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## A study on secondary school students' Perspectives on self-directed learning

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### Abstract

Secondary School Students perspectives regarding four dimensions associated with Self Directed Learning (SDL) were collected through a Self Directed Learning Scale. This tool was prepared and standardized by the investigators. A total of 82 Secondary School Students provided input for revealing four emergent dimensions of SDL. Secondary Students acknowledged that, much of their studies and learning was within their control. In an effort to improve and empower the quality of students, the administrators should develop a student initiated forum for them to raise their suggestions and concerns about their own learning processes. Self directed learning was one of the important terminology related to the present educational system. Because the present world is full of information and knowledge everywhere and it is also very easily available too. In this world student must took initiative to grasp relevant information suitable for them. For that self direction and its different components plays an important role.

**Keywords:** Self-Directed learning, self-motivation, self-modification, self-management, self-monitoring

### 1. Introduction

"...We can only have citizens who can live constructively in this kaleidoscopically changing world..... if we are willing for them to become self-starting, self-initiating learners."

- Carl Rogers, *Freedom to Learn*.

Carl Rogers wrote these wise words in 1969 - 48 years ago. Certainly, they are even more pertinent today, as the extent and pace of change have rapidly escalated. One small example: since 1969, we have moved from a world in which there were a small number of internet connections to nearly 13 billion connections around the globe. According to the Cisco Connections Counter, more than 100 connections are being added per second, and 50 billion connections are expected by 2020.

Education at any level has normally been based on some image of the future; that was not impossible in a world that was changing slowly. Today, educators are preparing learners for a world we cannot even predict, and self-directed learning has become an essential foundation for 21st century learners.

According to the constructivist theory of learning, students build their own understanding of a subject through engaged activities, rather than passively accepting information presented to them. Instructors can support students' constructivism by asking good questions, listening to students' needs, and creating environments that allow students to make choices that reinforce the overall goals for courses (Reeve, 2009) [12]. Conversely, when rigid assessment tools are used, students lose control and autonomy over their learning, reducing their intrinsic motivation (Flint & Johnson, 2011) [6].

Encouraging students to become involved in developing course requirements also increases their internal motivation to learn (Herman, 2012) [8]. The more control students have in their learning process, the more they sharpen their ability to sort through presented information as well as critically reflect and analyze their performance (Trigwell & Prosser, 1991) [14]. Additionally, student-directed assessment can be utilized as a learning tool that can positively impact self-reflection and analysis (Dochy, 1992; Glaser, 1990) [2, 7].

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In this era of knowledge explosion students get information from different sources. New generation learners was interested to spend time to acquire new learning and information. Acquisition of new knowledge is necessary due to the ever widening access to the information. Much of this learning takes place at the learner's initiative. A common name given to such learning is self directed learning. In essence, self directed learning is seen as any study form in which individuals have primary responsibility for planning, implementing, and even evaluating the effort (Hiemstra, 1994) [9].

Different educators define self directed learning in different viewpoints. Bolhuis, (1996) and Garrison (1997) suggests that in SDL learners are responsible owners and managers of their own learning process. SDL integrates self-management (management of the context, including the social setting, resources, and actions) with self-monitoring (the process whereby the learners monitor, evaluate and regulate their cognitive learning strategies).

The UNESCO World Education Report (1998) points out that the new technologies challenge traditional conceptions of both teaching and learning and, by reconfiguring how teachers and learners gain access to knowledge, have the potential to transform teaching and learning processes. Information and Communication Technologies (ICTs) provide an array of powerful tools that may help in transforming the present isolated, teacher-centered and text-bound classrooms in to rich, student-focused, interactive knowledge environments. To meet these challenges teachers and students must embrace appropriate new digital age tools and technique for learning. From elementary schools to universities and from individual training and development offerings to corporate universities, developing self-direction in learning is now recognized as a major purpose of education. Assisting learners to build skills and abilities for lifelong, self-directed learning as they acquire content knowledge is the best preparation for the lifelong, self-directed learning our world now requires. Here comes the significance of the study. To create a space in the new and challenging world of education our students also have to create a habit of lifelong learning. Self directed learning is the best suited option for the ongoing technology based educational environment. Self directed learners must exist in this new environment as a successful learner. Self direction in learning is a basic requirement for today's learners because they are in a world of abundance of information and also in an age of knowledge explosion. So the investigators planned to fix their study topic as self directed learning. The planned study checks the perspectives of secondary school students on self directed learning.

