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The interplay of locus of control and Iranian EFL high school learner`s language achievement

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ABSTRACT

Locus of control in social psychology refers to the extent to which individuals believe that they can control events that affect them. The purpose of the study was to determine the relationships between locus of control (LOC) orientation and high school student`s language achievement. The dichotomous categorization of Internals and Externals was taken into account. The participants of this study were 121 high school students in the second, third and pre university grades in a two high school of Iran. The instrument used in the study was the revised version of Julian Rotters` locus of control (2003) which identified internal and external orientations. The participants' English scores were regarded as the measure of their achievement. A questionnaire consisting of 29 items was administered to all 121 students. Responses were analyzed through one way and two way ANOVA, the regression analysis, the independent t-test and chi-square and linear regression analysis to determine the means on two sets of scores. The findings of this study showed a significant relationship between locus control and achievement of high school students in Iran. The findings can be used by English as a Foreign Language, students, teachers, curriculum developers, syllabus designers and testing specialists.

Introduction

English Language is a tool through which people across the globe engage in effective and active communication with one another. In many countries of the world where English is learned as a foreign language like Iran, high school students are obliged to pass certain number of English courses. Fakeye (2002) highlighted the need for improving the quality of spoken and written English language among school learner`s. However, one of the current educational problems of public interest is that of poor performance students in English language especially in public examinations (Kolawole, 1998). Any thorough study of L2 acquisition entails investigating factors leading to individual differences in learners (Ellis, 2008) which differ from one individual to another (Dornyei, 2005) and concern anything which marksa person as distinct human being (De Road, 2000).A Daily Sketch Publication of 28TH August 2006, on "Causes and Cures of Poor Performance at West African School Certificate Examination (WASCE) in 2006" identified and categorized problems responsible for students' poor performance mostly in English language to problems of teachers, problems of inadequate facilities in the schools, problem traceable to students, problems caused by parents and society at large and problems of government policies and low funding of the education sector. Early studies of individual differences tried to classify learners as good and bad, intelligent and dull, motivated and unmotivated (Horwitz, 2000). Recently more research has focused on explaining why some learners are more successful than others. Robinson (2002) and Dornyei (2005), in line with the previous research done by Skehan (1989), both included language aptitude, motivation, personality, and anxiety in their list as the main factors. Most of the studies done have criticized the textual and instructional goals of language courses and have remained oblivious to learner characteristics as a relevant and indispensable factor in language achievement. In the constructivist approach, an individual's understanding of the world is gradually reshaped as they adapt their knowledge to new information. The way in which individuals perceive the world and themselves plays an important role in their learning. Thus, rather than focusing on how learners are different from each other or measuring their differences, it would be really useful to concentrate on how learners perceive themselves as language learners, what influences their personal views have on their learning processes, and how teachers can assist them in making sense of their learning that is personal to them. One important area which is related to the way in which learners perceive themselves is Locus of Control (LOC). In this study we aim at examining the relation of this affective variable and language achievement among Iranian high school students. Locus of control is arecent psychological construct which has been treated as influential and important in achieving learning goals as instructional and textual factors. Locus of control is viewed as an important aspect of psychology developed by Julian Rotter in 1966. It is a generalized belief about the underlying causes of events of his or her life. Individual has diverse belief about who controls his or her destiny. In other words, an individual's destiny could be controlled by oneself, fate, god or powerful others. Trylong (1987) gave a full name to the concept as 'Locus of control of reinforcement'. He tried to bridge the gap between behavioral and cognitive psychology. He is of the view that behavior is guided largely by reinforcements which could be in form of rewards and punishments. Individual holds the belief about what causes their actions through contingencies such as rewards and punishments.

