

A COMPARATIVE STUDY OF STUDENTS' MOTIVATION FOR LEARNING SOCIAL STUDIES ACCORDING TO THEIR PREFERENCES FOR INSTRUCTIONAL STRATEGIES AT THE ESCOLA SECUNDÁRIA CATÓLICA DE SÃO JOSÉ OPERÁRIO IN DILI, TIMOR-LESTE

Gaspar Florindo Noronha Gama¹

Richard Lynch²

Abstract: This research was conducted at the Escola Secundária Católica de São José Operário in Dili, Timor-Leste in the school year 2014. The purposes were: 1) to determine the level of students' motivation for learning social studies; 2) to determine the students' preferences among five instructional strategies; 3) to compare the students' motivation for learning social studies according to their preferences for instructional strategies. This study used a questionnaire, including 5 motivation subscales (intrinsic goal orientation, extrinsic goal orientation, task value, control of learning beliefs, and self-efficacy for learning & performance), and 5 instructional strategies subscales (direct instruction, indirect instruction, experiential learning, independent study, and interactive instruction). The sample was 178 students in grade 10 and grade 11. The findings indicated that motivation was high overall in both grade 10 and grade 11, and that the students' most preferred instructional strategies were direct instruction, interactive instruction and independent study. There was no significant difference between students' motivation for learning social studies and their preferences for instructional strategies. The article concludes with recommendations for both practice and future research.

Keywords: Motivation for Learning, Social Studies, Social Cognitive Theory of Motivation, Instructional Strategies.

Introduction

Timor-leste, the youngest nation in Southeast Asia, declared its independence in 2002. The country has faced many political, economic and social challenges to develop as a nation after centuries of Portuguese colonial rule, two decades of occupation by Indonesia, and approximately three years of UN governance. Together with development partners, Timor-Leste prioritized a fundamental reform of the education sector to ensure that what is taught in the classrooms works to support the development of the nation.

¹ M.Ed. Candidate in Curriculum and Instruction, Graduate School of Education, Assumption University, Thailand.
gaspargama1@gmail.com

² Ph.D., Assistant Professor, Graduate School of Education, Assumption University, Thailand.
richardlynch2002@yahoo.com

As this researcher has observed, students' motivation for learning social studies in Timor-Leste is low. They assume that social studies is both unimportant and boring. One reason the students' motivation is low is because teachers do not apply a variety of instructional strategies to motivate student learning.

Instructional strategies play a very important role in the teaching and learning process in delivering materials to students. A teacher must know the students' preferences of instructional strategies in order to teach in a balanced way because every student has his/her own preferences. Many educators realize that it is imperative to value individual differences in the learning process in order to meet the objectives of learning (McCombs & Miller, 2007). With the intention to meet the different needs of learners, differentiated instruction plays a very important role and it has become an imperative issue in Timor-Leste schools. Before beginning the teaching process, it is very important to engage students in a classroom environment and identify their preferences of instructional strategies in order to help teachers design the teaching activities. Instructional strategies may include class participation, giving assignments, class presentation, memorization, group discussions or a combination of these.

Theoretical Framework

Three theories undergird the study: social cognitive theory of learning motivation, differentiated instruction, and instructional strategies. Kleinginna and Kleinginna (1981a & 1981b cited in Huitt, 2001) stated that motivation is an inner state or condition sometimes described as a need, desire, or want that assists to activate or empower behavior and give it direction. Motivation contributes to a mastery learning orientation and persistence in learning challenging material (Gottfried, 1990 as cited in Froiland, Oros, Smith, & Hirschert, 2012). Furthermore, Broussard and Garrison (2004) described motivation as an attribute that moves one to do or not to do something. Therefore, it can function as an emotional strength to attain desired goals via specific actions.

Bandura developed the social cognitive theory of motivation for learning (1988, 1993, & 2001). He pointed out that motivation originates from personal goal orientations, task value, control of learning beliefs, and individual perceptions of self-efficacy for learning and performance (Pintrich, Smith, Garcia, & McKeachie, 1991).

