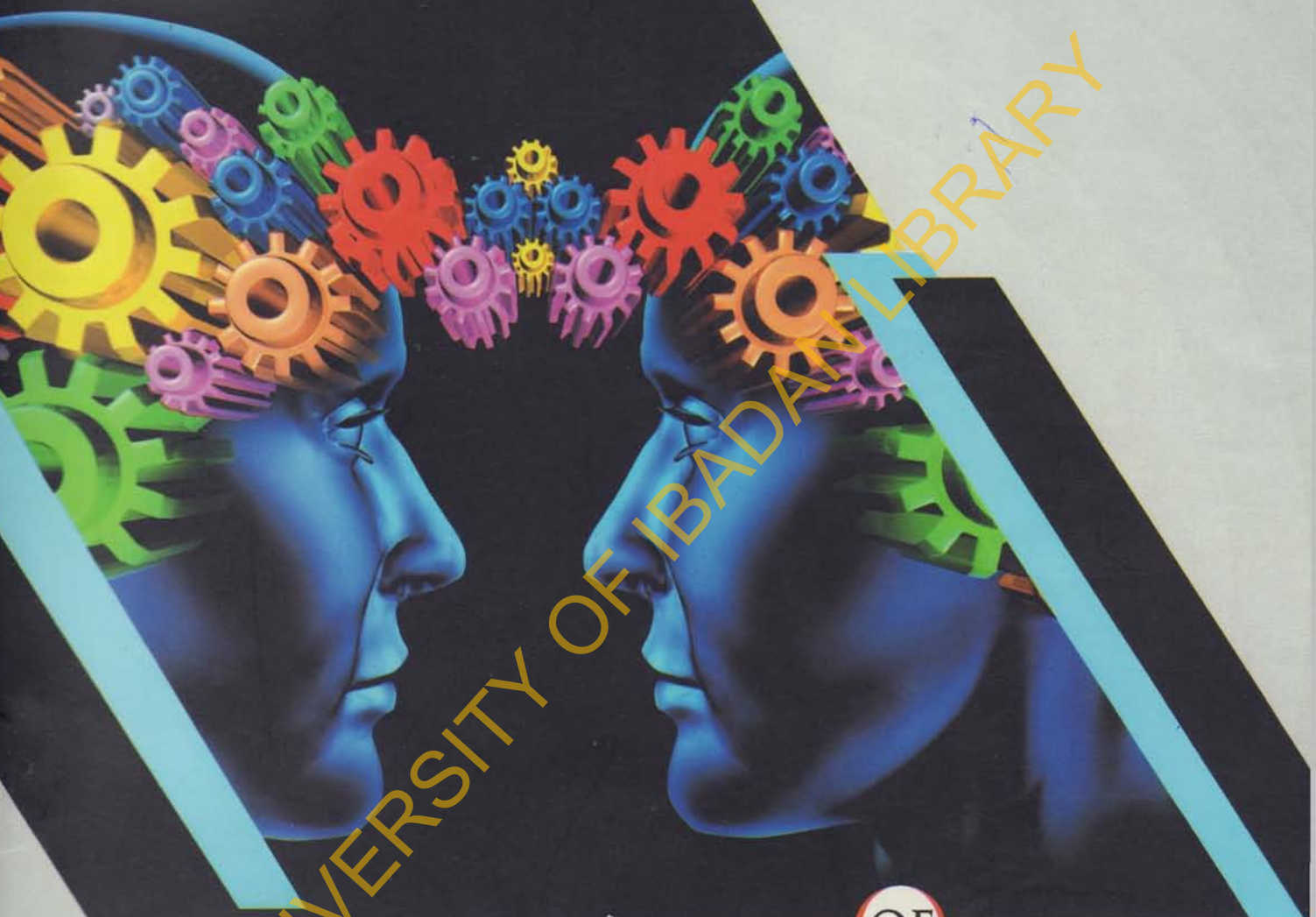


30

# JOURNAL



UNIVERSITY OF IBADAN LIBRARY

OF

**COUNSELLING  
AND  
APPLIED PSYCHOLOGY  
(JOCAP)**

VOL.4, NO.1

INSTRUCTIONS TO AUTHORS

The manuscript should be prepared in double column format...  
The title of the paper should be brief and to the point...  
The abstract should not be more than 100 words...  
The journal is devoted to the publication of research...  
The journal is published by the Department of Psychology...  
The journal is published by the Department of Psychology...