These beliefs give the kind of attitude people adopt towards an event. In other words, the locus of control has a

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correlational link with attitude. In the context of foreign language learning, learners hold different beliefs about their success or failure in the foreign language program. A student who has a poor performance in a foreign language program may ascribe his failure to the difficulty of the language, the attitude of the foreign language instructor, inadequacy in the teaching methods adopted by the foreign language instructor. These beliefs would invariably determine the locus of control of the learner. Thus Locus of control reefer's to an individual`s generalized expectations concerning where control over subsequent events resides. In other words, who or what is responsible for what happens. Rotter's locus of control is not a dichotomous concept. At one end is internal LOC, and at the other end is external LOC. One who generally believes that control over events in one's life lies within oneself has an internal LOC, while one who generally believes that control over events in one's life lies outside of oneself has an external LOC. Individuals with an external LOC believe life events are the result of fat chance, luck, or powerful others. However, as Williams and Burden (2000) state, it is clear that many people tend towards one end of the spectrum or the other where significant life events are concerned.The concept of LOC is closely related to attribution theory, which is the process through which the causes of the events can be explained (Jarvis, 2005). Weiner (1979), who developed this theory, first referred to four important sets of attribution for the individuals' perceived success and failure in their life: a) ability b) effort c) success and d) the level of difficulty of the tasks they are involved in. Later Weiner (1992) identified that the nature of the attributions concerning learners' success or failure has three dimensions:

1. Locus of control: the extent to which individuals believe they can control events.
2. Stability: success or failure may have stable causes of success (effort or task difficulty) or unstable ones (luck, mood).
3. Controllability: the extent to which elements or events are within the individuals' control or not.

Generally, learners with an internal LOC are likely to attribute results to their own actions or efforts when they are controllable; otherwise, they are attributed to ability and mood which are not controllable. On the other hand, externalizes attribute their success or failure to features of the situation or external stable cases like task difficulty in case they are uncontrollable; otherwise, they may be attributed to unstable causes like teacher bias.A number of previous studies have identified significant relationships between locus of control and academic achievement (Siegal, 1992; Baker, 1998; Stubbs, 2001). From these studies it was concluded that internals tend to show superior achievement in comparison to their external counterparts. Another research presented by Umoh (1991) confirmed the evidence that there is a relationship between locus of control and academic achievement levels. Also many researches on academic achievement had focused on students 'perceptions of the psychological factors related to academic achievement (Williams, 1990). Tucker, Hamayan and Genesse (2006) also believe that the people become more internal as they get older. It is controversial in the field of psychology holding the belief that internal locus of control is desirable while external locus of control is undesirable and vice-versa. It is assumed that the two subtleties are desirable depending on the circumstances surrounding the action or event. In learning situation, internal orientation needs to be accomplished by competence, self-efficacy and opportunity. On the other hand it is believed that internal who lacks competence, self-efficacy and opportunity can become neurotic, anxious and depressed.

In foreign language learning situation, learners who have internal locus of control must be able to demonstrate high level of competence, intelligence and aptitude for learning of the language in order to be able to achieve success in the language program. As earlier mentioned, if learners are optimistic of achieving success in a foreign language program and lack the competence, intelligence and self-efficacy in the learning process, they may become depressed or over anxious and drop out of the foreign language class. This view is also supported by Araromi (2010). This explanation draws our attention to the relationship between foreign language aptitude and locus of control. Sometimes locus of control is seen as a stable personality construct but research findings and theories held the view that locus of control could be learned. However, those with an internal locus of control are likely to see a bright future for themselves by trying harder and making more attempts which may lead to a raise in their grades (Noel, et al., 1987). Examining the behavior of internals and externals in performing tasks, Kernis (1984) found that internals were interested in continuing the tasks they performed successfully whereas externals avoided working on particular learning task andpreferred to work on other tasks. This finding was partially in line with Lonky and Reiman's (1980) research in which their internal students spent more time on performing tasks than externals.