Differentiated instruction concerns teaching and learning in which students have several choices to receive and process information and create their own ideas. The model of differentiated instruction needs teachers to adjust their curriculum and offer information to the students rather than forcing students to adapt to a curriculum. Classroom teaching methods must be varied and adapted to different students for background knowledge, learning preferences, and readiness. Differentiated instruction is a way to maximize individual student growth and give different individuals success in the same classroom. Tomlinson (2001) pointed out that there are three fundamentals of the curriculum that can be differentiated: content, process and product. Instructional strategies can be used with several models to determine the teacher's approaches in teaching to achieve learning goals. Although a variety of approaches exist, in this study instructional strategies were classified as: direct instruction, indirect instruction, interactive instruction, experiential learning, and independent study.

Method/Procedure

This was a quantitative comparative research study aimed at investigating the students' motivation for learning social studies according to their preferences for instructional strategies in the Escola Secundária Católica de São José Operário in Dili, Timor-Leste. There were 3 objectives:

1. To determine the level of students' motivation for learning social studies in grade 10 and grade 11.
2. To determine the students' preferences among five instructional strategies: direct instruction, indirect instruction, experiential learning, independent study, and interactive instruction in grade 10 and grade 11 social studies.
3. To compare the students' motivation for learning social studies according to their preferences for instructional strategies.

Additional Findings Objectives:

1. To determine the students' motivation for learning social studies in grade 10 and grade 11 by gender.
2. To determine the students' preferences among five instructional strategies in grade 10 and grade 11 by gender.

The research hypothesis was derived from research objective 3: There is a significant difference between students' motivation for learning social studies according to their preferences for instructional strategies in grade 10 and grade 11.

Participants

The sample of this study was the 178 students in grade 10 and grade 11 of the Escola Secundária Católica de São José Operário in Dili, Timor-Leste, in the school year 2014.

Instrumentation

A questionnaire composed of three parts was used.

Part 1: Demographic information targeted gender and grade level as part of this research. These are important details that helped the researcher to better understand the research sample.

Part 2: The Motivated Strategies for Learning Questionnaire (MSLQ) assesses students' motivational orientation of learning based on a general cognitive view of motivation. The MSLQ was developed by Pintrich, Smith, Garcia, and McKeachie (1991) and a team of researchers from the National Center for Research to Improve Post-secondary Teaching and Learning (NCRIFAL) and the School of Education at the University of Michigan. The MSLQ has two sections, a motivation section and a learning strategies section. This research utilized only the motivation section, which is composed of six dimensions of motivation with a total of 31 items: intrinsic goal orientation (4 items), extrinsic goal orientation (4 items), task value (6 items), and control of learning beliefs (4 items), self-efficacy for learning and performance (8 items) and test anxiety (5 items). The researcher used all of the motivation components except test anxiety because that dimension was not relevant to this research. The sub-scales for each motivation dimension are segmental and can be used separately or together as needed (Pintrich et al., 1991).

Part 3: The items in part 3 measured student preferences for five instructional strategies: direct instruction, indirect instruction, experiential learning, independent

study, interactive instruction. This part of the questionnaire was developed by the researcher and consisted of 25 items, five items for each instructional strategy.

Validity and Reliability

As noted by Artino (2005), the MSLQ has good predictive validity and is a very complete instrument to use for research in motivation and learning strategies. The original developers of the MSLQ tested the construct validity of the scales using confirmatory factor analysis and all subscales showed acceptable factor validity (Pintrich et al., 1991). They also computed the reliability of each subscale as shown in Table 1, which also shows the reliability coefficients attained in the current study.

Table 1: Reliability Coefficients of The Motivation Components

Sub-scale	Item numbers	Number of items for each component	Pintrich et al. Alpha Value	Current Study Alpha Value
Intrinsic Goal Orientation	10,17,15,5	4	.74	.73
Extrinsic Goal Orientation	9,18,14,4	4	.62	.79
Task Value	8,19,24,22,13,3	6	.90	.64
Control of Learning Beliefs	7,20,12,2	4	.68	.64
Self-efficacy for learning & performance	6,16,25,26,23,21,11,1	8	.93	.74
Total	26	26	.77	.70

Part 3 of the questionnaire consisted of items measuring five instructional strategies. The researcher requested three educational experts to assess the items' construct validity. When the items were validated by the experts, the researcher conducted a tryout to determine the reliability for the part 3.

