform for students to spring from in order to initially reward the individual impetus to contribute to the learning process." (R-1, personal communication, December 27, 2012). Another person uses techniques whereby learners take initial steps at making individual choices in terms of selecting topics for papers or projects. This is designed to "wean" students away from the directed approaches used by other instructors (R-9, personal communication, December 10, 2012).

Another colleague gives learners as much freedom as possible in picking topics on assignments and helps them find relevance in any learning activities. "If they [learners] feel an assignment will be completed for me [the instructor] … I do not feel good about having a student complete such an assignment." (R-3, personal communication, December 5, 2012). Another person is totally open in terms of the "ways and means for achieving desired outcomes" (R-4, personal communication, December 17, 2012). One colleague has learners establish personal learning objectives and "they complete a diary and two reports … [detailing] integration of their journey in the middle and end of mastery" (R-2, personal communication, December 3, 2012).

One professor helps learners link learning to their work: "I invite students to look at their work situation and connect the class materials to what they are doing and how they are doing it.… Win, win, win, and very individualized." (R-6, personal communication, December 5, 2012). Another colleague believes that students must have an interest and feel a drive for being in a course: "I encourage this attitude by being flexible with deadlines and encouraging thought and process more than grades" (R-10, personal communication, December 29, 2012). Finally, one colleague utilizes a wide range of ways for encouraging individual initiative based on flexibility within the administrative structure of an individualized classroom. These range "from choices and active involvement to partially guided, … to completely independent study based on a plan they submit and we jointly agree to" (R-11, personal communication, December 30, 2012).

Using Learning Contracts

I received a variety of responses on how people use learning contracts and their impressions on how learners respond to them. One colleague puts it very well in terms of what has transpired: "I've experienced a wide range of student response to the use of learning contracts. Some take to it as if they have found their way home, while a majority of the students demonstrate panic, fear, discomfort, angst, and great emotion … at being requested to take the lead in the learning process … [However,] the majority of students are fully engaged and have transformed perspectives as a result of the experience" (R-1). R-2 notes that students have generally been excited to decide their own goals and objectives, while others experience "tension in the freedom to make their own choices in terms of learning." Another colleague followed with this response: "It is critical that the students have a real understanding of the meaning and use of contracts if they are to be effective" (R-8, personal communication, December 6, 2012).

Another professor talked about learning contracts this way: "Their advantages are quite clear and it is obvious to me a contractual agreement is the only serious foundation for adult learning, or should be. They allow for learner's responsibility, goal setting, a sound working relationship, and evaluation. They are the educational counterpart of the definition of what it means to be an adult learner, i.e., responsibility for one's education" (R-4). One colleague noted his caution in using learning contracts: "I am more selective in using learning contracts – they are not as universal as I once thought they might be. I find they lend themselves better to courses that are more experiential such as an internship, thesis, and hybrid/online instruction" (R-7, personal communication, December 5, 2012). Another colleague reports being "disappointed that a fairly large number of students have chosen to contract for a B … many students may not be 'pushing' themselves" (R-12, personal communication, January 3, 2013).

One professor talked about the journey to using learning contracts: "Just as it was in the 90s when I first experienced them, there is trepidation from students who are the product of scantrons and one size fits all education. It may take a bit more of my time to assuage concerns and fears, but once guided, students are appreciative of the opportunity to take a much greater role in the process" (R-6). Another professor noted one problem with using learning contracts: "I think the biggest drawback is that students (and colleagues) aren't familiar with the contract model…. Other than the unfamiliarity with learning contracts and perhaps the additional work of the instructor to keep up with different types of projects, I don't think there is [another] drawback. Everything about learning contracts fits with what I believe as a facilitator – make learning relevant, draw upon student experiences, encourage individual initiative, [and] promote critical reflection" (R-5, personal communication, December 4, 2012). Finally, R-11 talks about the long-term value of learning contracts for students: "They have responded well and have normally designed exceptional learning experiences, with outcomes that often result in publication, presentation, and/or important contributions to their fields and/or their organizations."

Why Do Teacher-Directed Approaches Still Dominate?

One way R-1 talks about this is in terms of faculty approaches to instruction: "There will always be those in higher education that prefer to spend as little time as possible on the quality of teaching; however, the scholarship of teaching requires that we provide a means for sharing means and methods that can be operationalized in many settings, by many individuals, to the benefit of the learner and alteration of who we traditionally conceive of learning within our educational institutions." R-3 offers some similar ideas: "Outside fields of education, our doctoral programs fail to introduce burgeoning academics to the best practices of teaching and learning …. [also] Increasingly, institutions have shorter terms (8 week, 9 week, etc.). I think it is more difficult to have higher expectations of SDL with shorter timeframes because it takes some students a bit of time to get used to that style of teaching … I feel that it is difficult to progress from teacher to student directed when terms get very short. As institutions [also] go toward a heavier adjunct model of instruction, I think faculty lose some of their opportunities to watch students grow in SDL."

