

Scale Validation of Self-Directed Learning Readiness Among Commerce Undergraduates: A Focus on Self-Management and Desire for Learning

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Abstract

The Self-Directed Learning Readiness Scale was developed to assess students' readiness for self-directed learning (SDL) and help educators modify teaching strategies accordingly. This study aims to validate 'Self-management' and 'Desire for learning' scales for commerce students in Indian universities. An online questionnaire was administered to 81 Commerce Undergraduate students, consisting of 19 items across two subscales: Self-management (10 items) and Desire for learning (9 items). Confirmatory factor analysis was performed using AMOS (version 17) on two one-factor models due to the small sample size. Eight items were retained for the Self-management construct, with factor loadings ranging from 0.255 to 0.767. All nine items were retained for the 'Desire for learning' construct, with factor loadings ranging from 0.248 to 0.794. Model fit indices indicated good fit for both constructs: Self-management (RMSEA = 0.069, CMIN/DF = 1.385, p-value = 0.122) and Desire for learning (RMSEA = 0.042, CMIN/DF = 1.139, p-value = 0.282). The findings support the validity of these two constructs for commerce students in India. The validated scale can help instructors design and modify their pedagogy accordingly. This scale can be a useful tool for academicians in Indian universities in diagnosing students' learning needs and adapting teaching strategies accordingly, particularly

in light of the introduction of skill-based courses and elective papers in the National Education Policy 2020.

Keywords: *Self-directed learning readiness, Self-management, Desire for learning, Scale validation, AMOS, CFA*

Introduction

The Self Directed Learning Readiness Scale was developed among nursing students at University of Sydney in 2001 to help educators diagnose students' learning needs for modifying teaching strategies best suited to the students (M. Fisher et al., 2001) Self-directed learning (SDL) can be defined in terms of the amount of responsibility the learner accepts for his or her own learning. The self-directed learner takes control and accepts the freedom to learn what they view as important for themselves (M. Fisher et al., 2001).

Self-directed learning readiness among Commerce and Social Science students has not been studied in India although few studies in the field of medical education have been conducted. The students of Commerce differ in many respects from the students in the Medical field. Our undergraduate students are generally younger (17–20 years) than Western Medical students, more dependent on family and teachers, less independent on their own, more accustomed to rote learning and are less trained in SDL during their school years. The present study reports the findings of readiness for SDL among commerce students with respect to two constructs – Self management and Desire for learning.

Self-management involves the inner motivation that pushes students to take action, achieve goals, and keep moving forward, even when faced with obstacles and distractions. It is the foundation for obtaining good marks in college and achieving success in life. Desire for Learning refers to a student's intrinsic motivation and willingness to acquire new knowledge, develop skills, and seek understanding. This is a key factor for academic growth. Both self-management and desire for learning leads to self-directed learning activities .

This study aims to verify the validity and reliability of two constructs – self-management and desire for learning adapted for commerce/management education, addressing the need for a culturally relevant tool to assess self-directed learning readiness among commerce students in Indian University. The SDL scale may help teachers assess students' learning needs to be able to

implement teaching strategies best suited to the students.

According to Gopakumar et al.(2016) students generally adopt either of two types of learning: ‘surface’ learning aimed at passing the exams and ‘in-depth’ learning focusing on core concepts and their application. In India, many students adopt surface learning from a young age because they are conditioned to accept the information passed down by the teacher, and due to this, they often do not understand the need for self-learning. Measurement of SDLR among Indian students using a validated tool, could help the instructors to design and modify their pedagogy accordingly.

Data Collection

An online questionnaire was administered to the first, second and third year students of Maharaja Agrasen College, University of Delhi studying BCom (Hons) course. Google forms were forwarded by the researcher as per the technique of convenience sampling during the year 2024. Out of total number of 81 respondents who filled the forms, 45 (56%) were males, 36 (44%) were females.

Methodology

Two single factor models were tested using maximum likelihood method in confirmatory factor analysis (CFA), using the AMOS software (version 220). This approach allowed assessment of how well the data fitted the theoretical models. The separate analyses of the two one-factor congeneric models were chosen over a higher-order or multi-factor model as a result of the relative small sample size. A sample size of 81 participants limited the analysis to one factor model and did not allow for the examination of relationship between items across two constructs.

The Self-Directed Learning Readiness Scale as given by Fisher et al. (2010) M. J. Fisher & King, 2010) was partially adopted. It consisted of a total of 19 items across two subscales: Self-management (10 items), Desire for learning (9 items). Two items were negatively phrased. Participants were asked to indicate the degree each item reflected their own characteristics using a five-point Likert scale where a score of 1 indicated strongly disagree and a score of 5 indicated strongly agree.

Analysis

Initially 10 items were taken in the analysis of ‘Self-Management’ construct. However, the factor loading of two items (namely ‘I am self-disciplined’; factor loading 0.1, ‘I am disorganised’ (reversed coded); factor loading 0.22) were very less hence those two factors were removed from the study. Table 1 presents the standard regression weights (factor loadings) for the resultant 8 items in the model for ‘Self-management’. Figure 1 shows Zero order construct for ‘Self-management’ with standardized regression weight. AMOS software (version 22) was used to run the model.