Table 2: Reliability Coefficients of The Instructional Strategies Components

Sub-scale	Item number	Number of items	Alpha Value Pilot test	Alpha Value Main Study
Direct Instruction	5,10,11,20,25	5	.82	.87
Indirect Instruction	4,9,12,19,24	5	.81	.87
Experiential Learning	3,8,13,18,23	5	.82	.87
Independent Study	2,7,14,17,22	5	.82	.87
Interactive instruction	1,6,15,16,21	5	.82	.87
Total	25	25	.81	.87

Collection of Data

The research was carried out on July 2, 7, 8, and 9 in 2014. The researcher requested permission from the head master of the Escola Secundária Católica de São José Operário in Dili, Timor-Leste. The researcher coordinated with the teachers of the social studies in order to distribute the questionnaires to students. The questionnaires were distributed, administered and collected by the researcher himself. A total of 178 questionnaires were distributed and 178 were completed which represented a 100% return rate.

Results

Demographic Information

As table 3 indicates the total number of respondents was 178, 102 in grade 10 and 76 in grade 11. There were 46 male students in grade 10 and 56 female students. There were 27 male students in grade 11 and 49 female students.

Table 3: Demographic Information

Grade Level	Number of students and mean scores		
	Male	Female	Total
Grade 10	46	56	102
Grade 11	27	49	76
Total	73	105	178

Table 4 shows the findings for the first objective. The maximum mean scores of the subscales for motivation for learning social studies was extrinsic goal orientation (M=5.89), the minimum mean scores were both task value (M=4.84) and control for learning beliefs (M=4.84), and the rest were in between. The total summary mean score was 5.32.

Table 4: Summary of Mean and Standard Deviation for Each Subscale of The MLSSQ of Grade 10 and Grade 11 (n=178)

Learning Motivation	M	S.D.	Interpretation
Extrinsic Goal Orientation	5.89	.925	Very high
Self-efficacy for learning & performance	5.62	.987	High
Intrinsic Goal Orientation	5.37	1.014	High
Task Value	4.84	1.251	High
Control of Learning Beliefs	4.84	1.251	High
Total	5.32	.762	High

Table 5 shows the findings for the second objective. The grade 10 and grade 11 students of the Escola Secundária Católica de São José Operário in Dili, Timor-Leste in the school year 2014 had a maximum mean score of direct instruction at 6.10, the minimum mean score was experiential learning at 5.62, and the rest were medium mean scores. The overall mean score of preferred instructional strategies in grade 10 and grade 11 was 5.83.

Table 5: Overall Mean and Standard Deviation for Each Subscale of Instructional Strategies Preferences Questionnaire (ISPQ)

Instructional Strategies Preferences	M	S.D.	Interpretation
Direct Instruction	6.10	0.942	Very high
Interactive Instruction	5.88	0.999	Very high
Independent Study	5.82	1.029	Very high
Indirect Instruction	5.74	1.102	High
Experiential Learning	5.62	1.094	High
Total	5.83	0.859	Very high

Table 6 shows the frequencies and percentages of the instructional strategies subscales. The highest frequency and percentage were for direct instruction and the minimum frequency and percentage were for indirect instruction.

Table 6: Frequency and Percentage for Each Subscale of Instructional Strategies Preferences Questionnaire (ISPQ) of Grade 10 and Grade 11 (n=178)

Instructional Strategies Preferences	Frequency	Percent
Direct Instruction	53	29.8
Independent Study	39	21.9
Indirect Instruction	29	16.3
Experiential Learning	29	16.3
Interactive Learning	28	15.7
Total	178	100.0

Table 7 indicates the findings for the third objective. The researcher used One-Way ANOVA to determine students' preferences for learning social studies and motivation for learning social studies considered as one group. The students' motivation for learning social studies according to their preferences for instructional strategies was not significant.