R-12 believes that "many teachers simply are not willing or able … to place trust in the learners or the process. I believe that for some instructors … there is an 'ego' or control factor that keeps them from wanting to 'share' control. For other teachers, it has to do with how they were taught." Another colleague echoes this thought: "Teachers teach as they have been taught – it's a cliché, but I think it still applies. I also think that many instructors are 'afraid' to let go of their control of their classes because they are unsure of how they will handle themselves. I think it can be threatening to many individuals; a lot of people are scared to be seen as making a mistake" (R-9). One professor thinks "the real challenge is to educate 'traditional' faculty to understand the benefits of employing self-directed learning concepts into the teaching process. This is a major task that has not yet become even suggested in most higher education programs/courses" (R-8).

Another colleague talks about it this way: "Our profession's sense of identity is based on the notion of being the owner and transmitter of knowledge. Changing to facilitating people's efforts to acquire content by themselves requires a deep change in one's professional sense of self. Most members of the teaching profession still believe, deep down, that knowledge can be transmitted according to a simple, linear, almost behavioristic communication process" (R-4). R-2 adds a similar comment: "In my opinion the teachers want to stay in 'full control' of the content and the process," R-6 adds "old habits die hard," and R-5 notes that it is "sort-of the 'why fix it if it ain't broke' mentality, I think. It is also a replication of teaching how they were taught, perhaps."

Two other professors talk about the issue in a similar way: "I believe … because it takes some work to help students through a self-directed learning approach, it is a mix of laziness and fear. I think people have a hard time getting away from what has always been done" (R-10). R-11 suggests that for many instructors the notion of moving from "instruction to facilitation and teacher direction to self-direction is a true paradigm shift, and … I have seen only the beginnings of that shift…. Those who attempt to individualize and promote SDL are often faced with initial resistance from some 'students' who are very protective of their role – they expect to be lectured to and spoon-fed."

Why Do Most Still Do It Wrong?

When asked if they had any thoughts related to my beliefs about instructors still doing it wrong, I received a wide variety of feedback, including many ideas on how to bring about needed change. R-1 noted that many higher education instructors do not have a concept of general adult learning principles: "It requires a fundamental shift in not only what and how they teach, but also a pivotal shift in thinking about how individuals learn … I think professional development programs for faculty that integrate adult learning are key to changing the existing landscape." Another colleague also talked about this issue in similar terms: "I think the real challenge is to educate 'traditional' faculty to the understanding and benefits of employing self-directed learning concepts into the teaching process. This is a major task that has not yet become even suggested in most higher education programs/courses" (R-3). R-4 talks about the question in terms of the routines and habits an instructor has developed: "When one has built a solid curriculum over the years, there are many reasons to keep using it, fine tune it year after year, but few incentives to turn to a radically different approach."

Another professor talks about the outside pressures teachers face at all levels: "I fear we are fighting an uphill battle in education since teachers are demonized and high stakes testing seems to be the solution for ensuring accountability." (R-7). Another colleague suggests that it may be related to increasing class size in many situations: "Class size is a point of concern – as my classes have grown from 20 to 35 in my short tenure here, the workload makes the student-to-student interactions more challenging." R-12 looks at the question from a slightly different way: "I'm not so sure that most teachers are 'doing it wrong' as much as I believe they are not embracing it. One problem we have to recognize is that there are many different ways of defining what constitutes self-directed learning. Some people … describe SDL as a very structured process that seems to almost mirror performance-based instruction grounded in behaviorism. Others take … a more humanistic approach."

Finally, R-5 noted what was experienced when talking with some colleagues about SDL and learning contracts: "I agree that they do it wrong but I would say they just aren't doing it … [in talking with colleagues] I brought up using learning contracts … I was immediately shut down by a faculty member who simply said 'those don't work … they [students] don't care and they expect you to tell them what they need to know." Another professor has had similar experiences: "Like almost anything else, learning contracts can be misused. I have talked with people who pride themselves on their use of learning contracts, yet you discover that they are referring to students choosing from a menu of options for a grade … The term 'learning contract' sounds very rigid, and means different things to different people." (R-11).

Why I Believe Most Still Do It Wrong

This section will quickly be seen as a personal statement of beliefs and observations such as what were shared by my colleagues in the previous sections. However, my comments are based on many years of teaching, observing other teachers, and listening to complaints from my students about other instructors. Some readers will no doubt take exception to my comments, and word limitations have restricted the number of comments I can include, so I invite dialogue, counter arguments, and related scholarship.

