

## **The Relationship between Study Skills and Learning Styles: The Case of Underachieving Students in Some Selected Secondary Schools in Wolaita, Ethiopia**

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### **ABSTRACT**

The general objective of this study was to examine the relationship between study skills and learning styles: The case of underachieving students in some selected secondary schools in Wolaita, Ethiopia. The correlational design in the form of mixed methods was used to achieve the research objectives. Through stratified random sampling technique 243(124 male & 119 female) underachieving students from grade nine were selected for the quantitative analysis of the study while four teachers and four school counselors were purposively sampled for the qualitative analysis. The data were collected using (ILS & SSI) structured questionnaires and semi-structured interview guide. Quantitative analysis was done by using descriptive statistics (frequency and percentage) and inferential statistics (Pearson correlation, linear regression and one way ANOVA), while qualitative data was analyzed using inductive thematic approach. The results revealed that the majority of underachievers were fairly well balanced in their preferences for the four scales of the dimensions of learning styles. The result also revealed that low achieving students preferred more active, intuitive, visual and global categories of learning styles. In the study skills practiced by the underachievers were good in text book reading and note-taking, but poor in memory, in test preparation, in concentration and in time management revealed. Results from Pearson correlation analysis revealed that the 'active-reflective' dimension of learning styles was significantly and positively related to concentration study skill and the visual-verbal dimension of learning style significantly and negatively related to concentration study skill. Linear regression analysis revealed that among the dimensions of learning styles, visual-verbal learning style was important predictors of note-taking and concentration subscales of study skills, and active-reflective dimension of learning style was important predictors of concentration subscale of study skills. One way ANOVA result indicated that dimensions of active-reflective and visual-verbal learning styles had significant effect on concentration subscale of study skill. The interview result also depicted that teachers and school counselors were not assisting low achieving students to use their preferred learning styles and help to overcome their poor study skill problems. The study demonstrates that the mismatch of teachers teaching methods and students learning styles and students poor study skills were the major contributor factors for students' low achievement. Thus, based on the findings of the study, recommendations were forwarded to alleviate the aforementioned problems.

**Key words:** Learning styles, Study skills, underachieving students

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### **INTRODUCTION**

Afful-Broni and Mawusi (2010) stated in their study that "students perceive and learn in different ways likewise they study in different ways" and they "may have different learning styles. Thus, the process of learning involves many factors, such as self-confidence, intelligence, aptitude, motivation and learning styles. Furthermore, another significant factor is learners' study habits. Congos (2011) presented six dimensions of study skills, i.e. textbook reading, memory, time management, note-taking, test preparation and concentration. Proper time management is an important component of study habits that can enhance one's performance. Effective time management skills include studying on daily basis, forming timetables, study plans and utilizing time properly. Spending extra hours for studying with lack of concentration does not define the appropriate utilization of time. Concentration is also a significant dimension of study habits. It is the ability to give attention and avoid distractions while studying. Note-taking is not just writing the lecture in fact it also needs attention and listening ability to properly note taking the lecture. Strategies used to memorize the learned material are also attributes of study habits. Effective textbook reading is not only reading the material but also comprehending the reading material by constructing themes and main ideas (Ayesha & Khurshid, 2013; Congo, 2011; Osa-Edoh,