Table 7: One-Way ANOVA Summary Table Comparing the Students' Motivation for Learning Social Studies according to Their Preferences for Instructional Strategies

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.813	4	.453	.739	.567
Within Groups	106.113	174	.613		
Total	107.926	178			

Additional Findings

The dominant respondents for each subscales of motivation for learning social studies in grade 10 and grade 11 was female students in extrinsic goal orientation (M=5.89), the minimum were both task value (4.92) and control of learning beliefs (4.92). The maximum respondents of each subscale for male students was extrinsic goal orientation (5.88), the minimum mean scores were both task value (M=4.73) and control of learning beliefs (4.73). Total mean scores for male and female students

were equal at 5.32. It could be interpreted that the male and female students' motivation for learning social studies in grade 10 and grade 11 were both high.

The dominant respondents for each subscale of instructional strategies preferences for social studies in grade 10 and grade 11 was male students in direct instruction (M=6.17), the minimum mean score was female students in indirect instruction (5.61). The total maximum mean scores based on the gender was male students (M=5.87) and the minimum was female students (M=5.79). It could be interpreted that the male students' preferences for instructional strategies for social studies in grade 10 and grade 11 was very high interpretation.

Discussion

Learning Motivation

Motivation plays a very important role in the learning process and helps learners in activating and empowering their desires and needs to learn. This study found that the level of students' motivation for learning social studies in grade 10 and grade 11 at the Escola Secundária Católica de São José Operário in Dili, Timor-Leste in the school year 2014 was high overall with the subscale of extrinsic goal orientation being very high and high in the four other subscales: self-efficacy for learning & performance, intrinsic goal orientation, task value, and control of learning beliefs. The findings showed that the students had a very high level of extrinsic goal orientation indicating that they respond well to teachers who use reinforcement to provide confidence, enthusiasm and energy that derives from controlled rewards such as, material belongings, prestige and positive assessment (Sansone & Harackiewicz, 2000 as cited in Larson & Rusk, 2011). Therefore, extrinsic incentives can function to help students to give more effort to learn social studies. Furthermore, Ryan and Deci (2000) argued that external reinforcement such as getting good grades, praise, and other reinforcements in a learning process can bridge learners from extrinsic motivation to intrinsic motivation. This latter point was supported in this study by the finding that intrinsic motivation for learning social studies was high and complemented the very high level for extrinsic motivation. Students can be effectively motivated through such extrinsic factors as grades, rewards, comparing performance, evaluation, and competition that enhance the students' motivation to learn. This was the instructional strategy the social studies teachers in the Escola Secundária Católica de São José Operário in Dili, Timor-Leste used to raise students' motivation for learning.

The level of self-efficacy for learning & performance in this study was high. Students' self-efficacy makes them learn more to absorb knowledge of social science through the performance in every given task where they expect success. In this regard, Pintrich et al. (1991) stated that expectancy for success and self-efficacy of learners in performing a given task helps them in controlling knowledge and skills to complete a task. Furthermore, Schunk (1991 cited in Azar & Reshadatjoo, 2014) argued that the learners have self-confidence and self-efficacy to complete a challenging task if they assume that they are capable of performing successfully. Given that the students self-selected to major in social studies in high school, their high self-efficacy for learning & performance in this study was undoubtedly influenced by self-interest

from the students chosen major in social studies. Furthermore, self-efficacy motivates students to learn more and perform well in order to get good marks, which reflects their very high extrinsic motivation scores in this study.

The findings also showed the students' intrinsic goal orientation was high. This indicated that the students desire to learn social studies, propelled by their very high level of extrinsic motivation, was also supported and complemented by their high level of intrinsic motivation. Learning for them was not solely about rewards but also included strong inner commitment. It is the desire to learn from internal interest and curiosity that influences how much learners learn through personal learning goals. Students learning goals in this study were self-set because they chose themselves to major in social studies. This research finding was advocated by Pintrich et al. (1991) when they noted that intrinsic goal orientation concerns how learners consider themselves participating in a task to learn and attain mastery in terms of their desire and self-efficacy. Lepper, Corpus, and Iyengar (2005) stated that usually students show their intrinsic motivation through their personal learning goals in order to motivate them in the learning process with self-determination.

