INFLUENCE OF SOCIAL LOAFING ON FORMATIVE AND SUMMATIVE ASSESSMENT OF UNDERGRADUATE STUDENTS IN BAYERO UNIVERSITY KANO

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Abstract

The trends of formative assessment is swiftly changing from individual to group assignments partly due to rapidly increasing lecturer/student ratio as well as the fact the schools now favour cooperative learning and constructivists ideas. This study investigates the influence of social loafing on the outcome of formative assessment among undergraduate students. In addition to investigating the prevalence of social loafing, it is further hypothesized that there is no significant difference in examinations scores of loafers and non-loafers and that group assignment(s) do not significantly predict examination results in Bayero University, Kano. From a population of 3412 students, a sample of 370 students is randomly selected using systematic sampling technique. Social loafing inventory with a cronbach alpha internal consistency coefficient of 0.89 and a convergent validity index of 0.77 is administered to the respondents. Data on summative assessment (Group assignment) and formative assessment (semester examinations) is collated from examination office; the data is analysed using simple percentage, t. test for independent sample and linear regression analysis. Findings from the study reveal a 53.7% prevalence of social loafing. Difference in summative examination scores between loafers and non-loafers is also found and the social loafing is found to predict 15% decrease in students' summative assessment. It is recommended that lecturers should device means of reducing social loafing through individualised formative assessment techniques, reducing number of students per group to maximum of three.

Keywords: Social Loafing, Summative Assessment, Group Assignment, Formative Assessment

Introduction

One of the most cardinal principles in teaching-learning process is the assessment of learning outcomes. Curriculum planners, teachers, parents, school administrators and

in-fact every stakeholder in education attach utmost importance to assessment procedures and most importantly to the outcome assessment measures. Yet, with its all important outlook, assessment techniques and learning outcome have become a source of unending controversy as they remain parts of the most challenging aspects of the teaching profession. In Nigeria, the mass quest for paper qualification, the enormous overflow of students into various levels of education, the inadequate numbers of qualified teaching personnel and facilities have led to the geometric multiplication of student-teacher ratio at all levels. In addition to the importance attached to formative assessment as can be noted in the 40% mandatory continuous assessment given in every semester for each course as a prerequisite of summative assessment otherwise here operationally defined as semester examinations in Nigerian universities.

The teaching-learning process that is gradually tilting from individualistic behaviorism approach to the principles of cognitive apprenticeship, communal practice and cooperative learning as expounded by constructivist ideas also gives room for lecturers especially to device easier ways for formative assessments of their students. Some of these new devices include but are not limited to group assignments and group projects. Furthermore, as put forward by Aggarwal and O'Brien (2008)

> *"group assignments can create more opportunities for critical thinking and peer feedback response, as well as foster student motivation and sense of achievement. Further, group coursework can boost students' self-esteem and help them develop interpersonal, presentation, leadership, communication and time management skills. Group assessments can also be beneficial to the educator, as they can be more comprehensive than individual assessments, reduce marking volume and enable enhanced interaction with students"p.228*

As many scholars continue to pinpoint the drawbacks of behaviorist and cognitivist approaches to learning, they maintain that behaviorist conjecture allows little opportunities for the students to work in teams and to be actively occupied by asking questions and that the theory is deficient in engagement and motivation of the students. They further insist that heavy reliance on inference and cognitive processes that we cannot directly observe amidst students because of the highly complicated nature of human and ranging individual differences amongst students, as far as pedagogical atmosphere is concern remain another major drawback of cognitive approach to learning. Teachers as realists will always find it intricate to infer reality from contagiously elusive nature of the cognitivists' internal mental processes. These and many more criticisms of cognitivism and behaviorism led to the emergence of social constuctivism as a major approach to teaching, learning and assessment. Liu and Matthews (2005) note that "the constructivist metaphor of cognitive psychology emerged in 1970s and since then, has been a buzzword in school education and teacher

training in the western part of the world". Constructivism has continued to prosper and has now taken over education in the United States of America (Verenikina, 2014).