&Alutu, 2012). Study habit, therefore, refers to learning which leads to the achievement of a learner's goal, through a prescribed pattern of a study behavior. Study habit plays a major role to the learning style of an individual. Russell and Petrie (1992) have cited a research study aimed to find out the relationship between study habits and student attitude and academic performance of college students. Findings of this study indicate a positive correlation between study attitude, study habit, academic achievement, and learning style. Fortunately, examples of qualities or behaviors such as student motivation, learning styles, study skills and beliefs about success, may be enhanced via external instructions and support (Proctor, et al, 2006). Learners cannot acquire effective study habits by themselves; they actually require assistance from teachers, psychologists or counselors in order to improve their study habits (Udeani, 2012). It has been considered imperative to introduce organized study skills training programmes for the students. It has also been suggested in literature that effective study habits can be developed with the passage of time and experience (Sandhu, 2014). The term learning style refers to "the way in which an individual concentrates on, processes, internalizes, and retains new and difficult information" (Dunn et al., 2009). When students are aware of their own styles, they are more likely to take initiatives in their own learning process and make adjustments to learn in ways better suited to their preferences. Students may use knowledge of their own styles to help them do homework, solve problems, and better sort through information (Boström & Lassen, 2006; Burke & Dunn, 2002). In one study, high school students were given their learning style inventory reports and they then used that information to adjust their study techniques and perform better on exams (Callan, 1996). Dunn (1990) discussed the benefits of learning style based instruction in an interview. She expressed that, when shown how to study and do homework through their learning style strengths, many students demonstrate significant increases in academic achievement and improved attitudes. Generally, it can be seen that learning styles are an important factor that affects study habits. But there are scenarios that learners realize on the latter that their study habit do not match with the style they need to learn that made them identify particular study habit according to their learning style and possibly improve academically. Hoeffner (2010) sought to determine whether there was an improvement in grades after the adjustment of their study habits once their learning styles were identified. This study was inconclusive since not all of the students modified their study habits. However, those who did modify their study habits in relation with their learning styles agreed that the change was quite beneficial. Understanding one's learning style(s) is imperative but being able to master one's study habits and skills could tremendously reduce the issues of under achievement that is still on the rise among students Gettinger, Seibert (2002) and Rana, Kausar (2011). The fact that no previous study investigating the relationship of study skills of underachievers with their learning styles in our country and Wolaita shows the need for the current research. Thus, the purpose of this study is to examine if there are significant relationships between learning styles and study skills. It is also to explore how teachers and counselors do assist low achieving students to use their own preferred learning styles and to have effective study skills.

### **STATEMENT OF THE PROBLEM**

In this study after referring different literatures, the researchers stated some rationales that motivated them to conduct the relationship between study skills and learning styles: The case of underachieving students in some selected secondary schools in Wolaita. Firstly, the researchers' personal experiences, as one of the coauthors has worked for nine years as school vice principal and school counselor in various secondary schools, he practically observed and recognized that secondary school years are more challenging than primary school years of education. At secondary level, students have to face many problems such as peer pressures, stresses, anxiety, shortage of teachers, school counselors and parental support and students' academic failure are common phenomena that need attention. It indicated that these adversely affect students' academic success. Students cannot perform well without proper learning and effective study habits. As some researchers pointed out, students with effective study habits experience less test anxiety and high academic achievement as compared to the students with ineffective study habits (Ergene, 2011, Sandhu, 2014). Therefore, the low achievements of students at secondary school in Wolaita may be linked to lack of effective study skills and the mismatch between teachers' teaching styles and students learning styles. Secondly, teachers and school counselors are not well aware of how low achieving students learn and study; and they do not aware the role of students' knowledge of their own learning styles on their academic achievements and study skills. These are two things (learning style and study habits) are may be the reasons that made their achievements low or high, since these things were not well discovered and used to strengthen the learners level of learning. Third, students study skills cannot effectively develop without teachers and school counselors' assistance. And fourth, to improve students' academic low achievement, solving the students' learning styles and study skills gap requires thinking and actions that go beyond common sense.

## RESEARCH QUESTIONS

The following five major research questions were posed to be addressed in this study.

- What are learning styles and study skills of underachieving grade nine secondary schools students in Wolaita?
- Are there statistically significant relationships between the students' learning styles and study skills among underachieving secondary schools students in Wolaita?
- Which dimensions of learning styles have major determinant effects on the study skills of low achieving students?
- How do teachers and school counselors assist low achieving students to use their own preferred learning styles and to have effective study skills?

## OBJECTIVES OF THE STUDY

**General Objective:** The purpose of the present study was to examine the relationship between learning styles and study skills and to explore how teachers and school counselors do assist underachieving students to use their own preferred learning styles and to have effective study skills.

**Specific Objective:** The specific objectives of this study are to:

- describe the learning style preferences and level of study skills of underachieving grade nine secondary schools students in Wolaita.
- examine whether there is statistically significant relationship between learning styles and study skills among underachieving secondary schools students in Wolaita.
- determine which dimensions of learning styles have major determinant effect on the study skills among low achievers.
- examine there is statistically significant difference between the dimensions of learning styles with respect to study skills.
- identify how do teachers and counselors assist low achiever to use their own preferred learning styles and to have effective study skills?