Task value refers to students' views toward course material in terms of interest, and utility (Pintrich et al., 1991). The task value score was also high indicating that the students evaluated social studies as having value for them. Agnesia (2010) stated that if a task is related to students' personal values and goals, then their motivation to successfully complete the task will be increased. The students considered that the task value contributed to gain and achieve knowledge in learning social studies because all subject courses were related to social sciences which they had already chosen as their major study area. Furthermore, the score of task value was high as the students realized the given tasks were related to their individual learning goals.

The students also scored high in the control of learning belief subscale. The students' belief in the value and efficacy of their efforts to learn produced a positive outcome in the level of motivation to learn social studies. The students realized that more effort to learn made a difference in their results, thus enhancing their ability to control their academic performance to be more strategically effective (Pintrich et al., 1991). Pintrich's study (1999 cited in Cheng, 2011) argued that if learners believe their efforts to learn will result in positive outcomes, then their self-control over their learning will be improved. They begin to monitor and control not only their cognition and behavior but also their learning environment in more strategic and effective ways. Self-evaluation leads to improved learning effort toward achieving learning goals (Bandura, 1988).

The additional findings comparing the students' motivation for learning social studies by gender showed that male students' motivation for learning social studies in grade 10 was higher than female students and female students' motivation was higher than male students in grade 11. Both male and female students had high motivation in learning social studies because they were majoring in social studies based on their self-selected study programs.

Instructional Strategies Preferences

Students' instructional strategies preferences for learning social studies had three most preferred instructional strategies and two least preferred. The three subscales

categorized most preferred were direct instruction, interactive instruction, and independent study. The other two were least preferred: indirect instruction and experiential learning.

The students in both grade 10 and grade 11 most preferred direct instruction in learning social studies. Direct instruction is teacher-centered and is the strategy most commonly used in the teaching and learning process in Timor-Leste. The students mostly preferred direct instruction in their learning as it is the only strategy they had any significant experience with because they do not have wide access to the Internet or relevant sources to increase knowledge and skills through independent study. Direct instruction is a process where teacher first provides new information before classroom activities in which students integrate the new knowledge through practice in developing step by step skills of knowledge creation (Rosenshine, 1979 cited in Brophy, 1979). For them, the teacher is the only source of knowledge and the teacher only focuses on the text books from the Ministry of Education without any additional sources. The finding of direct instruction in this study was in contrast to the ideas of Magliaro, Lockee, and Burton (2005 cited in Wright, Terry, & Bartholomew, 2012) that direct instruction has become less widely used nowadays because of the recent push towards hands-on activities in schools. The finding showed that the students of Escola Secundária Católica de São José Operário in Dili, Timor-Leste most preferred direct instruction because this was their most experienced strategy in the teaching and learning process. This finding also correlated with the students' very high level of extrinsic goal orientation for learning social studies.

This study also indicated that interactive instruction was the second most preferred instructional strategy in grade 10 and grade 11 at the Escola Secundária Católica de São José Operário in Dili, Timor-Leste. Through interactive instruction students discuss and share among themselves and the teacher to improve knowledge in social studies. Cooperative learning helps students to improve their communication skills to get knowledge from friends and teachers to apply in daily life (Wohl & Klein-Wohl, 1994 as cited in Bayat, 2004). The students consider that the way to increase their knowledge is interacting with friends and teachers as a source of knowledge (teacher-centered and student-centered learning).

Independent study was the third most preferred instructional strategy the students' independent study contributes to improvement of individual creativity, self-improvement and self-confidence. It is important to become independent learners (student-centered learning) to enhance knowledge and abilities. Independent study will enhance students' self-confidence and better equip them for further education and daily life (Bolhuis & Voeten, 2001 as mentioned in Meyer, 2010). The students consider that knowledge from teacher and friends form them to learn independently on how to prepare for future challenges to become self-learners, self-motivated and self-confident.