To begin with, I have long contended that it is very important to develop a personal statement of instructional philosophy because such a philosophy drives the way we teach. A statement of philosophy also can be a mechanism for changing the way we teach if we begin to see inconsistencies between what we say we believe and what we actually do in our interactions with others, especially students (Hiemstra, 1988b). Yet, it has been my observation over more than four decades of university teaching that few professors have developed such a philosophy statement or if they have, they do not periodically reexamine it as suggested is important in a related workshop description (Brockett & Hiemstra, 2004). Thus, the lack of a personal philosophy statement or an outdated one may account for some teachers not incorporated what is now known about the potential of self-directed learning and the encouragement of personal responsibility.

Related to the above point, I believe that many teachers employ traditional teacher-directed approaches because their views of behaviorism, often modeled after

former teachers and their own experiences as learners, are seen as the best means for working with learners. Granted some teachers truly believe that their role is to "tell" students the knowledge they need to know. However, my beliefs based on nearly forty years of SDL scholarship suggest that reliance on behaviorism may unintentionally inhibit the growth and development of many learners by creating dependency (Hiemstra & Brockett, 1994).

I often wonder, too, how seriously some teachers take the evaluative comments coming from their learners. Admittedly, some higher education institutions mandate evaluation procedures after each course is completed. However, utilizing such information to make significant changes in instructional approaches takes a real effort. I typically administer my own evaluation tools in addition to any structured ones, usually including mid-course or even more frequent evaluation requests. Over the years I have carefully "listened" to such feedback and made incremental changes in my instructional approaches. Hiemstra and Sisco (1990) describe how important this is: "In addition to receiving information about the conduct of a learning experience, we also believe that some appraisal of our performance as instructors is vitally important. For many instructors, this area may be a highly sensitive one. Yet, receiving feedback on your teaching is essential if you are to improve your performance" (p. 132).

Finally, I have observed during my several decades of teaching that there has been a diminution of institutionally sponsored or promoted opportunities for instructional improvement. When I began as an Assistant Professor at the University of Nebraska in 1970, there were many opportunities to attend sessions on instructional improvement, obtain such support from departmental colleagues, and find internal or external funding opportunities aimed at improving instruction. However, as I moved on to different higher education institutions such opportunities began to disappear for various reasons, frequently because of a lack of necessary funding. As supported by Schylinski (2012) in her research, I fear that today a majority of college professors are often left to their own devices and must rely mainly on modeling their instruction on what they experienced in classrooms themselves as students. In essence, instructional approaches that do not take into account the notion of enhancing personal responsibility for learning are perpetuated.

How Do We Better Disseminate the Potential of SDL?

There are no easy ways of disseminating the continuously growing self-directed learning knowledge base beyond enticing more and more people to gain familiarity with what has been discovered about working with learners. This article is but one small step in that process as are most of the other contributions to the *International Journal of Self-Directed Learning* and the annual SDL symposium. Following are but a few of the possibilities and, as noted earlier, I encourage dialogue with me, contributions to that annual symposium and this journal, and additional related research.

- The development of several Web site(s) devoted to promoting the use of SDL and II with such items as supportive essays from several faculty, testimonials from students, examples of such approaches or techniques as learning contracts, and models of instructional materials that can be utilized. Following are three such

Web site examples: (a) http://www.sdlglobal.com/; (b) http://selfdirected learning .com/; and (c) http://www-distance.syr.edu/distancenew.html.

- The development and publishing of various video clips through such sources as YouTube, Meta Café, and Google Video that describe SDL, how it can be used, and successes that are possible. Following are three YouTube examples:
    - http://www.youtube.com/watch?v=kqZR6ZJsKJA
    - http://www.youtube.com/watch?v=AexdB8aBi8I
    - http://www.youtube.com/watch?v=fkEydFhZj9Y.
- Writing articles, books, and monographs related to II, SDL, and the use of learning contracts for potential publication in a wide variety of outlets outside of adult education circles. Making related presentations at a wide variety of professional conferences.
- Conducting training workshops for faculty that describe the II process and tout examples of various related resources.
- Helping teachers and trainers understand that the individualizing instruction approach does take more time and effort than teacher-directed approaches, but that it is worth it in the long run if our goal is to help learners become more effective, successful, and responsible for their own learning.
- Encouraging and working with institutions of higher education to create professional development programs for faculty that help new and even experienced faculty improve their teaching skills, including understanding what II and SDL have to offer.

There is room for optimism. Halx (2010), who has a master's degree in adult education and doctoral degree in educational policy and planning, may model what is possible among college professors by seeing the links between adult education and other professional areas. He noted the following: "Many of the newer pedagogical methods in higher education, such as service learning, self-directed learning, and learning communities, are in fact quite similar and consistent with those that adult education has advocated for years. While some higher education institutions now practice these pedagogical methods routinely, adult education practitioners have been using them for decades, and as a result, they have refined their use" (p. 525).