According to Baker (1998), the term "locus of control" is generalizedexpectancy for internal as opposed to external control of reinforcements. In the same vein, Shammen (2004) states that locus of control refers to what one ascribes responsibility or blames for what is happening in one's life. The dichotomy between external and internal loci of control is aptly captured by Trylong (1987) when he states that internality and externality represent two ends of a continuum, not as either/or typology. A locus of control indicates the influence that circumstances/environment or individual characters/traits have on directing people's activities. Research indicates that people perform better when they have a moderate to strong internal locus of control. The position of the locus of control is significant because all things being equal, people will either see themselves as masters of their destiny or victims of circumstances. However, the latter being true, Tucker et al (2007) are of the opinion that people with an external locus of control tend to be more stressed and prone to clinical depression. Furthermore, external locus of control makes people vulnerable to manipulation and open to abuse since externals would depend largely on the reinforcement by significant others for everything they do. Conversely, internals are more at peace with themselves and they take responsibility for their mistakes and successes. In addition to the existing variables, Shammen (2004) adds three psychological characteristics; perception of competence, perceived internal locus of control, and intrinsic motivation. These writers also claim that the internal perceptions of students as to the locus of control regarding academic success or failure are important for the development of learner competency. In other words, students may take moreresponsibility for learning if they believe themselves to be competent (Araromi, 2010). Emphasizing this continuum, Williams(1990) and Stubbs (2001) claim that learners who are able to self-regulate the

locus of control throughout the learning experience are strategic learners. Those learners learn through the positive experience of a good performance, through the experience of others, through verbal persuasion, and through a positive physiological state, and eventually develop their self-regulatory skills to the point where they become self-regulated proficient learnersand take control of their learning process.(See Table below for a summary of research findings on locus of control).

Objective of the study

This study intended to see if there is any relationship between internal/external locus of control orientations and EFL high school learner`s achievement. The research sought to determine what direction and strength changes occurred within these variables (LOC and ACH) and the relationship between them as students progressed through high school grade. Investigating the relationship between students' locus of control cognitive style and their year of the study was also another objective of the study. Besides, the study aimed to examine variables (LOC and ACH) differences and relationship changes or differences associated with age, and gender.

Research Questions

Based on the purpose of the study, the researchers sought answers to the following questions:

1. Is there any significant relationship between locus of learner`s (external and internal) and their achievement in English Language?
2. If there exist such a relationship, can LOC predict learner`s language achievement?
3. Is there any difference between male and female regarding their LOC?
4. How are male and female learner`s language achievement different with regard to their LOC?
5. Do learner`s age and year of study and their interaction have any significant effect on the performance of EFL learner`s on LOC?
6. What is the relationship of learner's year of the study, type of LOC?

Methodology

Participants

This study is composed of 121 students between the ages of 15 and 19, in two public high schools in Tehran. Out of the whole sample, 78 were female and 43 were male. As for the "school year" variable, 47 students were in 2nd grade of high school, and 34 were in 3rd grade of high School and 40 students were in pre-university. The mark used in this study were all for the latest English mark of students.

Instruments

The instruments which measured the participants' language achievement were final English exams they took at the end of the year.On the other hand, for determining internal or external locus of control, we looked at scores obtained by students in the revised version of Julian Rotter's locus of control questionnaire (Rotter, 2003) which includes 29-item forced choice scale of feelings of LOC. The Cronbach Alpha Test of Reliability was employed to establish the reliability coefficient for the questionnaire. The test yielded a reliability coefficient of .78. To ensure the construct validity of this scale, the factor analysis was done. It showed the questionnaire has high construct validity, because most items loaded on only components 1 and 2.

Data collection procedure:

Before distributing the Rotter's (2003) questionnaire to the 121 students,, they were Informed briefly about the purposes of the study and the possible Implications its results may have for EFL learners and teachers, and also the format and content of the questionnaire on the whole, but the purpose of the study and the content of questions were not clearly explained, since it could bias the participants' answers to questions. They were told that all the collected information would be kept confidential. They answered the questionnaire in about 40 minutes. The questionnaires were administered to six classes, two classes of 2nd grade students (one boy one girl), two classes of 3rd students (one girl, one boy), and two classes of pre-university students (one boy, one girl). It took 3 days to collect data by questionnaires.