The findings showed that indirect instruction was the least preferred instructional strategy. However, the students still indicated a high preference for indirect instruction in learning social studies. They considered that indirect instruction provides chances for them to explore knowledge and skills through problem solving by defining, analyzing, recommending and taking actions. In this case, students had more roles to act in conducting inquiry (student-centered learning) with teachers

acting as supporters, facilitators, organizer and guides. The finding showed that students had enough knowledge in conducting investigation to solve any problems in social studies. Indirect instruction is teaching of concepts, designs, perception, examining and evaluation. In this regard, the students' interest and curiosity are awakening to solve problems (Brenau, 2002 as cited in Oladayo & Oladayo, 2012).

The findings showed that experiential learning was the second least preferred instructional strategy the students' preferred experiential learning at a high level in learning social studies. They considered experiential learning as an activity that emphasizes the learning process, not the learning product. Therefore, it is necessary to make regular hands-on activities (student-centered learning) focusing on exploring students' experiences, sharing, analyzing, and applying rather than the quality of outcomes.

Both male and female students most preferred direct instruction because the students were most experienced with direct instruction and it was regularly used in teaching and learning activities. Indirect instruction was the second most preferred instructional strategy for male students; on the other hand, it was the second least preferred instructional strategy for female students. This finding showed that male students were discovering more knowledge and solving problems by analyzing, defining and taking actions. Furthermore, the male students had more roles to act in conducting inquiry or student-centered learning than female students because male students are more active and energetic in learning.

Independent study was the third most preferred instructional strategy for female students while it was the least preferred instructional strategy for male students. This finding showed that the female students were contributing more to improving their individual creativity, self-improvement, and self-confidence (Student-centered learning) than male students because they were calm focused on individuals' improvement in learning.

Based on the findings of this study, the researcher makes the following recommendations for practice.

- Teachers should teach students to be intrinsically motivated by providing achievable, interesting, enjoyable tasks to inspire them to attempt challenging learning activities. They should ask students what they are interested in and give them choices in learning tasks.
- Teachers must give efficacy praise to enhance the students' confidence in their ability to accomplish challenging learning tasks.
- Teachers should use extrinsic goals such as grades, praise, or other incentives. They also should motivate students to attend the class, be active in asking questions, active in class discussions, active in role play, class debates, conducting experiments and interactions with friends in solving problems, and completing homework.
- Teachers should employ all five instructional strategies in their classes.
- Teachers should identify what instructional strategies are fitting to teach different students and different grades by given them choices of instructional strategies that are most interesting for them to learn because students have different preferences of instructional strategies.

In terms of future research, larger studies should be conducted in government schools in Timor-Leste. Further studies should also be done with a combination of qualitative and quantitative data comparing students' motivation for learning social studies and their preferences for instructional strategies. Such an approach can give a greater depth to the findings and will improve understanding of the motivation for learning social studies and their preferences for instructional strategies among Timor-Leste secondary level students.