Over the past two decades, there has been a tremendous expansion of interest in Lev Vygotsky's ideas as capable substitute to existing psycho-educational theories and practices. According to ERIC (Educational Resource Information Center, managed by the US Department of Education, 2012) "there are currently three times as many citations of Vygotskian research as Piagetian research". Social constructivism believes that learning that is considered meaningful crop up when learners are plainly guided on how to use the psychological apparatus of their culture in the range of language and advancement in creativity and problem solving and thereafter or immediately are provided with opportunities to apply these tools in authentic real life situations and scenarios to construct a mutual or communal comprehension of some phenomenon (McInerney & McInerney 2002). This view re-establishes the subjectivity of reality, while knowledge is literally dually constructed by, and shared among, individuals as they "interact with one another and with cultural artifacts, such as pictures, texts, discourse, and gestures". This constructivists' postulations and the damning reality of large undergraduate classes is usually seen in lecturers' resort to group formative assessment techniques whose outcomes are used to augment the summative assessment that is usually presented at the end of each semester. In group assignments (a dominant form of formative assessment) a class is usually divided into groups and each group is given a single assignment for members to partake collectively.

However, long before the dominance of social constructivists approach and even prior to the emergence of rowdy and crowded lecture halls and theaters, in 1913, as put by LaFasto and Larson, (2001)

> *"A French agricultural engineer, Max Ringlemann, recognised the fact that collective group performance required less effort by individuals compared to the sum of their individual efforts. This effect has been termed the Ringlemann Effect. In his experiment, participants pulled on a rope attached to a strain gauge"p.77*

LaFasto and Larson (2001) further states that

> *"Ringlemann noted that two individuals pulling the rope only exerted 93% of their individual efforts, a group of three individuals exerted 85% and group of 8 exerted 49% of their combined individual effort. As more individuals pulled on the rope, each individual exerted himself or herself less. From these observations, Ringlemann determined that individuals perform below their potential when working in a group; below is the graphic representation of the Ringlenann effect".p.78*

The term "Ringlemann Effect" is being gradually replaced by Latane's (1981) social loafing wherein some people may feel lazy and or refuse to fully participate in a group work thereby becoming reliant on other group members. The Ringelmann effect is also fascinating for the reason that it makes available diverse avenues where the new theory of social impact could be broadly examined. Social impact theory as propounded by Bibb Latane (1973) holds that

> *"When a person stands as a target of social forces coming from other persons, the amount of social pressure on the target person should increase as a multiplicative function of the strength, immediacy, and number of these other persons. However, if a person is a member of a group that is the target of social forces from outside the group, the impact of these forces on any given member should diminish in inverse proportion to the strength, immediacy, and number of group members. Impact is divided up among the group members, in much the same way that responsibility for helping seems to be divided among witnesses to an emergency" p.279*

Latane and Darley (1970) further suggests that "just as psychophysical reactions to external stimuli can be described in terms of a power law so also should reactions to social stimuli". Social impact theory is an assumption that applies mathematical equations to forecast the level of collective influence created by specific social circumstances and is governed by 3 rules that can be transformed into mathematical equation. **The law of social force** is a weight that is put on people to vary their manners – if it is successful, that is Social Impact. Social force is produced by affiliation, threat, hilarity, humiliation and other influences. Lanik (2015) further maintain that "social force is made up of Strength (perceived power of the influencing person), Immediacy (recency and closeness of the influence) and Numbers (the higher the pressure group, the more the social force)".