# JOURNAL OF COUNSELLING AND APPLIED PSYCHOLOGY [JOCAP]

VOL. 4. NO. 1

UNIVERSITY OF IBADAN LIBRARY



## CONTENTS

Location and Educational Background as Correlates of Mental Health of Adolescent Parents in Southwest Nigeria <b>Dr Ayodele C J, and Dr (Mrs) Osakinle, E.O</b>	1
Attitude and Practice of Hand Hygiene among Undergraduates of Ekiti State University, Ado-Ekiti <b>Adebule S. O.</b>	6
Academic Mass Failure in Mathematics in the Senior Secondary School Examination <b>Abeng Henshaw E.</b>	14
Effect of a School Based Nutrition Education Intervention on Nutrition Related Outcomes Among Adolescents in Ibadan Nigeria <b>Ogunsile Seyi E<sup>1*</sup>. and Ogundele Benjamin O<sup>2</sup>.</b>	19
Influence of Calculator Usage on Students' Reasoning in Mathematics <b><sup>1</sup>Oginni I.O. (Ph.D.) &amp; <sup>2</sup>Ojo Oluwatoyin Faith</b>	25
Assessment of Heavy Metal Contamination of Road Side Soils In F.C.T Abuja, Nigeria <b>Dorcas Emmanuel Shehu and Prof. Rebecca W. Ndana</b>	32
Influence of Gender, Age and Location on Drug Abuse among Senior Secondary School Students in Ekiti State, Nigeria <b>Osalusi F.M. (Ph.D) and Ojomo, G.N.</b>	36
Determining the Suitability of Avocado Fruit as an Ingredient in Pastry Products <b>Ekpenyong, Fidela Nkoyo</b>	43
Using of Emotional Coaching Techniques in the Management of University Undergraduates with Academic Stress <b>Dr Awoyemi A.E and Akinyemi Atinuke Olusola (Ph.D)</b>	50
Chaotic Models for Human Growth and Development <b>T. M. Gwary and Owolabi, K.I</b>	55
Family Types' Influence on the Emotional Disposition of in-School Adolescents in Edo State <b>Andrew A. Adubale, Ph.D and Azuka N.G. Alutu, Ph.D</b>	60
Effective Communication Process and Marital Conflict Resolution among Couples in Lagos Metropolis, Nigeria <b>Bivese-Djebah Philomena Anwuli PhD and Okeleke Priscilla Kwuteli (M.Ed)</b>	68
Corruption and Value-Re-Orientation in Nigeria: Role of Guidance Counselling. <b>Otutu, T. Iand Oyinloye, O. A.</b>	74
Parental Contribution and Secondary School Effectiveness in Oye Local Government area of Ekiti State <b>Samuel A. Ibitoye (Ph.D), Ajibade Olufemi S. and Jide Ifeoluwa O.</b>	79