Data Analysis Procedures

The collected data were put into Statistical Package for Social Sciences (SPSS) to be analyzed. The total score of each learner reveals his/her locus of control, and it also shows to what extent he/she is internal or external. A one way ANOVA is run to probe any significant difference between the internal and external LOC and high school learner`s language achievement and a linear regression analysis is run to probe if LOC scores can predict the learner`s language achievement, also An independent T-test is run to probe any significant difference between the performance of male and female students in LOC. A Chi-square statistics is run to probe any significant relationship between learner`s year of study and type of LOC.

A repeated measures ANOVA is run to investigate the effect of gender of the students on their performance on the LOC and *Mark tests. And two way ANOVA is run to probe the effect of learner`s age and year of study and their interaction on the performance of EFL learners LOC.*

Results and discussion

Research question 1: Is there any relationship between external and internal LOC and EFL high school learner`s language achievement?

A one way ANOVA is run to probe any significant difference between the internal and external LOC and high school learner`s language achievement.

The homogeneity of variances is the assumption of the one way ANOVA. As displayed in table 3.1.1 the Levene F of 0.657 has a probability of 0.58. Since the probability associated with Levene F is higher than 0.05, it can be concluded that the 3 groups are homogeneous in terms of variance. *(*Table 3.1)

The F-observed value is 0.959 (0.415>0.05) (Table 3.1.2). This amount of F-observed is lower than the critical F-value of 2.68 at 3 and 117 degrees of freedom Since the F-observed value is lower than its critical value, it can be concluded that there is not any significant difference between the internal and external LOC and learner`s language achievement. Thus the null hypothesis is supported.

Table 3.1.3 displays the descriptive statistics for students' achievement scores. The Descriptive Statistics for the four groups are displayed in Table 3. The internal Students show the highest mean score 17.27. This is followed by very strong external (16.99) external (16.11) and both external and internal (15.93).

3.2: Research Question 2: If there exist such a relationship, can LOC predict learner`s language achievement?

A linear regression analysis is run to probe if LOC scores can predict the learner`s language achievement.

As displayed in Table 3.2.1, LOC is the best predictors that are entered into the regression model. According to the table,

The R-value of LOC is .015 with an R-square of .000. Hence, it can be concluded that LOC scores can NOT predict high school learner's language achievement.

Regression equation can be written based on the information given in table 3.2.3, Y' = constant + (X_1 x B_1) + (X_2 x B_2). Based on this equation to predict learner`s language achievement, his/her score should be multiplied by regression coefficient -0.012 added by the constant value of 16.36.

Research Question 3: Is there any difference between male and female regarding their LOC?

An independent T-test is run to probe any significant difference between the performance of male and female students in LOC. The t-observed value is 2.097 (0.038<0.05) (Table 3.3.1) this amount of t-observed is higher than the critical t-value of 1.98 at 119 degrees of freedom.

Since the t-observed value is higher than its critical value, it can be concluded that there is a significant difference between the performances of male EFL students with the mean of 15.8 and performances of female EFL students with the mean of 17.0.Thus the null hypothesis is rejected.

The results of the study are statistically significant but of weak to moderate value. The effect size (Cohen 1988) for the t-value of 2.097 is R = .18. Based on the criteria developed by Cohen an effect size of .18 is considered as weak to moderate.

Research Question 4: How are male and female learner`s mark different with regards to their LOC?

A repeated measures ANOVA is run to investigate the effect of gender of the students on their performance on the LOC and Mark tests. The gender has a significant effect on both tests (F = 12.49; P = .001 < .05). Thus the null-hypothesis is rejected.