## SIGNIFICANCE OF THE STUDY

This research study provides information about the relationship between study skills and learning styles of underachieving students in secondary schools in Wolaita. More specifically, the findings may help the teachers, school administrators, school counselors, and parents, in understanding the importance of learning styles for the development of effective study skills so as to improve students' low academic achievement.

## OPERATIONAL DEFINITIONS

**Learning Style:** - refers to personal approach that an individual student uses when concentrating on, processing, internalizing, problem solving, retaining and recalling new and difficult information, as measured by Felder and Silverman's (Active-Reflective, Sensing-Intuitive, Visual-Verbal and Sequential-Global) learning styles inventory model.

**Study Skill:** - refers students' learning strategy or activities carried out by students that consist of specific sub-study skills (textbook reading, note-taking, memory, test preparation, concentration and time management) which are potentially useful for better academic achievement, as measured in Dennis H. Congo's Study Skills Inventory (2011).

**Underachieving Students:** - refers students who scored below average (detainee) in the 2016/17 annual academic year result as received from academic record office.

## LITERATURE REVIEW

**The concept of learning style :** Learning style has been defined by various scholars mostly as a signal for individual differences. These differences may manifest itself in 'life styles' and even in personality types (Zhang & Sternberg 2005). Kolb (1984) and Honey and Mumford (1992) describe learning style as an individual preferred or habitual ways of processing and transforming knowledge. According to Kolb (1984), psychological attributes, resulted from individual differences, determine the particular strategies a person chooses while learning.

It is very important for each individual to explore and understand one's own particular learning styles so that he become an attentive learner so as to increase his/her educational successes (Gilakjani, 2012). Students' understanding of their learning styles enables them to effectively choose tools that will increase the value of their learning experience (Liang, 2012). That is, when students discover their learning styles, this will allow them to determine their own personal strengths and weaknesses that can serve as feedback (Gilakjani, 2012). However, knowing one's own learning style alone does not improve one's own learning progress, rather

knowing and practically implementing it will bring a positive difference in the outcome of the learning (Fleming, 2012).

## **LEARNING STYLES MODELS**

### ***David Kolb's Learning Style Model***

One of the most influential models of learning styles was developed by David Kolb. Kolb (in Hawk & Shah (2007) defines learning style as generalized differences in learning orientation based on the degree to which people emphasize the four modes of the learning process.

*Diverging Learning Style:* -The diverging learning style describes individuals who learn by way of concrete experience and reflective observation. Individuals with a diverging learning style experience a situation and then later look at the situation through many perspectives, learning from each.*Assimilating Learning Style:* -The assimilating learning style is based on learning abilities that use abstract conceptualization and reflective observation. Individuals who learn via this style take in a wide variety of information and arrange it in the most logical form.*Converging Learning Style:* -The converging learning style involves using abstract conceptualization and active experimentation. These individuals find practical uses for the ideas and theories that they have learned.*Accommodating Learning Style:* -The accommodating learning style uses both concrete experience and active experimentation to learn and process information. They prefer active involvement in concrete situations. Individuals adhering to this style learn primarily from experiencing something new and carrying out plans that involve new experiences and challenges by which they learn.

### ***Vak and Vark Learning Style Model***

Although there are different ways of classifying learning styles, one of the more commonly used models is based on sensory modality preferences or modalities that one prefers to use when taking in and giving out information (Dobson 2010; Juskeviciene&Kurilovas 2014).

### ***Visual Learners***

According to Fleming (2015) the visual preference includes the depiction of information using maps, spider diagrams, charts, graphs, flow charts, labeled diagrams and all the symbolic arrows, circles, hierarchies and other devices that people use to represent what could have been presented in words.*Auditory Learners:* -This perceptual mode, according to Fleming (2015), describes a preference for information that is heard or spoken. Auditory learners learn through listening and need to hear and speak before they can read and write (Amran et al. 2011).*Read/Write Learners:* -This preference is for information displayed as words. Many teachers and students have a strong preference for this mode. Text-based input and output in the form of reading and writing in all its forms especially manuals, reports, essays and assignments is emphasized.*Kinaesthetic Learners:* -Kinaesthetic learners learn best through moving, doing and touching (Amran et al. 2011). They prefer videos, teaching others, pictures of real things and practical sessions (Juskeviciene&Kurilovas, 2014).