- Levels of Awareness and Use of Birth Control Devices in Reproductive Health Practices among Married Women in Northcentral Nigeria  
**Ogunsanmi, J. O. (Ph. D)<sup>1</sup>; Olowookere, O.I. (Ph. D)<sup>2</sup> and Ogunsanmi, O.O., (MPH)<sup>3</sup>** 86
- Counselling, Women Sexual and Gender Based Violence  
**\*Olatunbosun, S.O<sup>1</sup> and Prof. Tenibiaje, D.J<sup>2</sup>** 93
- Psychological Sense of school Membership and Coping Ability as Predictors of Multidimensional Life Satisfaction Among School Children  
**Dr (Mrs) Omoniyi, Mary Banke Iyabo** 101
- Development and Validation of Academic Motivation Scale among Secondary School Students  
**Ogundokun, M.O. Ph.D and Odofin Olaide Grace** 108
- Effectiveness of Human Sexuality Education and Assertiveness Training on Minors assertiveness in Sexually Threatening Situations in Edo State, Nigeria  
**Prof. Ubangha, Bassey M. Dr. Mrs. Makinde, Bola O. Ogedengbe and Oshiomah R.** 119
- Comparative Effectiveness of Cognitive Restructuring, Negotiation Skills and Contingency Management in Resolving Marital Conflict among Couples in Lagos State, Nigeria  
**Sotonade, O.A.T.; Edun, Taiwo and Adetayo, Stephen** 125
- Fertility Preference and Risky Sexual Behaviour among Currently Married Women in Ondo State, Nigeria: A Quantitative and Qualitative Analysis  
**Imo, C. Kingsley (PhD), Olusanya, O. Oyewole (M.Phil.) & Oluwatuase, I. Esther** 132
- Counselling Implication of the Reproductive Health Challenges of Adolescents with Special Needs in Two States in South-West Nigeria  
**Samuel Olufemi Adeniyi and Olaotan Oladele Kuku** 141
- Explicit Instructional Strategy and Students' Achievement in Reading Comprehension Among Secondary School Students in Ekiti State  
**Awokunle Ibronke Adedivura and Ofodu Graceful Onovughe (PhD)** 148
- Personality Traits and Social Variables as Predictors of Criminal Behaviour of Nigerian Inmates  
**Prof. Dele Joseph Tenibiaje and Mr. Mokolapo Oluwatosin Tenibiaje** 153
- Undergraduate Students' Feedback on Examination Conducted in Ekiti State University, Ado Ekiti, Nigeria  
**Ayodele, Clement Sunday (Ph D)** 161
- Vocational Aspiration of Secondary School Students in Ogun State, Nigeria: Application of Donald Super's and Eli Ginzberg's Theories  
**Prof (Mrs.) A.M Olusakin, Dr. C.E. Okoli and EdakUnoh, Efretuei** 166
- Incidences of Depression, Suicide and Homicide in Nigeria  
**Falana Bernard Akinlabi (Ph.D), Fashina Bosede O. (Ph.D) and Ayodele Christian Junior (Ph.D).** 173
- Effects of Cooperative, Competitive and Kolawole's Problem Solving (KPS) Teaching Methods on Academic Performance in Mathematics among Secondary School Students in Ondo State, Nigeria  
**Prof. E. B. Kolawole and Daramola Kayode Rapheal** 178



School Counselling Service and Peer Influence as Determinants of Academic Achievement in Basic Science among Junior Secondary School Students <b>Oniya, Toluwa and Faluyi, Moses Aderemi</b>	185
Age of Marriage and Sexual Violence within Marriage Implication for Counselling <b>Grace Funmiayo Olusegun (Ph.D)</b>	190
Smoking and Depression among In-School Adolescents in Southwest Nigeria: Counselling Implications <b>A. O. S. Adegoroye (Ph.D) and F. O. Ibimiluyi (Ph.D)</b>	195
Quality Assurance in Teacher Education in Nigeria: Issues and the Way Forward <b>Okojie, Monday Ujiakhien</b>	203
The Psycho-Social Adjustment of Nigerian Students with Congenital and Acquired Disability and those without Disabilities <b>Prof Olofintoye Thomas Tunde</b>	210
The Influence of Social Support on Academic Achievement of in-School Adolescents in Ekiti State <b>Iretor-Oscar, Oluwaseun Bamidele<sup>1</sup>&amp; Seyi-Oderinde, Damilola Ruth<sup>2</sup></b>	217



## DEVELOPMENT AND VALIDATION OF ACADEMIC MOTIVATION SCALE AMONG SECONDARY SCHOOL STUDENTS

Ogundokun, M.O. Ph.D and Odofin Olaide Grace

Department of Guidance and Counselling, University of Ibadan, Ibadan

e-mail: [femtopng@gmail.com](mailto:femtopng@gmail.com)