One of the people interviewed by Schylinski (2012) in her research, a professor of religious studies, revealed how he is working to incorporate SDL approaches in his teaching: "I take adult learning theory seriously. You must treat students as adults, with respect, as having capacity to learn for themselves, and taking responsibility to learn. The fundamental reality is I will have them for a short time. If I don't enable or encourage their fundamental ability to learn on their own, what have I done? My hope is when they leave, they will be lifelong learners" (pp. 56-57).

It is my belief that much more can and must be done to help disseminate the positive benefits emanating from considerable scholarship regarding SDL and its potential within instructional settings beyond those facilitated primarily by colleagues already immersed in adult education theory and knowledge. Gross and Salko (2013) perhaps say it best: "How will we learn most and best in the 21st century? We believe it will be through self-directed learning (SDL)." I hope that this article will provide additional support in spreading the word regarding individualizing the instructional

process, self-directed learning, and the potential in helping learners taking increasing responsibility for their own learning.

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Appendix A

Questions Emailed to Colleagues

1. How do you encourage your students to take individual initiative?

2. If you have used learning contracts, how have your students responded to them? If you don't use learning contracts (or have stopped using them), what do you see as their drawbacks?

3. Even given all the research on self-directed learning during the past 50 years, teacher directed approaches still dominate in education for learners of all ages. Why do you believe this is true?

4. Do you have any other thoughts related to my belief that most instructors still do it wrong?

Roger Hiemstra (rogerhiemstra@gmail.com) is Professor Emeritus, Syracuse University, and Adjunct Professor, Le Moyne College. A member of the International Adult and Continuing Education Hall of Fame, his research interests include self-directed learning, older adult learners, and ethical practices for adult educators. He manages an adult education Internet resource at http://wwwdistance.syr.edu/distancenew.html.

SELF-DIRECTED LEARNING READINESS AND SELF-DETERMINATION FOR SELECTED REHABILITATION PROFESSIONAL STUDENTS: THE IMPACT OF CLINICAL EDUCATION

Shelley S. Payne, Peter Rundquist, William V. Harper, Julie Gahimer

In a time of rapidly changing medical information, practitioners must have learning skills that enable them to be effective life-long learners. A part of an examination of a final clinical internship for rehabilitation professionals was a pre-post measure of learner self-direction and self-determination. Two instruments, the Self-Directed Learning Readiness Scale (SDLRS) and the Academic Motivation Scale (AMS- reported as Self-Determination Index (SDI) were used with a sample of Doctorate of Physical Therapy (DPT) and Master of Occupational Therapy (MOT) students. Pre-testing occurred just prior to and post-testing just after the subjects' final clinical assignments. Both groups increased mean scores from pre- to post-test for the SDLRS (p = .01, mean increase 7.29) and the SDI (p = .01, mean increase 0.91). Results of this study support the use of the SDLRS and AMS as means to evaluate self-directed learning readiness and self-determination in rehabilitation professional students.

In the world of higher education, it is commonplace to find lifelong learning within the mission statements of the institution. Additionally, in the ever-changing world of healthcare, it is imperative the education of medical professionals prepare these students with the ability to be self-directed in their learning (Simon & Aschenbrener, 2005). The American Physical Therapy Association's (APTA) Vision 2020 states in part: "Guided by integrity, life-long learning, and a commitment to comprehensive and accessible health programs for all people, physical therapists and physical therapist assistants will render evidence-based services throughout the continuum of care and improve quality of life for society" (APTA, 2012). The American Occupational Therapy Association (AOTA) as part of their accreditation standards for entry-level occupational therapists states, "A graduate from an ACOTE-accredited master's-degree-level occupational therapy program must be prepared to be a lifelong learner and keep current with evidence-based professional practice (AOTA, 2011, p. 2).

Background

Clearly, the focus of both professional organizations is to develop practitioners who are well suited to practice evidence-based care, deliver the highest quality of care to

those in their service, and are prepared to be lifelong learners. The physical therapy and occupational therapy professions have lobbied for and achieved increased autonomy for practitioners within the healthcare arena. However, with this autonomy comes an increased responsibility to consumers that these practitioners will adapt their practice to constantly changing evidence and standards of care as they are established.

Self-Directed Learning Readiness

Professionals who are charged with making autonomous healthcare decisions must be armed with the skills to formulate their own professional learning goals, assess their knowledge needs, and carry out a learning plan to achieve the desired outcomes (Healy, 2008; Huynh et al., 2009; Shokar, Shokar, Romero, & Bulik, 2002). This skill set is often described as self-directed learning readiness (SDLR) (Guglielmino, 1978; Huynh et al., 2009; Kell, 2006; O'Shea, 2003). Knowles (1975) performed much of the early work in adult learning theory; he defined self-directed learning (SDL) 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" (p. 18). The skills associated with the concept of self-directed learning will enable students armed with those skills to successfully meet the demands of a constantly changing profession (Healey, 2008). The instrument that has been used most widely in medical and educational research to measure SDLR is Guglielmino's (1978) Self-Directed Learning Readiness Scale (SDLRS) (Linares, 1999; Merriam, Caffarella, & Baumgartner, 2007; Shokar et al., 2002).

