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# Self-directed Learning Readiness of Extension Clientele in Doctor Arroyo, Nuevo Leon, Mexico[1]

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## Abstract

*The purpose of this study was to describe the level of self-directedness of selected extension clienteles in Doctor Arroyo, Nuevo Leon, Mexico. The population for this study included 44 farmers and ranchers attending participatory rural development workshops near Doctor Arroyo, Nuevo Leon, Mexico. Data were collected through hand delivered questionnaires. Overall, research participants mean Self-directed Learning Readiness Scores (SDLRS) were similar to the worldwide adult mean. Participants' individual scores, however, tended to be either below average or above average. An implication exists that both pedagogically and andragogically based teaching methods need to be used by agricultural and extension educators to educate this particular clientele group.*

Keywords: Self-directed learning, Mexico, extension, rural communities, groups, innovation

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## Introduction

Agricultural and extension educators rely on a variety of teaching methods to educate their clientele. Worldwide, the implementation of distance education, through various methods, is changing education. More learning in the future will be based on self-directed learning skills and activities in formal and non-formal educational settings. Alexander and Murphy (1998) identified one of the five learner-centered principles in learning as follows: "learning is as much a socially shared undertaking as it is an individually constructed enterprise" (p.39). Kroma (2003) found that for farmers in central Ghana, social learning was a critical component to innovative farming practices. Wingenbach, et. al. (2003) noted that social learning can be enhanced for agricultural education undergraduate students through out-of-country experiential learning situations. Rola, Jamias, and Zuizon (2002) stated that for experiential learning experiences to be effective they must be developed around the social context in which they are being carried out.

There is a growing trend of social and technological change and innovation. Knowledge and information are regarded as global public resources, valuable assets, power, and the means to enhance the learning environment and support experience on which we can build a better world (World Science Forum, 2003). Cross (1981) suggested learning continues throughout life, as each person becomes more capable of directing his own learning. Learning takes place constantly in a knowledge and information-based society. Adult educators, such as extension personnel, can be perceived as change agents, as they aid adults in becoming lifelong learners and reaching their educational goals (Lane, 2004). Lindner, Dooley, and Wingenbach (2003) noted that learning strategy skills was a key competency for extension educators.

Self-directed approaches to teaching and learning are consistent with the goals of andragogy and result in deeper and more meaningful learning (Knowles, Holton, & Swanson, 1998). This approach also promotes the lofty premise of individuals controlling their own learning in a meaningful context. As agricultural and extension professionals, we aspire to help learners take responsibility for their own learning (Grow, 1991). Effective educators should attempt to design and deliver individualized instructional sequences to provide the greatest opportunity for a learner's growth. Professional educators need to tailor their teaching based on learners' self-directedness or degree of dependency as the situation requires. The theoretical framework for this study is grounded by Guglielmino's (1989) research on self-directed learning and Knowles' (1990) theory of adult learning (*Andragogy*).

## Theoretical Framework

The theoretical framework of this study is based on understanding and facilitating self-directed learning abilities as a component of adult learning (Brookfield, 1986) and continues to be a goal in today's educational system (Candy, 1991). Knowles (1975, 1980) theory of self-directed learning, when melded together with andragogy, produces a readily identifiable and workable philosophy of learning and teaching. Brockett and Hiemstra (1991) defined self-direction in learning as concept that recognizes the learner taking responsibility internally for the learning process. Self directed learning requires investigation of learning needs, developing learning goals, identifying resources, selecting appropriate learning strategies, and evaluation of learning outcomes. Knowles (1975) purports adults experience natural psychological development through self-directed learning. In viewing self-directed learning, he believed learning could be accomplished on one's own or with the support of other learners and instructors. Grow (1991) supported Knowles' belief by suggesting The Staged Self-Directed Learning (SSDL) model has a form educators can use to help learners be developed into self-directed learners within the formal learning process. Grow emphasized that effective teachers consider the learner's stage of self-direction while matching their teaching strategies with the learners learning styles.