### Abstract

The aim of this instrumental study is to develop, validate and measure the psychometric properties of Academic Motivation Scale (AMS) among Secondary School Students in Ibadan metropolis. The study adopted a survey research design. The participants in the study were 432 (228 male; and 204 female) Secondary School Students randomly selected from public secondary schools in Ibadan metropolis. Their age ranged between 12 and 18 years and with mean age of 14.3 years. Confirmatory Factor Analysis (CFA), Pearson's Product Moment Correlation (PPMC) and Principal Component Analysis (PCA) were used to analysis the data. In purification process, items with low total-item correlation, using 0.3 as a baseline, were discarded. The three-factor CFA loadings were all strong and above .40. For the Model fitness of the Scale to theoretical construct, the Chi-Square Goodness of Fit (GOF) obtained was significant ( $\chi^2$  df = (32) = 227.219;  $p < .001$ ). Other fitness measure (i.e. RMSEA = <0.08; CFI = 0.90; and Coefficient of Determination (CD) for the residual = 0.99 (99%) proved the fitness of the developed scale to the theoretical construct. As expected, the sub-scales of AMS significantly correlated (Intrinsic Motivation and Extrinsic Motivation;  $r = .370$   $p < .001$ ) however, Amotivation and Intrinsic Motivation ( $r = -.094$   $p > .05$ ); Amotivation and Extrinsic Motivation ( $r = .022$   $p > .05$ ) were not significant. The study proved the construct validity of the scale. The internal consistencies of the sub-scales were obtained as: Intrinsic (5 items),  $\alpha = .83$ ; Extrinsic (5 items)  $\alpha = .72$ ; Amotivation, (3 items)  $\alpha = .70$ ; Overall Academic Motivation Scale, (13 items)  $\alpha = .74$ . The study has implication for students, motivational mechanism and directions are understood to reduce the number of academic failure and drop-out. It was recommended that Counselling Psychologists should look into the motivational tendencies of helping students in diagnosing problematic areas of those that are not motivated towards academics.

**Keywords:** Academic motivation, Intrinsic motivation, Extrinsic motivation, Amotivation

### Introduction

Motivation has been described as the act or process of motivating; a motivating force, stimulus, or influence; incentive; drive; something (such as a need or desire) that causes a person or student to act and the expenditure of effort to accomplish results (Barranek, 1996). Motivation has been regarded as probably the most important factor that educators can target in order to improve learning. It plays a major role in students' achievement (Kusurkar, Ten Cate, Vos, Westers & Croiset, 2013). It reflects in students' choices of learning tasks, in the time and effort devoted to them, in their persistence on learning tasks, in their coping with the obstacles they encounter in the learning process. Previous researches (Bandalos, Geske & Finney 2005; Chemers, Hu & Garcia, 2001; Senko & Harackiewicz, 2005) reported a strong association between students' achievement

goals, their interest in courses, their success expectancies and their final course grade.

Motivation is a multidimensional construct that any student engaging in learning situation has to answer the three fundamental questions: 'Can I do this activity?', 'Do I want to do this activity and why?', and 'What do I need to do to succeed?' Constructs relating to the question "Can I do this activity?" are the expectation students has according to their capabilities to perform a certain activity in different areas. Moreover, student motivation touches every aspect of school life; these ranging from attendance, to academic performance, and to extra-curricular activities (Barranek, 1996). This put the task of promoting students' motivation at the feet of teachers, who has to oversee a child around the three domains of development. One possible way at achieving this task sees teachers bombarding their students with the promise of rewards; stickers for good behaviour, treats



for completing assignments, lunches for turning in homework; all in a bid to fostering good grade among them (Barranek, 1996).

There are arguably two types of motivation: Intrinsic and Extrinsic. Intrinsically motivated students engage in an activity because they find working on the task enjoyable. Many studies showed that intrinsic motivation was positively related to students' learning achievement and their self-perception of competencies (Ames, 1992, Blumenfeld & Pokay, 1990, Gotfried 1990, Hofer, Yu & Pintrich, 1998). On the other hand, students can also be extrinsically motivated to engage in an activity when they believe that working on the task will result in desirable outcomes (e.g. reward, good grade, parents' and teachers' approval, avoidance of punishment). Intrinsic motivation usually results in more cognitive engagement than extrinsic motivation (Ryan & Deci, 2000).