As table 3.4.3 reveals the F-observed value for comparing the LOC and Mark is significant (F = 227; P = .000 < .05). As displayed in Table 3.4.3 there is not any significant interaction between gender factor and the tests factor (F = .64; P = .47 > .05). As displayed in Table 3.4.4 the students performed better on the Mark test.

Research Question 5: Do learner`s age and year of study and their interaction have any significant effect on the performance of EFL learner`s on LOC?

A two way ANOVA is run to probe the effect of learner`s age and year of study and their interaction on the performance of EFL learners LOC. The F-observed value for the effect of grade is 3.256. (0.0.042>0.05) (Table 3.5.1)This amount of F-observed is higher than the critical F-value of 3.07 at 2and 113 degrees of freedom. Since the F-observed value is higher than its critical value, it can be concluded that gender has a significant effect on the performance of EFL learner`s on LOC.

As displayed in table 3.5.2 the mean scores for second and third grade and pre-university students are 6.023, 9.815, and 10.223 respectively. Thus the null hypothesis is rejected**.**

The results of the study are both statistically significant and meaningful. The F-observed value for the effect of age is 0.06 (0.550>0.05) (Table 2) This amount of F-observed is lower than the critical F-value of 3.07 at 2 and 113 degrees of freedom. Since the F-observed value is lower than its critical value, it can be concluded that age doesn't have a significant effect on the performance of EFL learner`s on LOC. Thus the null hypothesis is supported. The results of the study are neither statistically significant nor meaningful As displayed in table 3.5.3 the mean scores for 15 and 16 year-old students 8.376,for 17 year old student`s 9.489 and for 18 and above is 7.580.Thus the null hypothesis is supported.

The F-observed value for the effect of the interaction of age and grade is 1.58. (0.19>0.05) (Table 3.5.1)This amount of F-observed is lower than the critical F-value of 2.68 at 3 and 113 degrees of freedom. Since the F-observed value is lower than its critical value, it can be concluded that the interaction of grade and age doesn't have any significant effect on the performance of EFL students LOC. Thus the null hypothesis is supported. The results of the study are neither statistically significant nor meaningful.

As table 3.5.4.reveals, the mean score for second grade students at the age of 15 and 16 years old is 8.64, 17 years old is 8.42 and 18 and above is 1.00. For third grade students at the age of 1 and 16 years old is 8.11 for 17, 9.33 and for 18 and above is 12, 00. And for pre-university students at the age of 17 is 17.70 for 18 and above is 9.739.

Research Question 6: What is the relationship of learner's year of the study, type of LOC?

A Chi-square statistics is run to probe any significant relationship between learner`s year of study and type of LOC. The chi-square observed value is 11.87 (Table 3.6.1) and this amount of chi-square value is lower than its critical value of 12.59 at 6 degrees of freedom. As the chi-square value is lower than its critical value it can be concluded that there is not a significant relationship between learner`s grade, their achievement and LOC.

As it is displayed in (table 3.6.2) 21.3% of second grade learners had very strong external LOC, and 40.4 % had external LOC. 27.7% were both internal and external LOC and 10.6% had internal LOC.

14.7% of third grade learner`s had very strong external LOC, 35.3% of learner`s had external LOC, 41.2% were both internal and external.8.8% had internal LOC.

40.0% of pre-university learner`s had external LOC, 52.5% of learner`s were both internal and external, 7.5% of learner`s had internal LOC and no one had very strong external LOC.

As displayed in Table 3.6.2, as students' grades increase their External LOC levels also decrease and their internal LOC levels increase. The percentages of second, third and pre-university students who have external or strong external LOC are 61.7, 50 and 40 respectively.

On the other hand the percentages for the internal LOC for second, third and pre-university grades are 10.6, 8.8 and 7.5.

Enjoying both types of LOC, i.e. internal and external, increases as students' years of study increase. The percentages for three grades are 27.7, 41.2 and 52.5.