In Knowles' (1990) seminal book, "The Adult Learner: A Neglected Species," he noted that the appropriateness of teaching methods were contingent on students' maturity and degree of dependency. Pedagogical approaches (teaching children) are appropriate for students with high degrees of dependency. Knowles (Knowles, Holton, & Swanson, 1998) noted:

> The pedagogical model assigns to the teacher full responsibility for making all decisions about what will be learned, how it will be learned, when it will be learned, and

> if it has been learned. It is teacher-directed education, leaving to the learner only the submissive role of following a teachers' instructions. (p. 62)

As a student gets older, the degree of dependence tends to lower and andragogical approaches (teaching adults) become more appropriate. Knowles, Holton, and Swanson, (1998) continued:

> But is seems that the process of gaining a self-concept, of self-directedness, starts early in life and grows cumulatively as we biologically mature, start performing adult-like roles, and take increasing responsibility for making our own decisions. So we become adult by degree as we move through childhood and adolescence, and the rate of increase by degree is probably accelerated if we live in homes, study in schools, and participate in youth organizations that foster our taking increasing responsibilities. (p. 64)

Guglielmino (1977) finds self-directed learners to be independent in their learning, intellectually curious, un-intimidated by the subject, and possessing high levels of closure. Gillis and English (2001) noted that during informal learning experiences, adults were "continuously learning and becoming independent in and self-directed in their learning" (p. 3). Gills and English also pointed out that 90% of adults participate in informal learning for work, and that, on average, they spend 6 hours per week on informal learning. Richardson (2004) claims, that in extension programs, reinforcement of learning "provides informational, emotional, or social support for both the learner and the information provider...This reinforcement may be personally directed from the educator to learner or may be provided in educational materials used for self-directed guidance of learning" (p. 6).

Richardson (2004) noted that printed extension materials including fact sheets, bulletins, notebooks, or other detailed educational materials can give the learner a chance to "review or study aspects in which clarification or further explanation is needed" (p. 6).

The cultural and ecological characteristics of the villages where the study took place may relate to the villagers' tendency toward self-directed learning. Tuttle (2003) and Tuttle, Lindner and Dooley (2004), conducted a qualitative study in the same municipality as this study. Tuttle, Lindner, and Dooley described the villages:

> Puentes, a community with irrigation, made their living from alfalfa and vegetable crops as well as the dairy goat and livestock production, while La Roca, a community in a hilly area, raised dairy cattle for cheese production. In the past 100 years, both communities have evolved from life ruled by the oppressive hacienda plantation and ranch owners, followed by subsistence agriculture, and then by integration into the modern market economy. (p. 1, 4)

A group of ten extensionists served these communities, providing technical assistance, primarily in agriculture. These extensionists were a private enterprise funded through government contracts. Community members in two of the villages near the town of Dr. Arroyo that participated in separate focus groups of men and women, preferred learning in groups, with the exception of one group of men in one of the villages. Tuttle (2003) also surmised that, historically, the communities had most likely developed a sense of group cohesion in order to survive under the oppressive hacienda regime.

The villagers also preferred delivery methods that were hands-on, social in nature, and provided an opportunity for innovation. They viewed delivery strategies that might be used as self-directed learning tools, such as pamphlet, videotape, courses and distance education as less important than more hands-on, social methods, such as field trip, demonstration, or research center visit. Also, funding was not available to extensionists in these communities to develop some tools that might be useful for self-directed learning (Tuttle, 2003).

## Purpose

The purpose of this study was to describe the level of self-directedness of selected extension clientele in villages surrounding Doctor Arroyo, Nuevo Leon, Mexico. The objectives of the study were:

- Describe selected extension clientele by their self-directed learning readiness score (SDLRS);
- Describe SDLRS by age;
- Describe SDLRS by gender; and
- Compare participants' SDLRS to the adult population mean.

## Methods and Data Sources

The population for this study included 44 farmers and ranchers attending participatory rural development workshops near Doctor Arroyo, Nuevo Leon, Mexico. The researchers used Guglielmino's (1989) Self-directed Learning Readiness Scale (SDLRS) to describe participants' level of self-directedness. Local extension personnel in the villages near Dr. Arroyo administered the SDLRS.

SDLRS consists of a 34-item scale with five point Likert-type responses and was designed to indicate an individual's current level of readiness for self-direction in learning. The instrument has been shown through numerous studies to be a valid and reliable predictor of adult readiness for self-direction in learning (Guglielmino, 1997; Delahaye & Smith, 1995). Respondents' level of self-directedness was categorized as either above average (139-170), average (120-138), or below average (34-119). Reliability of the scale, using the Pearson split-half method was estimated at $r = .85$. An alpha level of .05 was used for all statistical tests and was set *a priori*.

## Results

*Objective One*

The first objective of this study described selected extension clientele ($n = 44$) by their SDLRS. The mean score on the Self-directed Learning Readiness Scale was 118.1 with a standard deviation of 23. The range was 91, with a minimum of 74 and a maximum of 165.