Huynh et al. (2009) used a self-directed learning readiness tool developed for nursing students to evaluate the SDLR of doctor of pharmacy (PharmD) students before and after their advanced pharmacy practice experiences (APPEs). Although 74% of the PharmD students in the study achieved a score that indicated a high level of readiness for self-directed learning, no significant difference was found between the mean scores of the students for SDLR prior to and after completing their APPEs. Another study of PharmD students (Slaughter, 2009), using the original SDLRS (Guglielmino, 1978) found PharmD students with above average SDLRS scores to have higher on-time graduation rates and higher GPAs than students with Low/Below Average or High SDLRS scores (Slaughter, 2009). No studies were found that evaluated the impact of clinical education on the learner profile development of physical therapy or occupational therapy students.

Only one study was identified to examine the SDLR of PT and OT students. Linares compared the SDLR scores of students and faculty in nursing, physical therapy, occupational therapy, physician assistant, and medical technology programs (Linares, 1999). All students in the various programs were highly self-directed except the OT and PT students. Only 22.6% of the OT and 38.7% of the PT students had high SDLRS scores. The author did not specifically cite a rationale for this finding other than to say that the group with the highest level of self-directed learning readiness was the nursing group and they also had the highest mean age. In this study the subjects who were highly self-directed were older than those with an average or low level of self-directed learning readiness.

Academic Motivation

It has been established that students learn and more fully understand new information when their motivation for learning is intrinsic rather than extrinsic (Vanteenkiste, Simons, Lens, Sheldon, & Deci, 2004). Academic motivation is a psychological concept in education that relates to curiosity, persistence, learning, and performance (Vallerand, Pelletier, & Blais, 1992). Intrinsic motivation is the drive to pursue an activity for the pleasure or satisfaction derived from the activity itself. Extrinsic motivation, on the other hand, involves pursuing an activity out of a sense of obligation or as a means to an end (Fairchild, Horst, Finney, & Barron, 2005). Robert Vallerand developed the Academic Motivation Scale (AMS) in 1989 to establish whether individuals are driven by intrinsic or extrinsic motivation in their academic pursuits (Vallerand et al., 1992). The AMS was developed using the constructs surrounding the self-determination theory established by Deci and Ryan (2002).

Academic motivation is a learning variable that has been investigated as a construct relating to academic success and an aptitude for life-long learning (Vallerand et al., 1992). In a study that examined motivation and its relationship to learning with medical students, the AMS was administered to four consecutive classes of medical students. The medical students with a stronger intrinsic motivation for learning scored significantly higher during their clerkship assessment than did students with more extrinsic motivation (Sobral, 2004). Additionally, in a study investigating the various reasons allied health students believe they are attending college, Ballman and Mueller (2008) administered the AMS to 222 upperclassmen and graduate students. The most frequent motivational styles in these allied health students were extrinsic in nature. In order to represent the AMS scores as a mark on a continuum anchored by intrinsic motivation and extrinsic motivation, some researchers report the results as a single motivation index called the Self-Determination Index (SDI) (Deci & Ryan, 2002, p. 47). The range of scores on the SDI is from -18 to +18 with a mean score of 10 (Hegarty, 2010). The higher a participant scores, the more intrinsically motivated that individual is purported to be. A more recent study conducted with graduate education and business students reported results on the AMS using the Self-Determination Index and found the mean SDI score of these graduate students to be 7.30 (Hegarty, 2010).

Clinical Experiences in Medical Preparation Programs

The final clinical experiences that are a part of the entry-level PT and OT educational programs are meant to be the capstone experience for both PT and OT students. These clinical affiliations afford students the opportunity to work closely with a clinical instructor (CI) to formulate learning goals based upon the student's strengths and weaknesses as an emerging clinician. Clinical education is the time in which students are placed into a practice environment, supervised by professionals within their chosen field of study, and practice their evaluation and treatment skills on actual patients, in real settings. The clinical experience gives students the opportunity to receive critical feedback regarding their skills from a clinical instructor and is a time in the educational program rich in opportunities for the development of self-directed learning readiness. Although there has been a shift in healthcare education to strategies focused upon developing learning skills and strategies that promote deep levels of understanding and professional attitudes within students, there is a shortage of literature that examines the

impact of the clinical education on student learning and the development of self-directed learning readiness or self-determination (Healey, 2008; Linares, 1999; Shokar et al., 2002).

