

Sense of Community (SOC) as a Predictor of Adult Learner Persistence in Accelerated Degree Completion Programs (ADCs)?

Michael O. Minor, EdD

mominor1@email.phoenix.edu

The University of Phoenix

John Sperling School of Business and Technology

Adult Higher Education Alliance Annual Conference

October 6, 2010

The Adult Learner: Basic Demographic Characteristics

- ▶ 25 and older
- ▶ 53% women
- ▶ 21% African American
- ▶ 60% of Hispanic and 67% of African American college students are women

Source: Tamassia et al (2007)

Adult Learner Challenges

- ▶ Often associated with time constraints
- ▶ Need right kind of academic programs
- ▶ Need right kind of support systems
- ▶ More research needed

Accelerated Degree Completion Programs

- ▶ Offer flexible schedules with compressed class schedules
- ▶ Some question efficacy of these type programs
- ▶ Even with these programs adult learner persistence still problematic for colleges

Sense of Community (SOC)

- ▶ Sense of community is associated with several adult learner positives:
 - ▶ Learning
 - ▶ Persistence
 - ▶ Goal Achievement

Theoretical Framework

- ▶ **McMillan & Chavis (1986) Sense of Community: A Definition and Theory**
 - ▶ Seminal work in the field
- ▶ **Knowles (1980) and Knowles and Associates (1984): Andragogy**
 - ▶ Adult learning styles
- ▶ **Sociology and social psychology**
 - ▶ Provide an overarching frame for the context of the theories and models researched

Sense of Community

It is a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together

(McMillan, 1976, p. 9)

Andragogy

- ▶ *Regarding the concept of the learner.* The adult learner is responsible for making personal decisions in day-to-day life, in many cases decisions that also affect others. Similarly, adults are assumed to prefer self-direction in determining the goals and outcomes of their learning.
- ▶ *Regarding the role of the learners' experience.* Adults bring a vast reservoir of experience to the learning situation that should be capitalized on. They also value learning through direct experience.
- ▶ *Regarding readiness to learn.* Adults are presumed to become ready to learn when they experience a need to know or do something to perform more effectively.
- ▶ *Orientation to learning.* Because adults typically enter a learning situation after they experience a need in their life, they are presumed to bring a task- or problem-centered orientation to learning. This is in contrast to the subject-centered approach associated with traditional, pedagogical approaches to education.
- ▶ *Regarding motivation to learn.* The andragogical model presumes that although adults will respond to external motivators such as a job promotion, the most potent motivators are internal (Ross - Gordon, 2003, pp. 43-44).

Sociology & Social Psychology

Sociology

- ▶ “Systematic and scientific study of human social life...
- ▶ Sociologists study people as they form groups and interact with one another...
- ▶ Groups...may be small....or large...
- ▶ Sociology places special emphasis on studying societies, both as individual entities and as elements of a global perspective”

Source: Spark Publishing (2006), p. 1

Sociology & Social Psychology

Social Psychology

- ▶ Understanding SOC requires an examination of intrapersonal and interpersonal feelings and interactions.
- ▶ Social psychology
 - ▶ Field of study providing such an examination
 - ▶ “Study of how people think about, influence, and relate to one another” (Social Psychology Network, 2008, ¶ 1)
 - ▶ “...Attempts to understand and explain how the thought, feeling, and behavior of individuals are influenced by the actual, imagined, or implied presence of others” (Allison, 2002, ¶ 19)

Purpose of Study

- ▶ Quantitative Study
- ▶ Use review of the literature to determine the prevalent instruments for measuring SOC
- ▶ Compare and contrast the prevalent instruments
- ▶ Determine if any differentiation exists in measurements of SOC for adult learners in an ADCP with respect to age and gender
- ▶ Develop an integrated model (IM) measuring SOC using factor analysis
- ▶ Position IM as a predictor of ADCP student persistence

Research Questions

- ▶ What are the prevalent instruments in the literature for measuring Sense of Community (SOC)?
- ▶ How do these instruments compare and contrast in their measurements of Sense of Community for adult students in an Accelerated Degree Completion Program (ADCP)?
- ▶ Is there any differentiation in measurements of SOC for adult students in an ADCP with respect to age and gender?
- ▶ Is it possible to use factor analysis to develop a more efficacious integrated model to measure SOC using the prevalent instruments verses the two instruments separately?