Conclusion

This study began with the main question of examining the relation of Locus of control and Iranian EFL high school language achievement. The overall findings of this study revealed that there was no significant difference between the internal and external LOC and learner`s language achievement. And it can be concluded that LOC scores can NOT predict high school learner's language achievement. The study found that there was a significant difference between the performances of male EFL students and performances of female EFL students. The findings of this study showed that The gender has a significant effect on both tests and also that gender has a significant effect on the performance of EFL learner`s on LOC. But No main relationship was found between age have a performance of EFL learner`s on LOC. The study found that the interaction of grade and age doesn't have any significant effect on the performance of EFL students LOC.As opposed to the

researchers' assumption, there was not a significant relationship between learner`s year of study, and type of LOC.

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Appendix A

Rotter's Locus of Control Scale

1. a. Children get into trouble because their patents punish them too much.

1. b. The trouble with most children nowadays is that their parents are too easy with them.

2. a. Many of the unhappy things in people's lives are partly due to bad luck.

2. b. People's misfortunes result from the mistakes they make.

3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.

3. b. There will always be wars, no matter how hard people try to prevent them.

4. a. In the long run people get the respect they deserve in this world.

4. b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

5. a. The idea that teachers are unfair to students is nonsense.

5. b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

6. a. Without the right breaks, one cannot be an effective leader.

6. b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7. a. No matter how hard you try, some people just don't like you.

7. b. People who can't get others to like them don't understand how to get along with others.

8. a. Heredity plays the major role in determining one's personality.

8. b. It is one's experiences in life which determine what they're like.

9. a. I have often found that what is going to happen will happen.

9. b. Trusting fate has never turned out as well for me as making

a decision to take a definite course of action.
10. a. In the case of the well prepared student there is rarely, if ever, such a thing as an unfair test.
10. b. Many times, exam questions tend to be so unrelated to course work that studying in really useless.
11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
11. b. Getting a good job depends mainly on being in the right place at the right time.
12. a. The average citizen can have an influence in government decisions.
12. b. This world is run by the few people in power, and there is not much the little guy can do about it.
13. a. When I make plans, I am almost certain that I can make them work.
13. b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow. 1
14. a. There are certain people who are just no good.
14. b. There is some good in everybody.
15. a. In my case getting what I want has little or nothing to do with luck.
15. b. Many times we might just as well decide what to do by flipping a coin.
16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
16. b. Getting people to do the right thing depends upon ability - luck has little or nothing to do with it.
17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
17. b. By taking an active part in political and social affairs the people can control world events.
18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
18. b. There really is no such thing as "luck."
19. a. One should always be willing to admit mistakes.
19. b. It is usually best to cover up one's mistakes.
20. a. It is hard to know whether or not a person really likes you.
20. b. How many friends you have depends upon how nice a person you are.
21. a. In the long run the bad things that happen to us are balanced by the good ones.
21. b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22. a. With enough effort we can wipe out political corruption.
22. b. It is difficult for people to have much control over the things politicians do in office.
23. a. Sometimes I can't understand how teachers arrive at the grades they give.
23. b. There is a direct connection between how hard I study and the grades I get.
24. a. A good leader expects people to decide for themselves what they should do.
24. b. A good leader makes it clear to everybody what their jobs are.
25. a. Many times I feel that I have little influence over the things that happen to me.
25. b. It is impossible for me to believe that chance or luck plays an important role in my life.
26. a. People are lonely because they don't try to be friendly.
26. b. There's not much use in trying too hard to please people, if they like you, they like you.
27. a. There is too much emphasis on athletics in high school.
27. b. Team sports are an excellent way to build character.
28. a. What happens to me is my own doing. 2
28. b. Sometimes I feel that I don't have enough control over the direction my life is taking.
29. a. Most of the time I can't understand why politicians behave the way they do.
29. b. In the long run the people are responsible for bad government on a national as well as on a local level.