Other measuring instruments have been developed to measure internal motivation but have failed to gain the traction of the Achievement Motivation Scale (AMS). One of such instruments is developed by Kusrkar, Ten Cate, Vos, Westers & Croiset (2013). Kusrkar, Ten Cate, Vos, Westers & Croiset (2013) studied effect of quality of motivation on performance, and was designed as an extension of Ryan and Deci, (2000) motivational construct on three variables of motivation: Autonomous Motivation (AM), Controlled Motivation (CM) and Relative Autonomous Motivation (RAM). The scale was built on circulating model comprising Good Study Strategy, Relative Autonomous, Motivation, More study effort and Academic performance (GPA). Validating the Academic Motivation Scale, indicate that Relative Autonomous Motivation positively affects academic performance through deep strategy towards study and higher study effort. However, the model seems valid for only medical education subgroups such as males, females, students selected by qualitative and weighted lottery selection procedures (Kusrkar, Ten Cate, Vos, Westers & Croiset, 2013). Other scales such as the Mastery, Performance, and Alienation Goal Scale (Archer, 1994) have also failed to achieve the acceptance and validation the Academic Motivation Scale has enjoyed in a variety of studies (Hayamizu, 1997; Grouzet, Otis, & Pelletier, 2006; Spittle, Jackson, & Casey, 2008). However, with the development of these measuring instruments, the domain of

motivation research gained credibility as it now had accurate tools in the assessment of motivation in individuals.

### Meaning and Definition of Academic Motivation

Academic motivation, according to Pintrich and Zusho (2002), refers to internal processes that instigate and sustain activities aimed at achieving specific academic goals. According to Ryan and Deci (2000), to be motivated means to be moved to do something. A person who feels no impetus or inspiration to act is thus characterized as unmotivated, whereas someone who is energized or activated toward an end is considered motivated. In the classroom setting, student motivation refers to the degree to which a student puts effort into and focus on learning in order to achieve successful outcomes. Motivation and engagement are very important for sound student learning. Sternberg (2005) believes that motivation is very important for school success, in its absence; the student never may make an effort to learn. Students not only have different quantities, but also different qualities of motivation that can vary from time to time depending on the learning and teaching context (Ryan & Deci, 2000; Schlechty, 2001).

Researchers have used diverse motivational approaches, such as attribution theory (Weiner, 1979), expectancy-value theory (Eccles, 2005; Eccles & Wigfield, 2002; Wigfield & Eccles, 1992, 2000), achievement goal theory (Maehr & Zusho, 2009), and self-efficacy theory (Schunk & Pajares, 2009) to examine the relationship between academic motivation and academic achievement, one perspective that appears particularly promising and pertinent for the study of the association between academic motivation and academic achievement is Deci and Ryan's (1985, 1991, 2000) motivational approach of Self-Determination Theory (SDT). Indeed, this theoretical perspective on motivation has generated a considerable amount of research in the field of education, and has been used extensively to better understand educational outcomes (Niemi & Ryan, 2009; Ryan & Deci, 2009; Ryan & Weinstein, 2009).

### Dimensions of Motivation

Basically, there are three dimensions or extremes of motivation as expostulated by Ryan and Deci (1970; 1985; 2000). These three dimensions: Intrinsic,



Extrinsic and Amotivation, form the basis for different categorisations of students' motivation studies among scholars.

### **Intrinsic Motivation**

Intrinsic motivation can be defined as an individual's need to feel competency and pride in something (Kingston, Horrocks & Hanton, 2006). Intrinsic motivation inspires participation without external incentives and acts as a driver to participate in sport as a result of beliefs and the value that is found in doing the activity (Tosi, Rizzo & Carro 1990). Independence and competence are enforced by intrinsic motivation. Intrinsic motivation consists of three dimensions, namely, motivation to know, motivation to accomplish and motivation to experience stimulation (Weinberg & Gould, 2003 cited in Wilson, 2006). Motivation to know is the fulfilment and pleasure experienced in learning and attempting to understand new concepts within sport participation (Pelletier et al., 1995; Weinberg & Gould, 2003 cited in Wilson, 2006). Motivation to accomplish can be defined as: engaging in an activity for the pleasure and satisfaction experienced when one attempts to reach personal objectives (Vallerand & Losier, 1999 cited in Alexandris, Tsorbatzoudis & Grouios 2002). Finally, intrinsic motivation to experience stimulation represents involvement with an activity for the experience of fun, excitement, and positive sensations (Vallerand & Bissonnette, 1992).