Psychosocial law indicates that the first source of influence has the most dramatic impact on people, but that the second, third, fourth, etc sources generate less and less Social Force. The last law as further propounded by Latane and which is more directly related to social loafing

> *"is the law of divisions* ***of impact that suggests that*** *Social Force gets spread out between all the people it is directed at. If all the Force is directed at a single person, that puts a huge pressure on them to conform or obey. However, if the force is directed at two people, they only experience half as much pressure each. If there are ten of them, they only feel one tenth of the pressure" p. 283*

The scenario above is usually termed as diffusion of responsibility, the higher the number of participants in a group, the lower the individual accountability each member

will exert. Now, Ringlemann Effect or social loafing is use to pinpoint to a lacuna in constructivists' principles of cognitive apprenticeship and general group learning structure as most school teachers that allocate students to group have taken notice of grumbles and grievances on the fact that social loafers, that is, team members who contribute nothing or less to the team receive the same score as those that work hard to produce the assignment. Scholars, either concentrated on work or class associated teams, concur that social loafing is about the lessening of physical, perceptual, or cognitive effort in the company of others, and that loafers anticipate others to be responsible for their laxity even as they receive the same reinforcement (Brooks & Ammons, 2003). In a research conducted by Sedikides and Jackson (1990) on the study of the role of strength within social impact theory using group size ranged from 1 to 6 found that those in bigger teams were less probable to act in accordance with the experimenter's message than those in lesser groups.

Social loafing has been described as an observable fact where people demonstrate a considerable reduction in individual effort when working in groups as compared to when they execute jobs single-handedly, and has been looked upon as a circumstance variable. Even though social loafing that represents the tendency of individuals to exert less effort when they are part of a group may be evident among many university students, a large chunk of lecturers insist in giving group assignments and group projects in the name of cooperative learning and to escape the burden of the very large students per lecturer ratio. Other lecturers do give group work in common understanding of the fact that it can create more opportunities for critical thinking and peer feedback response, as well as foster student motivation and sense of achievement. Shevelson, William, Black and Coffey (2009) maintain that formative and summative assessment do not have to be difficult, yet the definitions have become confusing in the past few years. This is especially true for formative assessment. In a balanced system of evaluation, the duo of summative and formative assessments represent the most important characteristic of data collection. Summative assessments are administered from time to time to establish, at a particular point in time what students know and do not know. Formative assessment of student learning can be *informal* when incidental evidence of achievement is generated in the course of a teacher's day-to-day activities and when the teacher notices that a student has some knowledge or capacity of which she was not previously aware. It can also be *formal* as a result of a deliberate teaching act designed to provide evidence about a student's knowledge or capabilities in a particular area.

Black, Harrison, Lee, Marshall, and Wiliam (2003) further state that *"Formative Assessment is part of the instructional process. When integrated into practice in classrooms, it provides the information needed to adjust teaching and learning while they are happening".* In this regard, formative assessment notifies both teachers and students about learner's grasp of the learnt material at the time and when well-timed modification can be prepared. These adjustments assist in ensuring that students

accomplish prescribed standards upon which learning goals are set within a set time frame. Formative assessment strategies emerge in a multiplicity of blueprints which include assignments, group projects, verbal evaluation and others (Garrison & Ehringhaus 2016). Summative Assessments on the other hand, are periodic in nature, thus, determining at a particular point in time what students know and do not know. As noted earlier, various continuous assessment techniques employed by lecturers are hereby operationalised as formative assessment and because the study is on social loafing, group assignment is the main issue. Summative assessment is however operationalised as semester examinations.

The objectives of this study therefore, are to determine the prevalence of social loafing among undergraduates of School of Continuing Education, Bayero University Kano. Other objectives include determination of differences in summative assessment scores obtained of social loafers and non-social loafers may be as result of social loafing tendencies. Determination of Predictive power of group assignments, individual assignments and tests in relation to summative assessment defined here as semester examination also form a cardinal objective of this study. It is therefore hypothesised as follows:

Hypotheses

1. There is no significant difference in examination results of social loafers and that of non social loafers in Bayero University, Kano.
2. That group assignment(s) do not significantly predict examinations results in Bayero University, Kano.