*Objective Two*

The second objective described SDLRS by age. Table 1 depicts the age categories of respondents. Approximately one-fifth (20.5%) of the respondents was between the ages of 20-33 and had a mean score of 125.9 ($SD = 20.7$). The largest group of respondents fell between the ages of 34-41 and comprised around one third (29.5%) of the group with a mean score of 126.0 ($SD = 25.2$). Slightly more than one-fifth (22.7%) of the respondents were in the 42-51-age category averaging a score of 108.1 ($SD = 20.2$). The final group of 27.3% ranged in age from 53-79 and had a mean score of 111.9 ($SD = 21.9$).

Table 1

*Self-directed Learning Readiness Score by Age*

| Age | *f* | % | *M* | *SD* |
|---|---|---|---|---|
| 20-33 | 9 | 20.5 | 125.9 | 20.7 |
| 34-41 | 13 | 29.5 | 126.0 | 25.2 |
| 42-51 | 10 | 22.7 | 108.1 | 20.2 |
| 53-79 | 12 | 27.3 | 111.9 | 21.9 |
| Total | 44 | 100.0 | 118.1 | 23.0 |

*Note*. SDLRS consists of a 34-item scale with five point Likert-type responses. Scale, 1=I never feel like this, 2=I feel like this less than half the time, 3= Half the time I feel this way, 4= I usually feel this way, 5= I feel like this all the time.

*Objective Three*

The third objective described the SDLRS by gender. Table 2 shows the gender of the participants. As illustrated, the majority of respondents 36 (81.8%) were males and 8 respondents (18.2%) were female. The mean score for males was 118.5 ($SD = 23.1$) and for females it was slightly lower at 116.0 ($SD = 24.0$).

Table 2

*Self-directed Learning Readiness Score by Gender*

| Gender | *f* | % | *M* | *SD* |
|---|---|---|---|---|
| Male | 36 | 81.8 | 118.5 | 23.1 |
| Female | 8 | 18.2 | 116.0 | 24.0 |
| Total | 44 | 100.0 | 118.1 | 23.0 |

*Note*. SDLRS consists of a 34-item scale with five point Likert-type responses. Scale, 1=I never feel like this, 2=I feel like this less than half the time, 3= Half the time I feel this way, 4= I usually feel this way, 5= I feel like this all the time.

*Objective Four*

The fourth objective compared participants' SDLRS to the adult population from previous studies of the SDLRS (Guglielmino, 1997; Delahaye & Smith, 1995). SDLRS scores for participants ($M = 118.2$; $SD = 23.5$) in the study are visually depicted in Figure 1. The mean score for all adults, who have taken, the SDLRS is 129.0 ($SD = 18.5$). The mean SDLRS scores for participants in this study were significantly lower than those of the mean adult population, $t = 2.48$, $p < .05$. In this

study, participants' SDLRS scores did not differ by gender, $t = .78$, $p > .05$. Participants' SDLRS scores did differ by age, $F = 1.88$, $p > .05$.