### **Extrinsic Motivation**

Extrinsic motivation pertains to activity that is done in order to attain some separable outcome (Ryan & Deci, 2000). Extrinsic motivation thus contrasts with intrinsic motivation, which refers to doing an activity simply for the enjoyment of the activity itself, rather than its instrumental value. However, unlike some perspectives that view extrinsically motivated behaviour as invariably non-autonomous, Self Determination Theory proposes that extrinsic motivation can vary greatly in the degree to which it is autonomous. For example, a student who does his homework only because he fears parental sanctions for not doing it is extrinsically motivated because he is doing the work in order to attain the separable outcome of avoiding sanctions. Similarly, a student who does the work because she personally believes it is valuable for her chosen career is also extrinsically motivated because she too is doing it for its instrumental value rather than because she finds it

interesting. Both examples involve instrumentalities, yet the latter case entails personal endorsement and a feeling of choice, whereas the former involves mere compliance with an external control. Both represent intentional behaviour, but the two types of extrinsic motivation vary in their relative autonomy.

### **Amotivation**

This dimension refers to the absence of a contingency between one's actions and outcomes. Amotivated individuals do not seem to have specific purposes and goals and they don't seem to approach ends in a systematic fashion. Amotivated individuals simply do not demonstrate the intent to engage in an activity. Amotivation has been related to learned helplessness, where individuals withdraw effort because of perceptions of incompetence and loss of control. The involvement in an activity is not a result of their will (Deci & Ryan 1985; Vallerand & Bissonnette, 1992; Vallerand et al., 1992; Frederick & Ryan 1995).

### **Relationship between Intrinsic and Extrinsic Motivation**

A considerable amount of literature within social psychology show that extrinsic and intrinsic motivation are not merely additives, but that the two types of motivation can interact. In fact, much evidence illustrate that extrinsic rewards can have substantial negative effects on intrinsic motivation (Tang & Hall, 1995; Deci, Ryan & Koestner, 1999; Kohn, 1999; Cameron & Pierce, 2002).

According to Tremblay, (1998), intrinsic motivation is often contrasted with extrinsic motivation. Intrinsic motivation is a as task participation for its own reward, whereas extrinsic motivation is a task participation for a reward that is external to the task. It was stated earlier that the expectancy-value framework is the basis of many current models and constructs of motivation. Although the expectancy-value and intrinsic motivation perspectives focus on different constructs, one could argue that there is an important commonality between intrinsic motivation and the valence component of the expectancy-value perspective. Valence refers to the value that is ascribed to an object (Tremblay, 1998). Both perspectives incorporate the concept of incentive. In order to determine whether motivation is intrinsic or extrinsic, we could consider the nature of the incentives and rewards.



### Self-Determination Theory (SDT)

One of the leading human motivation theories in the psychology literature is self-determination theory (SDT) which is widely tested and applied in various fields such as education, sports, parenting, health and well-being (Deci & Ryan, 2008). This theory asserts that to understand why people participate in certain activities or behave in certain ways, the different types of motivation need to be distinguished as they would lead to varied outcomes (Ballmann & Mueller, 2008). The most central distinction in SDT is between autonomous motivation and controlled motivation.

Autonomous motivation is based on self-regulated orientation which comprises intrinsic motivation and the type of extrinsic motivation in which people have identified with an activity's value and integrated into the sense of self (i.e. identified regulation). For instance, individual can engage in higher education study that is accompanied by interest and excitement in learning new things, thrive towards accomplishments and/or because the importance of higher education pursuit is internalized within the individual. Controlled motivation, on the other hand consists of extrinsic motivation in the forms of external regulation where one's behaviour is determined by external contingencies of reward and punishment and interjected regulation which action is based on approval motive, avoidance of shame or contingent self-esteem (Deci & Ryan, 2008).

### Objectives of the Study

The major purpose of the study is to carry out a development and validation of Academic Motivation Scale for secondary school students in Ibadan metropolis.