Methodology

The research follows a survey and expost facto or causal comparative. Arry, Jacobs & Sorensen (2006*) uphold the submission that* ex post facto research is used

> "*to investigate relationships when the researcher cannot randomly assign subjects to different conditions or directly manipulate the independent variable. Ex post facto research begins with subjects who differ on an observed dependent variable and tries to determine the antecedents (cause) of the difference. It can also be conducted when the researcher begins with subjects who differ on an independent variable and tries to determine the consequences of the difference". p. 342*

Social Loafing questionnaire containing 20 likert type responses and two sections of bio-data consisting of students' registration number is developed. The instrument is validated by means of face and convergent validity procedures using an entire class of 93 students in Bayero University's Faculty of Education in a pilot testing, coefficient of association linking test scores and criterion otherwise called validity coefficient (r_{xy}) was found to be 0.77. cronbach alpha which was also calculated to ascertain the internal

consistency of times with the instrument, the alpha was found to be 0.89. However a split half procedure was found to provide a correlation coefficient of 0.81.

Procedure for Data Collection and Analysis

The social loafing questionnaire is administered to randomly select 370 students (197 male, 173 females) to represent a population of 3,412 students in the four departments of School of Continuing Education, Bayero University Kano. After scoring the instruments, student with scores of 55 and above were considered to be social loafers since the questionnaire represents mainly social loafing tendencies. Thereafter, formative assessment and semester examination records of social and those of non-loafers identified are collated from the school examination office. On one side, mean score for each formative assessment procedure for all courses the student offered for the semester is calculated, on the other hand average semester examination marks (raw scores) for all the courses offered is also calculated. Simple percentage is used to determine the prevalence of social loafing, t. test for independent sample is used to determine difference in summative assessment (Semester examinations) results of loafers and non-loafers. The study also used regression analysis to determine the predictive power of formative assessment (group assignment, individual assignment and tests) on summative assessment (semester examinations).

Results and Analysis of Data

Data collected for the study is analysed using simple percentage and inferential statistics to determine the prevalence of social loafing among undergraduates in Bayero University, Kano as depicted in the table below

Table 1. prevalence of social loafing among undergraduates in Bayero University, Kano

Department	Gender	Sample	Social loafers		Percentage	Total
Arts and Humanities	Male	46	18	47	39.13%	53.75%
	Female	46	29	51%	63.04%	
Education	Male	46	28	59	60.86%	
	Female	46	31	64%	67.79%	
Sciences	Male	46	12	29	26.08%	
	Female	46	17	31%	36.95%	
Social Science and Administration	Male	47	33	64	70.21%	
	Female	47	31	68.8%	65.95%	
Total		370	196		52.97%	53.7%

The table above indicates that there is a total of 196 loafers (88 male, 108 female) representing a total of 53.7 % prevalence of social loafing among undergraduates of Bayero University, Kano.

Summary of data

Table 2 Descriptive Statistics

Summative Assessment	Minimum	Maximum	Mean	SD	N
Loafers	19	63	48.0102	15.11833	196
Non-Loafers	44	88	58.9253	15.21788	174

Here the mean score of 196 loafers which stands at 48.01, SD 15.11 is less than that of 174 non-loafers with 58.92 mean average and sd 15.21. This foretells higher examination scores for non-loafers.

Test of Hypotheses

Ho1 there is no significant difference in examination results of social loafers and that of non social loafers in Bayero University, Kano

Table 3 t test for difference in examination results of social loafers and that of non social loafers

Formative Ass	Mean	Df	t	P value	LS
Loafers Non-Loafers	48.01 58.92	368	-6.91	0.00	0.05

In Ho1 it is deduced that t. calculated is -6.91, P. value 0.00 at degree of freedom 362 and level of significance 0.05. p. value is therefore lower than Level of significance 0.05. The null hypothesis is hereby rejected meaning that there is significant difference in measures of summative assessment between undergraduate loafers and non-loafers of Bayero University, Kano.

Ho2: Group assignment does not significantly predict examination results in Bayero University, Kano.

Table 4 Regression analysis R value table

Model	R	R square	Adjusted R
1	.266	.071	.063

From the above table, R-value .266 represents the multiple correlations between the study variables. The R-square value of .071 represents the total variability of the dependent variable as explained by the independent variables. Based on the R-Square value of .071, it follows that 7.1% of the total variability in the summative assessment of students is explained by the variable of social loafing and group assignments.