As part of the self-study and program evaluation required by accrediting bodies, academic programs may desire to measure whether professional schools of physical therapy (PT) and occupational therapy (OT) are adequately preparing students with regard to self-directed learning readiness (SDLR) and self-determination at different points within the professional curriculum. This study was designed to examine the self-directed learning readiness and self-determination of DPT and MOT students just prior to initiation of their final clinical experience and then again at the completion of the final clinical experience.

Purpose

The purposes of this study were to determine if there was a difference in the SDLRS or SDI scores of Doctorate of Physical Therapy (DPT) and Master of Occupational Therapy (MOT) students after the final clinical education experience and to determine if there was a difference in self-directed learning readiness and self-determination between DPT and MOT students. The primary hypothesis was that there would be a change in the SDLRS and SDI scores for DPT and/or MOT students after their final clinical education experience. A second hypothesis was that there would be no significant difference between DPT and MOT students in pre-test or post-test scores for the same variables.

Methods

Subjects

In order to be included in this prospective, longitudinal study, students had to be classified as third year DPT students or second year MOT students at the time of data collection at one of the two comparison institutions selected for this study. The entry-level degree for the PT students at each institution was the Doctorate of Physical Therapy (DPT) while the entry level degree for the OT students at both universities was the Master of Occupational Therapy (MOT). Internal Review Board approval was obtained from both universities. Informed consent was obtained from all participants.

Instruments

Self-Directed Learning Readiness Scale (SDLRS). The SDLRS is a 58 item self-report instrument that uses a 5 point Likert scale scoring for each item. When administered, this instrument is identified as the Learning Preference Assessment (Guglielmino. 2010). Many validation studies of the SDLRS can be found in the literature (Delayhaye, 1995; Long & Agyekum, 1983). The maximum score for the SDLRS is 290. The average score for adults completing the SDLRS questionnaire is 214 and the standard deviation is 25.59. The SDLRS measures current level of readiness for self-directed learning. The extensive validation work that has been completed using this instrument has established a mean score of 227 on the SDLRS as the target for the individual being "highly self-directed" (Guglielmino, 2010).

Academic Motivation Scale (AMS). The Academic Motivation Scale is composed of 28 items assessed on a 7-point scale. Validation studies of the Academic Motivation Scale provide support for the distinction between the broader concepts of intrinsic and extrinsic motivation (Vallerand et al., 1992; Cokley, 2000). Reporting the results of the AMS as the Self-Determination Index (SDI) offers the advantage of "a significant reduction of variables needed to represent the different types of motivation at a given level" (Deci & Ryan, 2002, p. 47).

Procedure

Students who signed the informed consent document and agreed to participate in the study were given an assessment packet approximately one month prior to their final clinical experiences. The assessment packet contained a copy of the SDLRS and AMS, which required approximately 20 minutes to complete. All subjects were assigned a three-digit identification number for tracking at post-test. Subjects completed the post-test within one month of finishing their final clinical experiences.

Data Analysis

Data analysis was performed using the Statistical Package for the Social Sciences 17.0 (SPSS 17.0), Chicago, IL. In order to combine the institutions to evaluate the data by profession, it was necessary to establish that there was not a significant difference between DPT and MOT students for SDLRS mean scores and the SDI scores at the individual institutions. Dependent variables (SDLRS and SDI scores) were analyzed for significant differences between individual programs at both pre-test and post-test using an independent t-test and Kruskal-Wallis H test. Using the combined data from the institutions, a 2 group x 2 time mixed model ANOVA was used to analyze the dependent variables (SDLRS and SDI scores) between professions and for change across time. The alpha level was set at .05 for all statistical analyses.

Results

Out of a possible 140 potential participants, one hundred individuals agreed to participate in this study and completed the pre-test and post-test for a response rate of 71%. Subject information regarding profession and subject gender is provided in Table 1.

Table 1. *Demographics*

	Female	**Male**	**Total**
DPT	**43**	**19**	**62**
MOT	**36**	**2**	**38**
TOTAL	**79**	**21**	**100**

There was no significant difference between the SDLRS or SDI scores of the DPT students and MOT students at the individual institutions; therefore, the data were combined to allow for comparison of DPT and MOT students, regardless of institution. The combined data were analyzed to determine if a statistical difference existed between

MOT and DPT students for mean scores on the SDLRS or SDI at pre-test and post-test. Descriptive statistics for the mean scores of the SDLRS by profession are provided in Table 2.