### ***Felder Silverman Learning Style Model***

This Model is presented by Richard, Felder and Linda, Silverman. The instrument is called Index of Learning Style (ILS). It is developed by Felder and Solo Man. This instrument assesses preferences on four dimensions.

*Active-Reflective:* -Active learners prefer being actively engaged in the learning task such as through practical application of what has been learned and through group discussions. The reflective learners on the other hand are thinking learners. They cannot do anything unless they spend reasonable amount of time on thinking. Such people like individual assignments.*Visual-Verbal:* -Visual learners go well with pictures, maps, charts, visual description, diagrams, and flow charts. These learners require the visual explanation for the complex phenomena. In contrast to the visual learners the verbal learners are called the auditory learners as well. They understand better the oral instructions and verbal explanations of different information.*Sensing-Intuitive:* -Sensing learners are those learners who prefer to learn the factual knowledge and better at memorizing them. They do not in favor of complexities and ambiguities as they are concrete learners. In contrast to the sensing learners the intuitive learners go for finding out the possibilities and trying them out. They are innovative and against of routine assignments and home works. *Sequential-Global:* -Sequential learners tend to learn in step by step manner. Their understanding of different issues is in linear fashion. Global use holistic thinking processes put pieces together randomly and will suddenly 'get it'. Between different parts as one is connected on the basis of some reason with the previous one.

### ***The concept study skills***

Study skill is ability to manage time and allocate other resources in accordance with the demands of the academic tasks, or ability to organize, summarize, and integrate material. Study skill is an ability of students to

read textbook, take note, concentrate, memorize, prepare for tests, and manage time better for one's own benefits (Carroll, 1990; O' Donoghue, (2005/2006).

Study is the process of learning or gaining knowledge, skill, and attitudes, especially through reading, observing or acting. Study involves exercising different skills before the real and regular activities such as exam, test, and presentation. Study can be reading books to increase knowledge, watching or hearing various events in the real environment or in audiovisual media like television and computer program so as to raise the familiarity of the performer with different skills, knowledge, concepts and beliefs.

### ***Learning Style and study habits***

Knowing one's learning style(s) is imperative but being able to master one's study habits and skills could tremendously reduce underachievement that is still on the rise among students (Gettinger&Seibert, 2002; Rana &Kausar, 2011) Study habits on the other hand, refer to the tendency of a student to use his/her uninterrupted attention to acquire knowledge via systematic. Study skills refer to effective study strategies and techniques in time management as well as other resources to attain academic success. In essence study habits could be viewed as the continuous practice or repetition of study skills over time.

## **RESEARCH METHODOLOGY**

The current study was correlational, since it correlates the dependent variable of study skills with independent variables of learning styles of low achieving secondary schools students. In order to achieve the stated objectives, both qualitative and quantitative approaches of data collection and analysis were used. It was also descriptive in its nature because it involved description of learning style preferences and level of study skills.

The aim of the quantitative approach was to describe learning styles preferences and level of study skills among secondary school underachieving students. It was used to examine the relationship between study skills and learning styles. Moreover, the purpose of the qualitative approach was to explore how teachers and school counselors assist students while students use their own preferred learning styles and to have effective study skills.

The target population for this study included all grade nine underachieving students, who had poor academic achievement (detainees) in the 2016/17 academic year. The target population consisted of 670 underachieving students. Therefore, according to (Yamane, 1970) cited in Glenn (2009) sample size determinant formula, 250 is a reliable sample size (n) for a given population size (N) of 670 underachieving students.