Table 4 Regression analysis f table of fit

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2779.361	2	926.454	9.121	.000
Residual	36365.095	368	101.578		
Total	39144.456	368			

The analysis of variance (ANOVA) table is employed in computing the fitness of the regression model. As potrayed by the table, the F-statistic value is 9.121 where the P value is 0.000, which signifies that the regression model is statistically significant as such it fits the existing data because the P value (sig.) is at 0.000 which is far less than 0.05 which is the region of rejection.

Table 5 Regression Analysis beta and p. values

Variable	B	SE	β	t	P
Constant	17.225	2.339		7.363	0.000
Group Assignment	-0.153	0.326	-6.91	-0.469	0.640

The regression coefficient table provides for the effect of the independent variables over the dependent variable. The analysis of the coefficient table demonstrates the assumption that where the independent variable is constant, the t-statistic value of t= 7.363 with a P value of .000 which is statistically significant was found. Similarly, result from the table shows that group assignment serves as a predictor of poor semester examinations results of students. At this point, the result is statistically insignificant at t=-.469, p= .0640, p< .05. On the other hand, the unstandardised coefficient measures the extent to which the independent variable predicts the dependent variable. From the table, when all other factors are constant, group assignment is predicted to account for 7.1% of decline in students' academic performance. To further explain the table, we can deduce the fact that the t-test for group assignment equals -0.469, and is not statistically significant, meaning that the regression coefficient for group assignment is not significantly different from zero. The coefficient for group assignment is -.153. This connotes that for a one unit increase in group assignment, one would expect a .1.5 unit decrease in the scores of semester examination results.

Summary of Findings

1. There is 53% social loafing tendencies among undergraduate students in Bayero University, Kano.
2. There is significant difference in summative assessment (Semester examinations) results of loafers and non-loafers.
3. Group assignment predicts decrease performance in semester examination results

Discussions on the findings

Social loafing as a phenomenon and in relation to social impact theory are aspects of social psychology of learning that are sparsely investigated. Paucity of empirical studies on social loafing may be largely due to perceive advantages of group work as popularly expounded by social constructivists. Teachers, especially lecturers, also camouflage behind the advantages and use the option of formative assessment as shortcut to fulfilling the mandatory 40% continuous assessment which is often combined with examination result to determine the student's overall performance at the end of the semester. This study has however found a frightening prevalence of social loafing among the students of Bayero University Kano. Not only is the 53% social loafing incidence very alarming, it also shows that though lecturers may find group assignment an easier formative assessment strategy due to the very large lecturer: students ratio and ever increasing workload, the method will keep on placing students in a downside position if it is continually practised as it is being done. Fortunately however, social loafing depends largely on the number of students in a group. This submission originally noted by Ringlemann and substantiated by Latane (1975), Sedikides and Jackson (1990) is not usually taken care of by teachers as some groups even consists of 10 or more students.

One serious predicament facing students is the finding that social loafers perform far lower in terminal examinations which is usually an individualistic affair where free riders will have no hiding place. As found by LaFasto and Larson (2001) students loaf first when there is insight that their personal efforts is adding no value or is negligible to the general productivity of the group. Second, when they perceive that the overall result will not be duly associated to the worth of the performance. Third, people will loaf when the outcome appears of no value to them. In particular, people will loaf when they perceive that the outlay of realising the result surpass any other benefits of achieving the outcome.

One important finding of this study is the realisation that group assignment, a significant source of social loafing, do have negative impact on examination results. As found in the study, a 15% rate of low performance in semester examination is attributable to group assignment. This and other findings have very critical theoretical and practical implications for teaching learning process; first is the substantiation of the social impact theory in general and the reality of social loafing in particular. The findings also may pioneer researches on social loafing in academic circle where the damning consequences are largely ignored and proffer measures of curtailing social loafing.