Table 2. *Descriptive Statistics for the SDLRS and AMS (reported as the SDI) before and after the Final Clinical Experience for Physical Therapy (DPT) and Occupational Therapy (MOT) Students.*

	DPT Mean (SD)	MOT Mean (SD)
PreTest SDLRS[a]	**224.29 (17.59)**	**220.60 (21.25)**
PostTest SDLRS	**231.58 (18.02)**	**225.08 (22.40)**
PreTest SDI[b]	**12.76 (2.01)**	**12.69 (2.01)**
PostTest SDI	**13.28 (1.97)**	**13.60 (1.76)**
[a]Self-Directed Learning Readiness Scale		
[b]Self-Determination Index		

There was no group by time interaction (p = .313) in the SDLRS or SDI (p = .330) ANOVA (Table 3) indicating no significant change in the relationship between the scores of DPT and MOT students over time. There were no significant differences in self-directed learning or self-determination between DPT and MOT students at pre-test or post-test. However, results of the ANOVA did support a significant difference ($p < .001$) between the pre-test and post-test scores for both DPT and MOT students with each instrument (Table 3). The effect size for the SDLRS was $d = 0.022$ and the effect size for the SDI was $d = 0.032$. According to Cohen (1988), this is a small effect.

Table 3. *Results of the Mixed Model ANOVA*

	df	Mean Square	F	Significance
PrePost SDLRS mean	**1**	**1630.26**	**17.92**	**.001***
PrePost SDLRS mean* by profession	**1**	**93.46**	**1.03**	**.313**
PrePost SDI mean	**1**	**23.94**	**12.93**	**.001***
PrePost SDI* by profession	**1**	**1.77**	**.96**	**.330**
***Significant at $p \leq .05$**				

The difference between groups for pre-test and post-test SDLRS sample mean scores was not significant. Both groups did demonstrate an increase in the SDLRS mean scores from pre-test to post-test (Fig. 1) and an increase in SDI scores from pre-test to post-test (Fig. 2).

Discussion

This study examined the impact of the final clinical experience and the self-directed learning readiness and self-determination for physical therapy and occupational

therapy students enrolled in an entry-level educational program. The hypothesis that there would be a significant difference in student scores on the SDLRS and the SDI

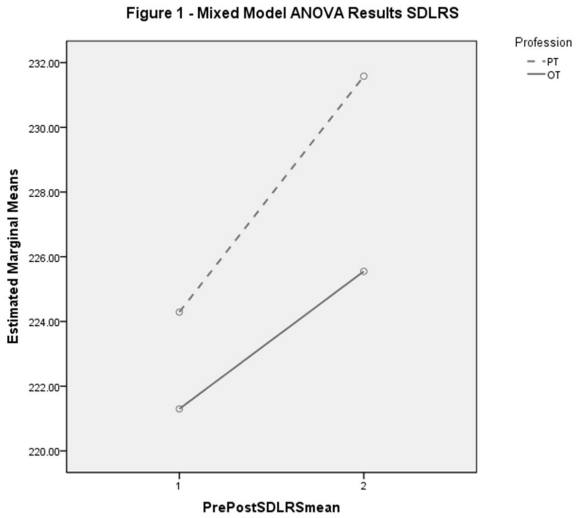

Figure 1. *Results of the mixed model ANOVA representing the SDLRS scores between groups and over time.*

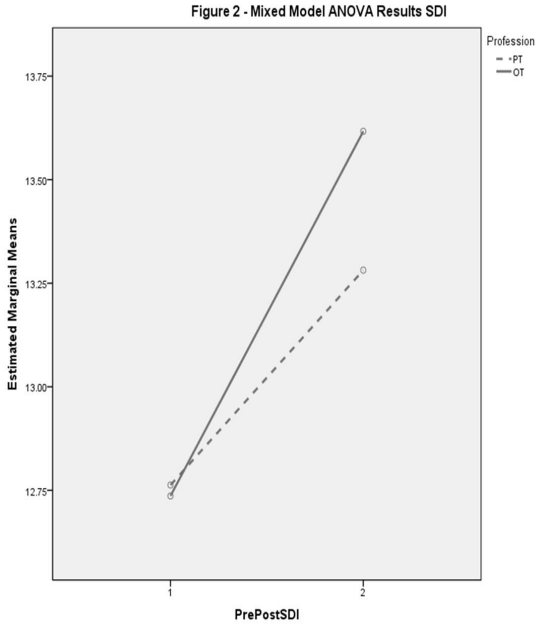

Figure 2. *Results of the mixed model ANOVA representing the SDI scores between groups and over time.*

before and after the students' final clinical experiences was supported. Both DPT and MOT students were found to have a statistically significant increase in their mean SDLRS and SDI scores following the completion of the final clinical affiliation or fieldwork. The results of this study are consistent with the null hypothesis of no statistical difference between DPT and MOT students for their mean SDLRS scores at

pre-test or post-test. No significant group by time interaction was revealed for this sample of professional students.