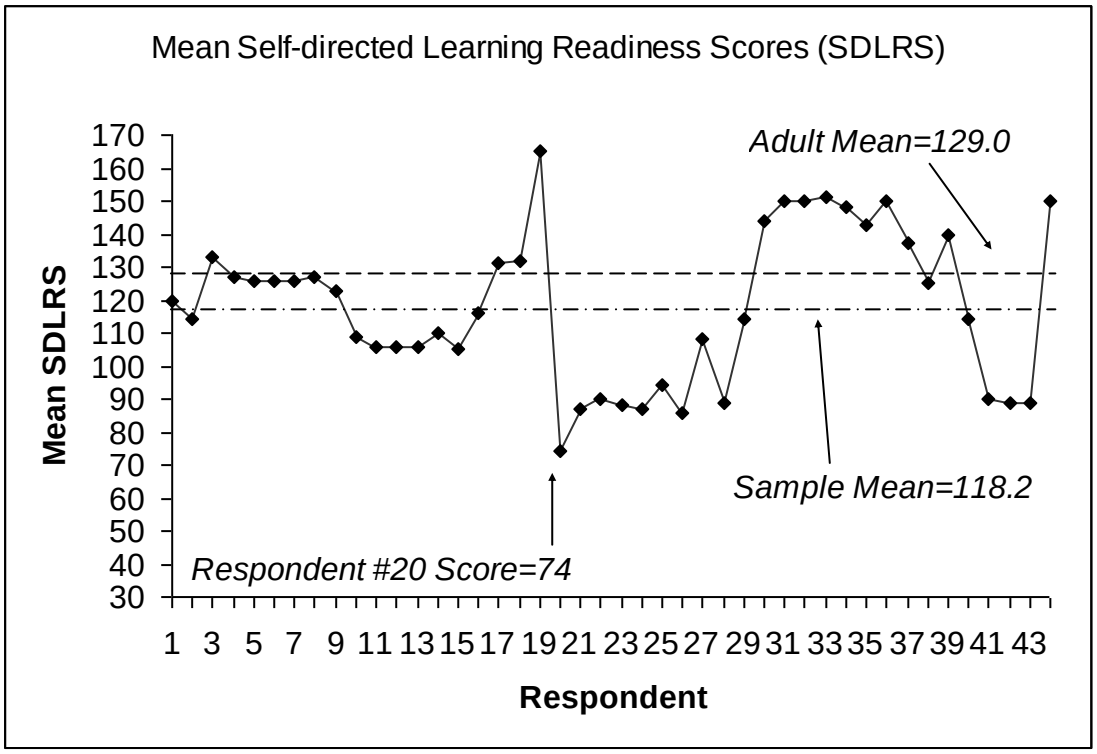


*Figure 1*. Mean self-directed learning readiness scores of survey participants compared to the adult population mean (Guglielmino, 1997; Delahaye & Smith, 1995).

**Conclusions and Discussion**

Agricultural and extension agents employ a variety of educational methods to teach their clientele. As the innovation of distance education diffuses more rapidly throughout the world, these clientele will rely more on their self directed learning competencies than ever before for both formal and non formal education. A variety of researchers including Brookfield (1986), Grow (1991), Guglielmino (1989), and Knowles (1990) have noted the need to understand and develop learners' self directedness in order to foster deeper and more meaningful learning in both formal and non-formal educational settings.

The findings of this study show that the 44 farmers and ranchers attending participatory rural development workshops near Doctor Arroyo, Nuevo Leon, Mexico had similar levels of SDLRS, as did the worldwide adult mean. The average SDLRS for study participants was 118.2. Twenty-one (47.7%) participants had a below average SDLRS; 21 (47.7%) participants had an above average SDLRS; and two (4.6%) participants had an average SDLRS. Although the mean SDLRS for this particular population was average, the participants' scores tended to be skewed to below average and above average. An implication exists that a variety of teaching methods including both pedagogical methods and andragogical methods are warranted.

Andragogical methods can be used for those exhibiting average or above average levels of self-directedness and pedagogical methods, for those exhibiting below average levels of SDLRS. The villagers who exhibited a lower SDLRS score may reflect the propensity of community members to work in groups, described by Tuttle (2003), due their cultural and historical background, rather than be self-directed in their learning. The villagers' tendency toward innovation that Tuttle, Dooley and Lindner (2004) found may be associated with the above average SDLRS that some villagers in these communities displayed. For this latter group, educators can use a variety of strategies such as facilitated discussion, active involvement in creative thinking and problem

solving, and team projects to accomplish the stated objective of the learning experience and to increase the learners' level of self-directedness. These methods do not require the level of funding or technical assistance needed to develop some of the other self-directed learning tools such as distance education and videotapes, and would be appropriate for the local communities in the study. These methods also align well with the villagers' propensity towards group work. A recommendation for future study includes reviewing extension programs for their efficacy in terms their adaptability to train a variety of learners. It is incumbent upon extension that an allowance for different learning methods be incorporated in all programs undertaken to enable their largest applicability for the users of their service.

There were no statistically significance differences in SDLRS by age of participants. This is not necessarily suggested by Knowles. In this study, self-directedness was not shown to be a function of the increase in the participant's age. Further research should seek an understanding of this issue.

There were no statistically significance differences in SDLRS by gender. Women and men had tended to have similar SDLRS. Implications exist for using andragogy and pedagogy as needed for both male and female populations. It is good to know that instructors in situations similar to this, who have combined male and female audiences, can focus on the content of the curriculum rather than the methodology of instruction.

The educational importance of this study is focused on two areas: needs assessment and self-directed learning. The results of this study will help extension professionals in Doctor Arroyo, Nuevo Leon, Mexico better understand their clienteles' ability to use self-directed approaches to learning. An implication exists that for extension audiences, context, culture, and geography all influence the level of self-directedness.