## 2. Hypotheses of the study

1. There is a significance difference in the perspectives of secondary school students on self directed learning for the subsamples based on gender – Boys/Girls
2. There is a significance difference in the perspectives of secondary school students on self directed learning in between the different dimensions of self directed learning such as
  - 1) Self Motivation
  - 2) Self Management
  - 3) Self Modification
  - 4) Self Monitoring

## 3. Methodology

To study the perspectives of secondary school students on self directed learning, investigators employed 'survey method' as the method of study. Survey method is a method for collecting data and analysing data, obtained from large number of respondents representing a specific population collected through highly structured and detailed questionnaire or other techniques (Best, 1983) [1].

After selecting a suitable method of study, the next step was to prepare a tool for the collection of data. For that investigators had constructed and validated a tool to measure perspectives of secondary school students on self directed learning. As an initial step the investigators had collected variety of information regarding self directed learning from various sources like Internet search, journals and books. Then the investigators developed the questionnaire with four dimensions. The different dimensions of the questionnaire were as follows: self motivation, self management, self modification and self monitoring. While preparing the scale, equal weightage was given to the four dimensions of Self Directed Learning.

After review the investigator prepared 90 items for the draft scale. These items were prepared by giving equal weightage to the four dimensions of the SDL scale. This scale was prepared as a Likert type scale with a stem and five responses. Then for standardisation the initial draft was administered to a sample of 370 secondary school students. Item analysis was conducted for selecting questions for the final tool.

Item analysis is meant as “any of the many processes by which one can find which item differentiate and which do not differentiate between the contrasting criterion groups” (Ferguson, 1952) [5].

The scored sheets were arranged in the descending order of the total scores. After that the highest 27% and the lowest 27% with respect to the total scores were separated. From the upper group and lower group, the scores obtained for each item was calculated and tabulated. The numerical values of their mean responses to each statement were computed considering highest 27% and lowest 27% as criterion groups.

t values were calculated using the formula

$$t = \frac{\bar{X}_H - \bar{X}_L}{\sqrt{\frac{\sum(X_H - \bar{X}_H)^2 + \sum(X_L - \bar{X}_L)^2}{N(N-1)}}} \quad (\text{Edwards, 1957})$$

Where,

$\bar{X}_H$  - Arithmetic mean of the given item for the higher group

$\bar{X}_L$  - Arithmetic mean of the given item for the lower group

$X_H$  - Individual score of the given item in the higher group

$X_L$  - Individual score of the given item in the lower group

N - Number of individual's in the criterion group.

The value of  $t$  value is a measure of the extent to which a given statement differentiates between the high and low groups. The statement for which  $t$  value is greater than or equal to 1.75 is regarded as an item which possesses internal consistency and hence discriminating power (Edwards, 1957). Items which have  $t$  value  $> 2.58$  at .01 level were only considered for the final test. Those with highest  $t$  value

in each skill area were selected. The final test consists of 30 items. The maximum score that can be obtained is 150 and minimum score is 30.

To find out the reliability of the tool, test-retest method was used. The reliability of the tool has been calculated using Pearson's product-moment correlation coefficient formula. The value obtained was 0.871. For this SDL scale the obtained reliability coefficient ( $r = 0.871$ ) is quite respectable.

Validity was defined as the degree to which the researcher has measured what he has set out to measure (Smith, 1991) [13]. So for the purpose of validation the tool was submitted to a panel of experts. They scrutinized the developed tool and their suggestions were also incorporated before finalising the tool. Thus the validity of the tool was established using content validity.

In this study, all the secondary school students in Kerala have been taken as the population of the study. From this population, the sample was selected by using stratified random sampling technique giving due representation to gender. By using this technique 82 secondary school students were selected as the sample. The sample includes 40 boy students and 42 girl students.

#### 4. Analysis and Interpretation

##### 4.1 Perspectives of secondary school students towards self directed learning

The mean score obtained for the total sample and relevant sub samples are presented in Table 1.

**Table 1:** Mean and Standard Deviation of the perspectives of secondary school students towards self directed learning

Groups	Sample	No. of Samples	Mean	S.D
Total		82	107.55	13.34
Gender	Boys	40	98.4	9.93
	Girls	42	118.4	5.33

From Table 1, it is clear that secondary school students have better thoughts regarding self directed learning (mean 107.55 out of 150). Secondary school students belonging to the category boys (mean 98.4) and category girls (mean

**Table 3:** Summary of one way ANOVA for the perspectives of secondary school students on self directed learning based on the different dimensions of self directed learning

Sub sample	Source of variation	Sum of squares	Degrees of freedom	Mean squares (variance)	F value
Dimensions of self directed learning	Between groups	3326.08	3	1108.69	58.77**
	Within groups	6112.28	324	18.865	

\*\* $p < 0.01$

The F value is 58.77 which is greater than the table value for corresponding degrees of freedom at 0.01 level (F value for  $df(3,324)$  at 0.05 level is 2.64 and at 0.01 level is 3.85).