$n = \frac{N}{1 + N(e)^2}$  where; n= the correct sample size

e =Margin of error (0.05)

N=total number of population (670)

Stratified simple random sampling was used for the qualitative data and purposive sampling used to select teachers and counselors (four teachers and four school counselors) were used for the qualitative part. The study skills questionnaire utilizes the 5-point Likert Scale type to obtain responses from the respondents which was rated from Almost Always (5) to Less than half of the time (1) and for the ILS questionnaire students responded to each item by selecting one of two options ('a' or 'b').The pilot test was conducted with fifty underachieving students. The reliability statistics to the study skill subscales were 0.778 for textbook reading, 0.742 for note-taking, 0.831 for memory, 0.843 for test preparation, 0.800 for concentration, and 0.772 for time management; and reliability coefficients of learning style dimensions were 0.654 for active-reflective, 0.556 for sensing-intuitive, 0.685 for visual-verbal, and 0.630 for sequential-global. All the coefficients were very acceptable. SPSS version 20 was used to analyze quantitative data and semi-structured interviews were analyzed through inductive thematic analysis for qualitative data.

## **RESULTS**

Majority of the interviewed teachers indicated that their support to students was impeded by shortage of time; teachers' and counselors' limited knowledge on the students preferred learning styles and the huge contents of subjects to be covered within the specified academic year. Three teachers also responded that they preferred to teach lessons by lecture method since it helps them to cover the contents of the subject on time; and the large class size didn't allow performing participatory or student center method even though it is known important. They further expressed that the preparation of the lessons they teach were time bounded and didn't allow them to encourage students to use their own preferred learning styles in the learning. The majority of the interviewed teachers view that lack of employing different teaching strategies and students' ineffective study skills contributed to students' low achievement. Teachers and counselors further noted that students' lack of regular class attendance, absence of taking notes during classes; lack of concentration and understanding content; absence of asking for clarifications from teachers on what is taught in class; absence of managing their time properly; absence of attending all the classes properly, late coming and early going home; lack of sufficient

support from teachers, counselors, school administrators and parents were the major factors that contributed to students low achievement.

## **DISCUSSIONS OF THE QUANTITATIVE RESULTS**

### ***Underachieving students' learning style preference by categories***

The majority of underachieving students were preferred fairly well balanced category of the learning styles of the given dimensions. That is, learners who identify themselves to the balanced category can learn in a fairly well-balanced manner from the two sides of the given dimension (Felder & Soloman, 1994). The second most preferred was the moderate categories of the learning styles, the active dimension (14%), the intuitive dimension (18.1%), the visual dimension (25.1%), and the sequential dimension (17.7%). That is, they can learn more easily in a situation that the lesson matches or favors the dimension of their preference. This does not necessarily mean that they cannot learn when other teaching strategies are used. However, very few of the respondents selected the strong active-reflective, sensing-intuitive, visual-verbal and sequential-global categories (7.8% vs. 7.4%, 4.1% vs. 5.8%, 7% vs. 7%, and 2.9% vs. 8.2%) respectively. Felder and Soloman (1994; 1998) points out those learners with strong preference for a specific learning style may have difficulties in learning if the teaching style does not match with their learning style. This result is similar with that of Dunn et al. (2009), Schulze et al. (2016), Yousef (2016) and Gappi (2013).

### ***Learning style preference of the underachieving students by dimensions***

The results reveal that for the Active-Reflective aspect, the majority of students (56.8%) were Active learners; for the Sensing-Intuitive aspect, the majority (51%) were intuitive learners; for the Visual-Verbal aspect, the majority (55.1%) were Visual learners; and for the Sequential-Global aspect, the majority of students (53%) were global learners. Thus, teachers must include elements related with active, intuitive, visual and global learners, which will make learning for students easier.

### ***The level of study skill of the underachieving students by average scores in each subscale***

As the results indicated, out of the entire sample (of 243 underachieving students), 115 (47.3%) had poor textbook reading skill, 83 (34.2%) had poor note-taking skill, 164 (67.5%) had poor memory skill, 183 (75.3%) had poor test preparation skill, 141 (58%) had poor concentration skill and 179 (73.7%) had poor time management skill. However, 128 (52.7%) had good textbook reading study skill, 160 (65.8%) had good note-taking skill, 79 (32.5%) had good memory skill, 60 (24.7%) had test preparation skill, 102 (42%) had good concentration skill and 64 (26.3%) had good time management skill. This indicates that the big portion of students are in the category of poor (memory, test preparation, concentration and time management) subscales of study skills; while a very small percentage of them are had good study skills. However, the proportion of students in textbook reading (52.7%) and note-taking (65.8%) were relatively high.