Table 1: Examples about causal inferences about success and failure (Jarvis, 2005: 125)

Ability	I am clever	I am not clever enough
Effort	I tried hard	I didn't try enough
Level of difficulty	It was easy	It was too hard
Luck	I had good luck	I had bad luck

Researcher	Internals	Externals
Bender (1995)	*see their efforts fruitful **enjoy working hard ***see failures as their own faults	*see their efforts fruitless **do not mind working hard ***see their failures as fate
Basgall and Snyder (1988)	*mind their poor performance **attribute their failures to their efforts and attempts ***think that their poor performance hurt their self-esteem	*do not mind their poor performance **attribute their failures to chance, destiny or other people's faults ***think that their poor performance does not hurt their self-esteem
Phares (1979)	*accept their individual inadequacy	*escape their individual inadequacy
Anderman and Midgly (1997)	*are likely to see a bright future	*are unlikely to see a bright future
Kernis (1984)	*are persistent in performing	*are not persistent in performing
Lonkey and Reiman (1980)	*spend much time on performing learning tasks	*do not spend much time on performing learning tasks
Biaggio (2004)	* experience state-anxiety in "ability" situations	*experience state-anxiety in "luck" situations
Carden, Bryant, and Moss (2004)	*experience higher academic procrastination **experience higher anxiety	*experience lower academic procrastination **experience lower anxiety

Table 3.1.1Test of Homogeneity of Variances

POSTTEST

Levene			

Table 3.1.2:ANOVA

MARK

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	25.295	3	8.432	.959	.415
Within Groups	1028.898	117	8.794		
Total	1054.193	120			

Table 3.1.3: Descriptives

MARK

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
VERY STRONG EXTERNAL	15	16.9933	2.42707	.62667	15.6493	18.3374	11.00	20.00
EXTERNAL	47	16.1128	3.06636	.44727	15.2124	17.0131	7.00	20.00
BOTH	48	15.9396	3.10706	.44847	15.0374	16.8418	7.00	20.00
INTERNAL	11	17.2727	2.45320	.73967	15.6246	18.9208	12.00	20.00
Total	121	16.2587	2.96394	.26945	15.7252	16.7922	7.00	20.00

Table 3.2.2: ANOVA(c)

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.244	1	.244	.028	.868[a]
	Residual	1053.949	119	8.857		
	Total	1054.193	120			

a. Predictors: (Constant), LOC

b. Dependent Variable: MARK

As ANOVA table (table 3.3.2) reveals the regression model is not statistically significant (F = .028; P = .86 >

Table 3.2.1 : Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.015[a]	.000	-.008	2.97602

a. Predictors: (Constant), LOC

Table3.2.3:.Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	16.368	.710		23.057	.000
LOC	-.012	.071	-.015	-.166	.868

a. Dependent Variable: MARK

Table 3.3.1: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
MARK	Equal variances assumed	12.83	.000	2.09	119	.038	1.16	.55	-.06	2.26
	Equal variances not assumed			2.40	118.1	.018	1.16	.48	-.20	2.12

Table 3.3.2: Group Statistics

SEX	N	Mean	Std. Deviation	Std. Error Mean
FAMALR	78	15.8449	3.32307	.37626
MALE	43	17.0093	1.98995	.30346

3.4.1: Tests of Between-Subjects Effects

Measure:MEASURE_1
Transformed Variable:Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	37167.702	1	37167.702	3.555E3	.000
SEX	130.643	1	130.643	12.495	.001
Error	1244.168	119	10.455		

As displayed in Table 3.4.2 the male students with a grand mean (LOC and mark) 13.71 performed better than the female students.