Significance of Study

This study hoped to:

1. Reduce the paucity of research involving comparisons of Sense of Community Index (SCI) and Classroom Community Scale (CCS) as they relate to student persistence
2. Develop an integrated SOC measurement model involving the SCI and CCS
3. Design a model with ease of use but efficacious for institutional researchers

Limitations

- ▶ The results of this research can only be generalized to the student population in ADCP at the study institution
- ▶ Inferences from this study may be of interest to other colleges with similar demographics, enrollment, Carnegie Classification, and/or same type programs

Delimitations

- ▶ This research will be primarily concerned with the measurement of adult learners' sense of community
- ▶ The major concern will be the absence or presence of a Sense of Community
- ▶ Analysis in this research will suggest the use of SOC to assess persistence rates of individuals or groups of students.

Research Question Analysis Undertaken: Question 1

- ▶ What are the prevalent instruments in the literature for measuring Sense of Community (SOC)?

Research Question Analysis Undertaken: Question 1

- ▶ Most prevalent SOC instruments:
 - ▶ Sense of Community Index (SCI)
(McMillan, 1976)
 - ▶ Cohort focused
 - ▶ Classroom Community Scale (CCS)
(Rovai, 2002)
 - ▶ Course focused

Dependent Variable

- ▶ Combined SCI and CCS scores for Sense of Community (SOC)
- ▶ SOC was associated with several positive outcomes for adult learners:
 - ▶ Persistence
 - ▶ Learning
 - ▶ Goal achievement

Independent Variables

34 Independent Variables

- ▶ (2) Demographic variables: age and gender
- ▶ (12) SCI questions categorized as:
 - ▶ Membership
 - ▶ Influence
 - ▶ Reinforcement of needs
 - ▶ Shared emotional connection
- ▶ (20) CCS questions categorized as:
 - ▶ Connectedness
 - ▶ Learning

Setting for the Study

- ▶ Historically Black College (HCBU)
- ▶ Private, Liberal Arts
- ▶ Southeast U.S.
- ▶ Fall Semester 2008
- ▶ 825 Students
- ▶ Religious Affiliations: United Church of Christ and Baptists
- ▶ ADCP in business since 1995

Data Collection

- ▶ ADCP staff disseminated questionnaires and consent forms to students in each ADCP class during the week of September 30 to October 4, 2008
- ▶ ADCP staff and faculty suggested that Scantron sheets not be used over concerns about students managing multiple pages including tracking answer response lines on a separate sheet
- ▶ Students darkened ovals corresponding to their responses

Data Collection

- ▶ Students signed consent forms and returned them to ADCP staff before completing the questionnaire
- ▶ They were each given a copy of the form to keep
- ▶ Not all students were present at the time of distribution.
- ▶ Of those present, no students opted not to participate.
- ▶ Forty-two of 55 students responded
- ▶ Had response rate of 76%
- ▶ Completed questionnaires collected and manually tabulated three times to ensure accuracy

Description of Respondent Demographics

- ▶ Consistent with national trends
 - ▶ Majority women (76%)
 - ▶ Most 25 and older (95%)

Research Question Analysis Undertaken: Question 2

- ▶ How do these instruments compare and contrast in their measurements of Sense of Community for adult students in an Accelerated Degree Completion Program (ADCP)?