This shows that the secondary school students belonging to different categories based on the dimensions of self directed learning differ significantly in their perspectives on self directed learning.

118.4) is also having a better level of self directed learning capacity.

##### 4.2 Comparison of the awareness of secondary school teachers towards awareness about e-learning

The second section of analysis was to test whether there exists any significance difference in the perspectives of secondary school students on self directed learning based on the subsample gender. To study whether significant difference exist in mean scores of awareness between two categories, the data were analysed by the test of significance for difference between mean scores. The results obtained are presented in Table 2.

**Table 2:** Comparison of the perspectives of secondary school students on self directed learning for the subsample gender

Variables	Sub Sample	No. of samples	Mean	S.D.	Critical Ratio
Gender	Boys	40	98.4	9.93	11.3**
	Girls	42	118.4	5.33	

\*\* $p < 0.01$

The critical ratio of the mean scores of the perspectives of the secondary school students on self directed learning according to the subsample gender is 11.3, which is significant at 0.01 level. From this the investigators interpret that the secondary school girl students (mean: 118.4) have more self directed learning capacity than the secondary school boys (mean: 98.4).

##### 4.3 Perspectives of secondary school students on self directed learning based on the dimensions of self directed learning (self motivation, self management, self modification and self monitoring)

The obtained data were further subjected to the treatment of ANOVA. The summary of the data and result obtained for the one way ANOVA for the perspectives of secondary school students on self directed learning based on the different dimensions of self directed learning is given in table 3.

##### 4.4 Group difference in the perspectives of secondary school students about different dimensions of self directed learning

Group difference in the perspectives of secondary school students about different dimensions of self directed learning were calculated to know wherever the difference is significant. Scheffe's test was used for comparing the different groups based on the different dimensions of self directed learning.

The mean scores of different dimensions were compared and the results were examined. Data and results obtained for comparison of mean scores of the perspectives of secondary

school students belonging to the four groups based on the different dimensions of self directed learning are given in Table 4.

**Table 4:** Data and Results of the Scheffe's Test of multiple comparison between means of Perspectives of secondary school students based on the different dimensions of Self Directed Learning

Sample	Group Compared	Mean	P Value
Dimensions of e-learning	Self Motivation & Self Management	23.82 31.60	0.000*
	Self Motivation & Self Modification	23.82 25.57	0.003*
	Self Motivation & Self Monitoring	23.82 28.28	0.000*
	Self Management & Self Modification	31.60 25.57	0.000*
	Self Management & Self Monitoring	31.60 28.28	0.000*
	Self Modification & Self Monitoring	25.57 28.28	0.001*

\* $p < 0.05$

Scheffe's Test of multiple comparisons between means of Perspectives of secondary school students based on the different dimensions of self directed learning revealed that there was a statistically significant difference between all the four dimensions of self directed learning. From this it is concluded that the perspectives of students on self directed learning in the self management dimension is more (mean: 31.60) than self monitoring (mean: 28.28) self modification (mean: 25.57) and self motivation (mean: 23.02).

## 5. Conclusions

By analyzing the collected data the investigators comes to the following conclusions. Secondary school students possess a better level of understanding about self directed learning. Perspective of secondary school students about self directed learning is influenced by the variable gender. Secondary school girl students perspectives on self directed learning is more excel than the secondary school boy students. Perspectives of secondary school students towards self directed learning is influenced by the dimensions of self directed learning at 0.05 level.

The objective of the study was to find out the perspectives of secondary school students on self directed learning. The study reveals that the secondary school students have a better level of understanding about self directed learning and it is statistically influenced by the subsample gender and also the dimensions of self directed learning. Analysis shows that girl students are more excel in self directed learning than boys students in the secondary schools. Martinez (2014) [10] appeals that there are some gender-related tendencies that suggest that girls will handle some of the requirements of self-directed learning better than boys. Girls are generally more organized and better able to self-monitor, one of the important requirement for self-directed learning. However, providing good documentation and turning things in on time should not be confused with doing good work. Girls may be better with project planning tools, collaboration networks, and other technology tools that support these areas.

Students who are not as highly self-directed may benefit from placement in an environment where an adult mentor is available to help them to build sense of self-efficacy, learn to set and evaluate learning goals, and to take greater responsibility for their own learning (Oliveira & Simoes,

2006; Zimmerman *et al.*, 1992) [11, 15]. But this study result shows most of the students are highly self directed learners. A small percentage of students are backward in self directed learning. Only that category requires the constant attention of the teachers in their learning process.

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