### ***The relationship between study skills and learning styles***

The correlation result depicts that there was statically significant positive and negative correlation between concentration study skill and active-reflective ( $r=0.146^*$ ,  $p=0.023$ ) and visual verbal ( $r = -0.155^*$ ,  $p=0.015$ ) dimensions of learning style preference respectively. There were no statistically significant relationship between textbook reading, note-taking, memory, test preparation time management study skills and sensing-intuitive and sequential-global dimensions of learning styles.

### ***The prediction of study skill by learning styles***

The regression coefficients show that visual-verbal dimension of learning styles ( $\beta = -.137$ ,  $t=-2.125$ ,  $p=0.035$ ,  $\alpha<0.05$ ) were significantly and negatively predicts of note-taking subscale of study skill. Thus negative beta coefficient indicated that visual-verbal dimension of learning styles more negatively affect note-taking subscale of study skill. Active-reflective dimension of learning styles ( $\beta = .156$ ,  $p=.018$ ,  $\alpha<0.05$ ) was significant and positive predictor and visual-verbal dimension of learning styles ( $\beta = -.131$ ,  $p=.041$ ,  $\alpha<0.05$ ) significant and negative predictor of concentration subscale of study skill. Thus positive and negative beta coefficient indicated that active-reflective dimension of learning styles more positively affect students' concentration and visual-verbal dimension of learning styles more negatively affect their concentration.

### ***The dimension of learning style and study skills***

The results showed that there were significance differences between active-reflective and visual-verbal dimensions of learning styles preference and concentration study skill at  $F(1, 242) = 5.239$ ,  $p=0.023$  and at  $F(1, 242) = 5.951$ ,  $p=.015$  respectively.

## CONCLUSION

Based on data analysis the following findings are summarized below:

- The secondary school underachieving students were generally fairly well-balanced' in their preferences for the four scales of the Felder-Soloman ILS. Their next preference was for the 'moderate' sub categories on all the scales of the instrument. The 'strong' sub-categories were seldom chosen by the students.
- The grade 9 secondary schools underachieving students' learning preferences inclined more towards the 'active', 'intuitive', 'visual' and the 'global' categories rather than towards the 'reflective', 'sensing', 'verbal' and 'sequential' categories.
- Poor study skills have been observed in the secondary schools underachieving students in memory, test preparation, concentration and time management categories of the study skills.
- A significant positive correlation was observed between students' concentration study skill and the active-reflective dimension of learning styles. And also a significant negative correlation was observed between students' concentration study skill and the visual-verbal dimension of learning styles. However, the correlations were weak.
- Findings from linear regression statistical analysis yield that visual-verbal dimension of learning style was the most significantly negative contribute to low achieving students' note-taking and concentration study skill and active-reflective dimension of learning style was the most significantly positive contribute to concentration study skill. Linear regression analysis results revealed that the active-reflective, sensing-intuitive, visual-verbal and sequential-global dimensions of learning styles were not the most important predictor of the textbook reading, memory, test preparation and time management study skills for low achieving students.
- Majority of teachers were mainly use lecture method in which students do not take part in the learning process. Moreover, they do not allow their students to use their own learning styles. With regard to study skills, the interviewed teachers and school counselors responded that they didn't assist their students to have effective study skills. The majority of teachers and counselors responded that teachers' lack of using varied teaching methods, students' poor study skills, and lack of support from parents, teachers, counselors and school administration has the major contribute factors to students' low achievement.

## RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made:

- The research area needs an effective educational guidance and counseling to improve students study skills.
- School counselors should focus on providing guidance and counseling services for low achievers on the basis of their learning style preferences and study skills knowledge rather than administrative work routines.
- Teachers should be aware of the learning styles of their students in order to be able find means of making their teaching effective to their level, character, and learning readiness;
- Teachers need to take into account their students' diverse learning styles, design instructional methods that take care of those diversities. While teaching, it is important that teachers should aware of the variety of teaching strategies that can promote students' study habits.
- Teachers also need to use teaching aid to assist students with preference of learning with visualizing materials.
- School administrators are advised to give freedom and support to school counselors to focus on their work.
- Future research should include the views and understanding of school principals, parents, both high and low achieving students regarding the learning style preferences and study skills both at the preparatory and secondary school levels, and the relationship of the learning styles and study skills with academic achievement of students.

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