Research Question Analysis Undertaken:

Question 2

- ▶ Multiple regression analyses used to predict the sense of community (SOC) measurement using the Classroom Community Scale (CCS) and the Sense of Community Index (SCI) and to see whether the SCI or the CCS offered additional predictive power beyond that contributed by the other instrument
- ▶ Analysis undertaken using *Cronbach's alpha* to assess reliability and establish internal consistency
- ▶ Calculated Pearson Product Moment Coefficient of Correlations for each independent variable to determine the strength of its linear relationship with the other independent variables.
- ▶ Analyzed with SPSS Statistics GradPack for Windows, Release 17.0

Research Question Analysis Undertaken: Question 2

- ▶ Classroom Community Scale (CCS)
 - ▶ Cohen's $f^2 = 19$
 - ▶ Offered predictive power beyond that contributed by SCI
 - ▶ Cronbach's alpha = .81
 - ▶ 190 correlations, 72 significant ($p < .05$), 31% were .30 or higher

Research Question Analysis Undertaken: Question 2

- ▶ Sense of Community Index (SCI)
 - ▶ Cohen's $f^2 = 4.56$
 - ▶ Offered predictive power beyond that contributed by SCI
 - ▶ Cronbach's alpha = .78
 - ▶ 66 correlations, 34 significant ($p < .05$), 44% were .30 or higher

Research Question Analysis Undertaken: Question 2

What is the meaning of these findings?

- ▶ CCS is a much better predictor of SOC than SCI
- ▶ Both have large effect sizes
- ▶ Merits to both instruments
- ▶ Two instruments approach sense of community from slightly different perspectives
 - ▶ SCI uses language about cohorts
 - ▶ CS refers to individual courses

Research Question Analysis Undertaken:

Question 3

- ▶ Is there any differentiation in measurements of SOC for adult students in an ADCP with respect to age and gender?

Research Question Analysis Undertaken: Question 3

Four Hypotheses

1. Female students had higher SOC scores than male students
2. Older students would have higher SOC scores than younger students
3. Students having attended two or more semesters would have higher SOC scores than those attending one semester
4. Students attending during the week would have higher SOC scores than those attending on Saturdays

Research Question Analysis Undertaken: Question 3

Four Hypotheses

- ▶ Only significant for SCI
- ▶ Two hypotheses significant:
 - ▶ Tenure in program (eta square index = 5%)
 - ▶ Class meeting time (eta square index = 12%)
- ▶ Tenure in program
 - ▶ Longer students together, the stronger bond developed
- ▶ Class meeting time
 - ▶ Students attending during the week had more challenges than those for Saturday

Research Question Analysis Undertaken:

Question 4

- ▶ Is it possible to use factor analysis to develop a more efficacious integrated model to measure SOC using the prevalent instruments verses the two instruments separately?

Research Question Analysis Undertaken: Question 4

Developing an Integrated Model

- ▶ Only significant for SCI
- ▶ Two hypotheses significant:
 - ▶ Tenure in program (eta square index = 5%)
 - ▶ Class meeting time (eta square index = 12%)
- ▶ Tenure in program
 - ▶ Longer students together, the stronger bond developed
- ▶ Class meeting time
 - ▶ Students attending during the week had more challenges than those for Saturday

Factor Analysis

Minimum Sample Size: Solution 2/Zhao (2008)

Systematic methodology trumps sample size rules of thumb
(Zhao, 2008)

- Step 1. Kaiser-Meyer-Olkin (KMO) = .60 (model) achieved
- Step 2. Keep all variables with KMO \Rightarrow .60 (variable) leaving 20 variables (Table 11)
- Step 3. Check communalities of variables (keep .70 or higher) leaving 20 variables

Factor Analysis

Minimum Sample Size: Solution 2

- Step 4a. Used Scree plot to determine final number of factors
 - Final number: 2
- Step 4b. Dropped all factors with eigenvalues under 1.0
 - Leaving 7 factors

Factor Analysis

Minimum Sample Size: Solution 2

- Step 5. Dropped all factors with less than 3 variables using a loading size cut-off of .60
 - Overdetermination conducted using two types of factor rotation:
 - Varimax Rotation
 - Quartimax Rotation
 - Comparisons of results yielded 3 factors with 3 or more variables
 - Using the highest average loadings from factor rotations, 2 factors were identified