Table 1

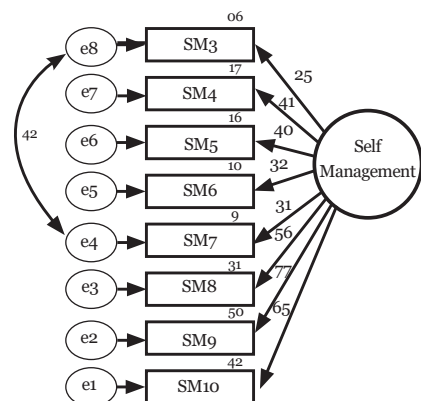
Factor loading of the items under Self-Management

SM1	I am self-disciplined	0.1
SM2R	I am disorganised	0.22
SM3	I set strict time frames	0.255
SM4	I have good management skills	0.414
SM%	I am methodical	0.4
SM6	I am systematic in my learning	0.318
SM7	I set specific times for my study	0.307
SM8	I prioritise my work	0.559
SM9	I can be trusted to peruse my own learning	0.767
SM10	I am confident in my ability to search out new information	0.648

Figure 1

Zero order construct for ‘self-management’ with standardized regression weight

In ‘Desire for learning’ construct, 8 items were taken. These items were same as that of Fisher et al.. These items had an acceptable level of factor loading ranging from 0.248 to 0.79; (Table 2). One item “I do not enjoy studying” was reverse coded but still had least factor loading. It was decided to retain



this item as its value was more than 0.2. Figure 2 presents the standard regression weights (factor loading) for the resultant nine items in the model for ‘Desire for learning’. Figure 2 shows Zero order construct for ‘Desire for learning with standardized regression weight. AMOS software (version 22) was used to run this model.

Table 2

Factor loading of the items under Desire for learning

Desire for learning Items

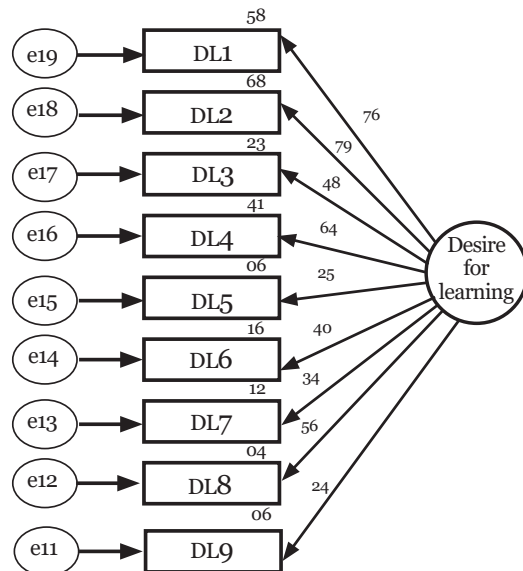
DL1	I want to learn new information	0.762
DL2	I enjoy learning new information	0.794
DL3	I have a need to learn	0.48
DL4	I enjoy a challenge	0.48
DL5R	I do not enjoy studying	0.248
DL6	I critically evaluate new ideas	0.399
DL7	I learn from my mistakes	0.342
DL8	I need to know why	0.557

Figure 2

Zero order construct for ‘desire for learning’ with standardized regression weight

Result

The model fit indices for ‘Self-management’ and ‘Desire for learning’ indicate that the data has good fit with the resultant models. The model fit indices of the two one-factor models are presented in Table 3. With multiple goodness-of-fit indices, Good fit is indicated



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by Root Mean-Square Error of Approximation (RMSEA) values lower than 0.08, Comparative Fit Index (CFI) values higher than 0.90, and Goodness-of-Fit Index (GFI) >0.90.

Table 3

Reliability Statistics & Model fit Indicators

Indicators	Calculated values		Criteria for acceptance	Interpretation whether model is a good fit or not
	Self-Management	Desire for learning		
Cronbach's alpha	.697	.713	$\alpha \geq 0.7$ indicates acceptable internal consistency	It confirms that the scale is reliable
CMIN/DF =	1.385	1.139	acceptable if < 3	Good fit
p-value =	0.122	.282	$p > 0.05$ suggests a good fit	The model does not significantly differ from the observed data, indicating a good fit
GFI (Goodness of fit index)	0.925	0.924	≥ 0.90 is considered good	
AGFI	0.857	0.873	≥ 0.80 is acceptable	
NFI	0.783	0.812	acceptable if < 0.08	
RMSEA	0.069	0.042	acceptable if < 0.08	It Confirms that RMSEA is not significantly different from zero, hence it is good fit.

The calculated values of 'Self-management' Chi-square (χ^2) = 26.306, Degrees of Freedom (df) = 19. RMSEA = 0.069 (acceptable if < 0.08 CMIN/DF = 1.385 (acceptable if < 3) and p-value = 0.122 ($p > 0.05$ suggests a good fit. All these values indicate model fit for self-management (Table 3)

The calculated values of 'Desire for learning' Chi-square (χ^2) = 30.750, Degrees of Freedom (df) = 27, CMIN/DF = 1.13 (acceptable if < 3). Since the p-value (0.282) > 0.05, we fail to reject the null hypothesis, meaning the model does not significantly differ from the observed data, indicating a good fit. RMSEA (Root Mean Square Error of Approximation) is 0.042 which is less than 0.08 and hence in acceptable limits. All these values indicate model fit for 'desire for learning' (Table 3). The above analysis proves that both the models have a good fit proving that the scale is valid.

Limitations and Scope for further research

The analysis was based on students from a single Delhi University College hence the data might not necessarily align with students of other Indian universities. As the number of respondents were limited to 81 students, hence only zero order construct could be validated. Efforts should be made by future researchers to apply Confirmatory Factor analysis (CFA) and SEM (structural equation model) in the field of self-directed learning.

Conclusion

The finding of this study supports the validity of Self-directed Learning Scale. This scale would prove to be a useful tool in the diagnosis of student learning needs. In the current scenario where Government of India has implemented the National Education policy (NEP 2020) and as a consequence Universities across India are introducing new curricula with numerous skilled based courses and elective papers, it is imperative that researchers and academicians need to understand students' desire for learning and their degree of self-management. Therefore, a deeper understanding of the intricacies of self-directed learning is the need of the hour.

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