Conclusions and Recommendations

Based on the findings of the study, the following conclusions are hereby made.

1. That 53% undergraduates of Bayero University, Kano partake in social loafing
2. That non-social loafers perform better in semester examinations than social loafers.
3. That 15% of low semester examinations grades are attributable to group assignment, meaning that group assignment(s) significantly predict low performance in semester examinations.

Consequent upon the research process, findings and conclusions, following recommendations are considered essential:

a. Lecturers should devise means of reducing social loafing including through individualised formative assessment techniques, reducing number of students per group to maximum of three.

b. Students should be adequately informed and guided on the damming consequences of the free rider effect and sucker effect on their academic and career prospects.

c. Students should not rely heavily on group assignment to predict outcome of their examinations. To benefit from the combined score, students are expected to work together, address main issues concerning the assignment and present a well-researched paper.

References

Aggarwal, P., & O'Brien, C. (2008). Social loafing on group projects: Structural antecedents and effect on student satisfaction. *Journal of Marketing Education, 30*(3), 225-264.

Arry, D. Jacobs, L.C. & Sorensen, C. (2006) *Introduction to Research in Education* 8th edi. Wadsworth, Cengage Learning. P 231

Black, P., Harrison, C., Lee, C., Marshall, B., & Wiliam, D. (2003) Assessment for Learning: Putting it into practice. Berkshire, England: Open University Press

Brooks, C. M., & Ammons, J. L. (2003). Free riding in group projects and the effects of timing, frequency, and specificity of criteria in peer assessment. *Journal of Education for Business, 78* (5): 268 –293

Garrison, C. & Ehringous, M. (2016) *Formative and Summative Assessments in the Classroom*. www.amle.org/tabld/articleID

http://www.psychologywizard.net/social-impact-theory-ao1-ao2-ao3.html

https://psychology.iresearchnet.com/social-psychology/group/social-loafing/

Kravitz, D. A., & Martin, B. (1986). Ringelmann rediscovered: The original article. *Journal of Personality and Social* Psychology, *50* (5), 936-941.

LaFasto, F. & Larson C. (2001). When teams work best. Thousand Oaks, CA: Sage Publications.

Lanik, M. (April 2005). *Interpersonal Compatibility and Social Loafing*. Soundings, a Publication of the University Honors Program, HONS 4960, 49-53

Latane, B., & Darley, J. M. (1970). *The unresponsive bystander: Why doesn't he help*? New York: Appleton-Century-Crofts

Latané, B., (1986). *Responsibility and effort in organizations*. In P. Goodman (Ed.), Groups and organizations pp. 277-303. San Francisco: Jossey-Bass.

Latane, B., Williams, K. & Harkins, S. (1979) The causes and consequences of social loafing. *Journal of Personality and Social Psychology 37*(6), 822-832.

Latane, B., Williams, K., & Harkins, S. (1979). Many Hands Make Light The Work: The Causes and Consequences of Social Loafing. *Journal of Personal Sociology and Psychology*, *Vol. (37),* 822-832.

Liu, C.H. & Matthews, R. (2005). Vygotsky's philosophy: Constructivism and its criticisms examined . *International Education Journal*, *6* (3), 386-399.

McInerney, D. M. and McInerney, V. (2002). *Educational Psychology: Constructing Learning* (3rd ed.). London, Prentice Hall.

Sedikides, C.; Jackson, J.M. (1990). "Social impact theory: a field test of source strength, source immediacy, and number of targets". Basic and Applied Social Psychology. ***11*** *(3): 273–281. doi:10.1207/s15324834basp1103_*

Shavelson, R.J., Black.P.J., Wiliam, D. & Coffey, J. (2009) On linking formative and summative functions on the design of large scale assessment system. *Educational Evaluation and Policy Analysis 12* (2) 124-138

Verenikina, I (2009). Understanding Scaffolding and the ZPD in Educational Research, *Journal of Excellence in College Teaching. Vol 8 (2)* pp 183-191