In order for educators to structure curricula to meet the entry-level educational standards set forth by accrediting bodies, they must evaluate students in a variety of ways. National certification exams ensure that students have obtained a satisfactory mastery of content knowledge to perform as safe and effective practitioners. Educational programs must show evidence that the students have achieved competence in performing the psychomotor skills necessary for their profession. Measures such as GPA, certification exams, and clinical performance tools represent a student's skill and knowledge at a given point in time. Measures that further describe the learning profile of young professionals can provide insight to the capacity that these students may have to continue to learn.

The final clinical experience represents the opportunity for entry-level DPT and MOT students to integrate their coursework and apply their skills in a real-life setting. The clinical environment also affords students the opportunity to self-evaluate their learning needs, and in conjunction with their clinical instructor, formulate learning goals, identify appropriate resources for learning, and evaluate their learning outcomes as related directly to the care of their patients. This is the very definition of self-directed learning. This study supported that the curricular programs at the entry-level DPT and MOT programs sampled are adequately preparing their students with regard to self-directed learning readiness. The pre-test SDLRS scores for the DPT and MOT students indicated that both groups were "average" in self-directed learning as compared to other adult learners. Both groups improved significantly for the SDLRS at post-test, indicating that the final clinical experience improves self-directed learning readiness for DPT and MOT students. The post-test mean values for the DPT group moved their level of self-directed learning readiness to "above average" (Guglielmino, 2010).

Linares (1999) surveyed nursing and other healthcare students using the SDLRS. This study included a sample of PT (n = 31) and OT (n = 31) students. Linares did not report mean values on the SDLRS, but the highest percentage of PT and OT students in that study were categorized as having average self-directed learning readiness. The mean SDLRS scores in the current study were lower at pre-test and post-test for both OT and PT students than the mean value of 235.81 reported for medical students (Shokar et al., 2002). However, the mean SDLRS scores in this study were higher than those reported by Kell and Van Deursen (2002) in their longitudinal analysis of one PT program. Huynh et al. (2009) utilized a modified version of the SDLRS previously used in the nursing literature to evaluate the impact of the advanced pharmacy practice experiences on self-directed learning readiness of 47 PharmD students. In contrast to the results of this study, Huynh and colleagues found no significant difference in the self-directed learning readiness of the pharmacy students after their clinical experiences.

The self-determination index (SDI) scores in this study increased from pre-test to post-test for both the DPT and MOT students. Improved SDI scores indicate that the students became more self-determined in their levels of academic motivation and thus progressed toward a higher level of intrinsic motivation. Once again, there was no significant difference between DPT and MOT students for levels of academic motivation. The mean values for the DPT and MOT students were higher than the mean value of 7.30 reported for graduate business and education students (Hegarty, 2010).

Overall, the results of this study support clinical education as a vital component to the development of self-directed learning readiness for entry-level DPT and MOT students. It appears that opportunities to identify what they did or did not know as the students evaluated and treated patients served to increase DPT and MOT student's readiness for self-directed learning. This study has relevance to physical therapy and occupational therapy educators for curriculum evaluation and for supportive data to accrediting bodies.

Perhaps the biggest limitation of this study is the reliance upon a self-report measure for data. The DPT group was also larger than the MOT group and this may have improved the chances of finding statistical significance within the DPT group for all variables. Data were collected from two institutions and therefore, the data may not be generalizable beyond these institutions. Also, as with any test-retest design, the improvement in SDLRS or SDI scores may have been due to time and maturity of the students rather than the influence of the clinical education experience.

A suggestion for future research is a longitudinal analysis of SDLRS or SDI scores at various points within the curriculum. It may also be useful to correlate the SDLRS or SDI score to student GPA or certification exam pass rates to provide educators with increased insight to areas that could be targeted for improvement with individual students. In addition, these measurement tools could be of value as a means to evaluate more student-centered pedagogies that mimic the clinical environment and the decision-making that appeared to improve the SDLR and SDI of subjects in this study.

This study supported the clinical education experience as a component of the curriculum that improves the self-directed learning readiness and self-determination of entry-level DPT and MOT students. Inventories such as the SDLRS and the AMS may provide educators with an improved perspective on the learning needs of their students and the methods best suited to developing lifelong learning skills within those students.

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Shelley Payne (spayne@otterbein.edu) is an assistant professor at Otterbein University in Health and Sport Sciences and was a postprofessional student at the University of Indianapolis at the time this study was conducted.
Peter Rundquist (prundquist@uindy.edu) is an associate professor at the University of Indianapolis and was the Director of the Krannert School of Physical Therapy's Postprofessional Program at the time this study was conducted.
William V. Harper (wharper@otterbein.edu) is a professor in Mathematical Sciences at Otterbein University.
Julie Gahimer (jgahimer@uindy.edu) is a professor at the University of Indianapolis.