Research Question Analysis Undertaken: Question 4

Factor I Connectedness: Variables

- ▶ 4. I know most of the people in my cohort.
[membership/SCI, cohort]
- ▶ 6. Very few of my classmates know me.
[membership/SCI, cohort]
- ▶ 12. I expect to keep in touch with my cohort members for a long time. [shared emotional connection/SCI, cohort]
- ▶ 13. I feel that students in this course care about each other. [connectedness/CCS, course]
- ▶ 15. I feel connected to others in this course.
[connectedness/CCS, course]

Research Question Analysis Undertaken: Question 4

Factor 2 Goal Achievement: Variables

- ▶ 3. My classmates and I want the same things from the cohort. [reinforcement of needs/SCI, cohort]
- ▶ 10. It is very important to me to be a part of this particular cohort. [shared emotional connection/SCI, cohort]
- ▶ 21. I feel isolated in this course. [connectedness/CCS, course]
- ▶ 22. I feel reluctant to speak openly. [learning/CCS, course]

Implications and Further Research

- ▶ Need ongoing longitudinal research to track predictive power of SOC scores
- ▶ Efficacy of using factor analysis for small sample sizes
- ▶ Add additional demographic variables
- ▶ Based on prevalent adult learning theory; need for qualitative research to delve into the “why” of adult learner behavior
- ▶ SCL instrument revealed evidence that meeting time mattered

Implications and Further Research

- ▶ **Efficacy of Integrated Model (IM)**
 - ▶ Large effect size
 - ▶ SOC score integrates both cumulative and course, “snapshot,” measurement
 - ▶ Shorter than SCI and CCS
 - ▶ Less time to administer; less time to analyze

Implications and Further Research

- ▶ **Sense of Community (SOC)**
 - ▶ Robust measure
 - ▶ Associated with several positives:
 - ▶ Learning
 - ▶ Persistence
 - ▶ Goal Achievement
 - ▶ Possibly an early indicator of student persistence

Implications and Further Research

- ▶ **Efficacy of Integrated Model (IM)**
 - ▶ Acts as early on as a predictor of positive adult learner outcomes: persistence and learning
 - ▶ Can be used as a confirmation tool of positive outcomes especially persistence, learning, and goal achievement

References

- ▶ Allison, S. (2002). Glossary. Retrieved August 16, 2008 from <http://facultystaff.richmond.edu/~allison/glossary.html>.
- ▶ Garson, G. (2008) Factor analysis. Retrieved September 12, 2008 from <http://www2.chass.ncsu.edu/garson/pa765/factor.htm>.
- ▶ Knowles, M. (1980). *The Modern Practice of Adult Education: From Pedagogy to Andragogy, 2nd Edition*. Chicago: Follett, 1980.
- ▶ Knowles, M., and Associates (1984). *Andragogy in Action: Applying Modern Principles of Adult Learning*. San Francisco: Jossey-Bass, 1984.
- ▶ McMillan, D. (1976). *Sense of community: An attempt at definition*. Unpublished manuscript. Nashville, TN: George Peabody College for Teachers.
- ▶ McMillan, D. & Chavis, D. (1986). Sense of community: A definition and theory. *American Journal of Community Psychology*, 14, 1, pp. 6-23.

References

- ▶ Ross-Gordon (2003). Adult learners in the classroom. *New Directions for Student Services*, 102, Summer 2003, pp. 43-52.
- ▶ Rovai, A. (2002). Development of an instrument to measure classroom community. *Internet and Higher Education*, 5, pp. 197–211.
- ▶ Social Psychology Network (2008). Social psychology. Retrieved September 14, 2008 from <http://www.socialpsychology.org>.
- ▶ Sparks Publishing (2006). *Spark notes 101 sociology*. New York: Spark Publishing.
- ▶ Tamassia, C., Lennon, M., Yamamoto, K. & Kirsch, I. (2007). *Adult education in America: A first look at results from the adult education program and learner surveys*. Princeton, N.J.: Educational Testing Service.
- ▶ Zhao, N. (2008). The minimum sample size in factor analysis. Retrieved September 24 from <http://www.encorewiki.org/display/~nzhao/The+Minimum+Sample+Size+in+Factor+Analysis>.