TABLE 3.4.2: SEX

Measure:MEASURE_1

			95% Confidence Interval	
SEX	Mean	Std. Error	Lower Bound	Upper Bound
MALE	13.714	.349	13.024	14.404
FAMALR	12.179	.259	11.666	12.691

Table 3.4.3: Multivariate Tests[b]

Effect		Value	F	Hypothesis df	Error df	Sig.
factor1	Pillai's Trace	.656	2.270E2[a]	1.000	119.000	.000
	Wilks' Lambda	.344	2.270E2[a]	1.000	119.000	.000
	Hotelling's Trace	1.908	2.270E2[a]	1.000	119.000	.000
	Roy's Largest Root	1.908	2.270E2[a]	1.000	119.000	.000
factor1 * SEX	Pillai's Trace	.005	.644[a]	1.000	119.000	.424
	Wilks' Lambda	.995	.644[a]	1.000	119.000	.424
	Hotelling's Trace	.005	.644[a]	1.000	119.000	.424
	Roy's Largest Root	.005	.644[a]	1.000	119.000	.424

a. Exact statistic

b. Design: Intercept + SEX
Within Subjects Design: factor1

3.4.4: factor1

Measure:MEASURE_1

			95% Confidence Interval	
factor1	Mean	Std. Error	Lower Bound	Upper Bound
1	16.427	.278	15.877	16.977
2	9.466	.352	8.768	10.163

Table 3.5.1:Tests of Between-Subjects Effects

Dependent Variable:LOC

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	147.753[a]	7	21.108	1.501	.174
Intercept	2752.070	1	2752.070	195.726	.000
GRADE	91.572	2	45.786	3.256	.042
AGELEVEL	16.877	2	8.439	.600	.550
GRADE * AGELEVEL	67.411	3	22.470	1.598	.194
Error	1588.875	113	14.061		
Total	11956.000	121			
Corrected Total	1736.628	120			

a. R Squared = .085 (Adjusted R Squared = .028)

Table 3.5.2: GRADE

Dependent Variable:LOC

			95% Confidence Interval	
GRADE	Mean	Std. Error	Lower Bound	Upper Bound
SECOND GRADE	6.023	1.351	3.346	8.700

Table3.5.3: AGELEVEL
Dependent Variable:LOC

AGELEVEL	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
15 AND 16	8.376[a]	.693	7.002	9.750
17	9.489	.617	8.268	10.711
18 AND ABOVE	7.580	1.787	4.040	11.120

Table 3.5.4: GRADE * AGELEVEL

Dependent Variable: LOC

GRADE	AGELEVEL	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
SECOND GRADE	15 AND 16	8.641	.600	7.451	9.831
	17	8.429	1.417	5.621	11.236
	18 AND ABOVE	1.000	3.750	-6.429	8.429
THIRD-GRADE	15 AND 16	8.111	1.250	5.635	10.587
	17	9.333	.765	7.817	10.850
	18 AND ABOVE	12.000	3.750	4.571	19.429
PRE-UNIVERSITY	15 AND 16	.[a]	.	.	.
	17	10.706	.909	8.904	12.508
	18 AND ABOVE	9.739	.782	8.190	11.288

a. This level combination of factors is not observed, thus the corresponding population marginal mean is not estimable.

Table3.6.1: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.875[a]	6	.065
Likelihood Ratio	16.346	6	.012
Linear-by-Linear Association	4.989	1	.026
N of Valid Cases	121		

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is 3.09

Table 3.6.2: GRADE * LOCLEVEL Crosstabulation

			LOCLEVEL				Total
			VERY STRONG EXTERNAL	EXTERNAL	BOTH	INTERNAL	
GRADE	SECOND GRADE	Count	10	19	13	5	47
		% within GRADE	21.3%	40.4%	27.7%	10.6%	100.0%
	THIRD-GRADE	Count	5	12	14	3	34
		% within GRADE	14.7%	35.3%	41.2%	8.8%	100.0%
	PRE-UNIVERSITY	Count	0	16	21	3	40
		% within GRADE	.0%	40.0%	52.5%	7.5%	100.0%
Total		Count	15	47	48	11	121
		% within GRADE	12.4%	38.8%	39.7%	9.1%	100.0%