## References


Alexander, P. A., & Murphy, P. K. (1998). The research base for APA's learner-centered psychological principles. In N. M. Lambert, & B. L. McCombs (Eds.), *Issues in School Reform: A Sampler of Psychological Perspectives on Learner-Centered Schools*.

Brockett, R. G., & Hiemstra, R. (1991). *Self-direction in adult learning: Perspectives on theory, research, and practice*. New York: Routledge.

Brookfield, S. (1986). *Understanding and facilitating adult learning*. San Francisco: Jossey-Bass.

Candy, P. C. (1990). The transition from learner-control to autodidaxy: More than meets the eye. In H. B. Long (Ed.), *Advances in research and practice in self-directed learning*. Norman, OK: Oklahoma Research Center for Continuing Professional and Higher Education of the University of Oklahoma.

Candy, P. C. (1991). *Self-direction for lifelong learning: A comprehensive guide to theory and practice*. San Francisco: Jossey-Bass.

Closson, R. B. (1996). The learning society: How shall community colleges respond? *Community College Review, 24*(1), 3, 18.

Cross, K. P. (1981). *Adults as learners: increasing participation and facilitating learning*. San Francisco: Jossey-Bass.

Delahaye, B. L., & Smith, H. E. (1995). The validity of the learning preference assessment. *Adult Education Quarterly, 45*, 159-173.

Gillis, D. E., & English, L. M (2001). Extension and health promotion: An adult learning approach. *Journal of Extension, 39*(3), 1-12.

Grow, G. O. (1991). Teaching learners to be self-directed. *Adult Education Quarterly, 41*(3), 125-149.

Guglielmino, L. M. (1978). Development of the self-directed readiness scale (Doctoral dissertation, University of Georgia, 1977). *Dissertation Abstracts International* 38, 6467A.

Guglielmino, L. M. (1989). Development of an adult basic education form of the self-directed learning readiness scale. In H. B. Long & Associates, *Self-directed learning: Emerging theory and practice*. Norman, OK: Oklahoma Research Center for Continuing Professional and Higher Education. University of Oklahoma.

Guglielmino, L. M. (1997). Reliability and validity of the self-directed learning readiness scale and the learning preference assessment. In H. B. Long & Associates, *Expanding horizons in self-directed learning* (p. 209-222). Norman, OK: Public Managers Center, College of Education, University of Oklahoma.

Knowles, M. S. (1975). *Self-directed learning: A guide for learners and teachers*. Chicago: Follett.

Knowles, M. S. (1990). *The adult learner: A neglected species*. Houston: Gulf.

Knowles, M. S., Holton, E. F., III, & Swanson, R. A. (1998). *The adult learner: The definitive classic in adult education and human resource development*. Houston: Gulf.

Kroma, M. (2003). Participation and social learning: Supporting farmer innovation in central Ghana. *Journal of International Agricultural and Extension Education, 10*(1), 43-49.

Lane, R. (2004). Developing lifelong learners. *MetroNews 3*(3), 1-3. Retrieved June 14, 2004, from http://www.aces.edu/urban/metronews/vol3no3/Learners.html

Lindner, J. R., Dooley, K. E., & Wingenbach, G. J. (2003). A cross-national study of agricultural and extension education competencies. *Journal of International Agricultural and Extension Education, 10*(1), 51-59.

Richardson, J. G. (2004). Extension education: Process and practice. *North Carolina Cooperative Extension Service document SD-7.* Retrieved June 14, 2004, from www.ces.ncsu.edu/resources/education/sd7/

Rola, A. C., Jamias, S. B., & Quizon, J. B. (2002). Do farmer field school graduates retain and share what they learn? *Journal of International Agricultural and Extension Education, 9*(1), 65-76.

Tuttle, S. L. (2003). *Gender roles and participatory delivery strategies for selected villagers in northeastern Mexico.* Unpublished dissertation, Texas A&M University, College Station, TX.

Tuttle, S., Lindner, J., & Dooley, K. (2004). Men, women and participatory delivery strategies for selected villagers in northeast Mexico. *Journal of the Association for International Agricultural Extension, 11*(1), 61-70.

Wingenbach, G. J., Boyd, B. L., Lindner, J. R., Dick, S., Arispe, S., & Haba, S. (2003). Students' knowledge and attitudes about international agricultural issues. *Journal of International Agricultural and Extension Education, 10*(3), 25-35.

*World Science Forum.* (n.d.). Retrieved December 29, 2003, from http://sciforum.dsd.sztaki.hu/e-forum/overview.php?topic_id=13