References

- Agnesia, R. H. (2010). Features affecting task-motivation in English for academic purposes online learning. *Second Language Studies*, 1-34. Retrieved from <http://www.hawaii.edu/sls/wp-content/uploads/2014/09/Agnesia3.pdf>.
- Artino, A. R. (2005). Review of the motivated strategies for learning questionnaire. Retrieved from <http://files.eric.ed.gov/fulltext/ED499083.pdf>.
- Azar, N. N. & Reshadatjoo, H. (2014). Designing a model to improve first year student adjustment to University. Retrieved from http://www.growing-science.com/msl/Vol4/msl_2014_78.pdf.
- Bandura, A. (1988). Organizational applications of social cognitive theory. *Australian Journal of Management* 13, 2, December 1988, © The University of New South Wales. Retrieved from <http://www.uky.edu/~eushe2/Bandura/Bandura1988AJM.pdf>.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational psychologist*, 28 (2), 117-148. Retrieved from <http://jamie-smithportfolio.com/EDTE800/wp-content/PrimarySources/Bandura5.pdf>.
- Bandura, A. (2001). *Social cognitive theory: An agentic perspective*. *Annual Review Psychology* 2001.52:1-26. Retrieved from <http://www.uky.edu/~eushe2/Bandura/Bandura2001ARPr.pdf>.
- Bayat, O. (2004). The effect of cooperative learning activities on student attitudes towards English reading courses and cooperative learning. Retrieved from <http://www.thesis.bilkent.edu.tr/0002567.pdf>.
- Brophy, J. E. (1979). Teacher behavior and student learning. Retrieved from http://www.ascd.org/ASCD/pdf/journals/ed_lead/el_197910_brophy.pdf.
- Broussard, S. C. & Garrison, M. E. B. (2004). The relationship between classroom motivation and academic achievement in elementary school-aged children. *Family and Consumer Sciences Research Journal*, 33(2), 106–120. Retrieved from <http://www.sagepub.com/wrightstudy/articles/Broussard.pdf>.
- Cheng, E. C. K. (2011). The role of self-regulated learning in enhancing learning performance. *The International Journal of Research and Review*, Volume 6 Issue 1, March 2011. Retrieved from http://libir1.ied.edu.hk/pubdata/ir/link/pub/A1_V6.1_TIJRR.pdf.
- Froiland, J. M., Oros, M., Smith, L. & Hirschert, T. (2012). Intrinsic motivation to learn: The nexus between psychological health and academic success. Retrieved from http://www.casponline.org/pdfs/pdfs/intrinsic_motivation.pdf.
- Huitt, W. (2001). Overview of motivation. Motivation: Our internal forces. Retrieved from <http://psyed.org/r/mot/md/mot.html>.

- Larson, R. W., & Rusk, N. (2011). Intrinsic motivation and positive development. Retrieved from <http://youthdev.illinois.edu/wp-content/uploads/2013/10/Larson-Rusk-2011-Intrinsic-Motivation-and-Positive-Development-Mot-Pos-Dev.pdf>.
- Lepper, M. R., Corpus, J. H. & Iyengar, S. S. (2005). Intrinsic and extrinsic motivational orientations in the classroom: Age differences and academic correlates. *Journal of Educational Psychology*, 97(2), 184-196. Retrieved from http://www.unco.edu/cebs/psychology/kevinpugh/motivation_project/resources/lepper_etal05.pdf.
- Meyer, W. R. (2010). Independent learning: a literature review and a new project. Retrieved from <http://www.leeds.ac.uk/educol/documents/193305.pdf>.
- McCombs, B.L., & Miller, L. (2007). *Learner-centered classroom practices and Assessment: Maximizing student motivation, learning, and achievement*. Thousand Oaks, CA: Corwin Press.
- Oladayo, O. T. & Oladayo, O. E. (2012). Effects of direct and indirect instructional strategies on students' achievement in Mathematics. *African research review*, An international multidisciplinary journal, Ethiopia Vol. 6 (4), Serial No. 27, October, 2012. Retrieved from <http://www.ajol.info/index.php/afrev/article/viewFile/83618/73645>.
- Pintrich, P., Smith, D., Garcia, T., & McKeachie, W. (1991). A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ). *National Center for Research to Improve Post-secondary Teaching and Learning*. (Ann Arbor, Michigan). The University of Michigan Ann Arbor, Michigan 48109-1259 (313)936-274. Retrieved from <http://files.eric.ed.gov/fulltext/ED338122.pdf>.
- Ryan, R.M., & Deci, E.L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25: 54-67. Retrieved from <http://mmrg.pbworks.com/f/Ryan,+Deci+00.pdf>.
- Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms*. (2nd Ed.) Alexandria, SCD. Retrieved from http://westenglish.weebly.com/uploads/3/1/1/3/3113826/differentiated_instruction_tomlison_book.pdf.
- Wright, G., Terry, R., & Bartholomew, S. (2012). Analysis of five instructional methods for teaching sketchpad to junior high students. *Journal of technology education*: Volume 24, Number 1. Retrieved from <http://scholar.lib.vt.edu/ejournals/JTE/v24n1/wright.html>.