Specifically, the study is designed to achieve the following objectives;

1. To assess the relationships between observed variables and their underlying latent constructs using Confirmatory Factor Analysis (CFA)
2. To establish the goodness of fit indicators of proposed models for Academic Motivation Scale
3. To examine internal relationships among the Academic Motivation Scale subscales support (AMOT = Amotivation, IM = Intrinsic Motivation, and EM = Extrinsic Motivation)
4. To carry out the scale reliability test of the subscales of the major construct (Academic Motivation Scale)

### Method and Materials

This study adopted an ex-post facto research design. Since the variables under investigation have already occurred or being present in the participants prior to the study; the main thrust of the study is to develop and validate Academic Motivation Scale (AMS) for secondary school students. The population for this study comprised of all secondary school students in Ibadan, Oyo state Nigeria. The participants were 432 students randomly selected from four Secondary Schools purposefully selected within Ibadan North Local Government, Oyo State. 228 (52.8%) were male and 204 (48.2%) were female. Their age ranged between 12 and 18 years; and mean age of 14.3 years.

Demographic information was collected from the participants regarding their age, gender, name of institution and class. The two main instruments used in the study were self-developed academic motivation scale (AMS) and an adopted Academic Motivation Inventory by Jones and Skaggs (2012). The definitive version of the Academic Motivation Scale (AMS) consists of 16 items which measures the academic motivation regarding Intrinsic Motivation (7 items), Amotivation (4 items) and Extrinsic Motivation (5 items). It has yet to be established whether or not it also offers a measure (second-order factor) of general motivation or academic domain of motivation. The scale is a likert scale with five response options ranging from Strongly Disagree to Strongly Agree. Each of the dimensions is understood as follows:

*Intrinsic Motivation (IM):* how each person sees motivating forces inspires participation without external incentives as a result beliefs and value that is found in academic activities. The reliability (Cronbach's alpha) for the Intrinsic Motivation (IM) was obtained as 0.72.

*Amotivation Scale (AS):* how each person sees the extent to which each person can no longer be motivated in their academic activities. The reliability (Cronbach's alpha) for the Amotivation (AS) was obtained as 0.70.

*Extrinsic Motivation (EM):* how each person sees the extent to which the external factors could determine motivation. It has a reliability of coefficient of .73 using Cronbach's alpha method.

### Procedure

The copies of the questionnaire were administered to the participants in their various schools, within the



Ibadan metropolis. The participants were briefed on their needs to provide correct responses especially as they relate to them. The principals and/or vice principals (administration) were consulted and their permission were sought before the administration. The data collection was carried out within one week during which 500 copies of the questionnaire were administered. However, only four hundred and thirty two (432) questionnaires were returned in good state; and hence subjected to analysis.

## Results

**Table 1:** Means, Standard Deviations and Total Inter-Item correlations for each of the item on Academic Achievement Motivation Scale

	Mean	Std. Dev.	Item-Total Correlation
<b>Intrinsic Motivation</b>			
If I'm faced with a seeming difficult subject, I go on with the belief that I will be successful	3.63	1.12	.72
I'm being guided by inner conviction that I can do well	3.10	1.17	.76
I always think i will pass before i can think i will fail	3.36	1.27	.72
I learn on my own, I don't care how my friend perform	3.34	1.34	.80
In any subject class, I want to study the difficult text for me to be creative	3.49	1.19	.70
Challenging lesson/subject will stimulate my interest to learn better	3.53	1.22	.71
I don't care about difficult level of a subject; I just want to earn the best grade.	3.51	1.32	.69
<b>Amotivation</b>			
So far I passed, am satisfied with any score	2.40	1.21	.49
I don't involve in reading unless am directed to do so	2.40	1.18	.55
I don't need to learn everything, the little I have learnt can be enough	2.50	1.36	.54
So far I get promoted; the scores in my school subject do not really matter.	2.37	1.26	.43
<b>Extrinsic Motivation</b>			
I don't associate with difficult teachers especially during exam	2.95	1.35	.50
I always feel I need more ability to do more in my school subjects	3.28	1.94	.40
I always want to be praised whenever I do well in the exam	2.79	1.49	.60
I like studying among friends	2.78	1.44	.54
After every good score in exam, the number of my friends keep on increasing	2.70	1.63	.48

Thirteen (13) items are positively stated while five (5) items negatively stated. The mean of the items are within the range of 2.37 and 3.63. The total inter-item correlation is also adjudged better. It shows a range

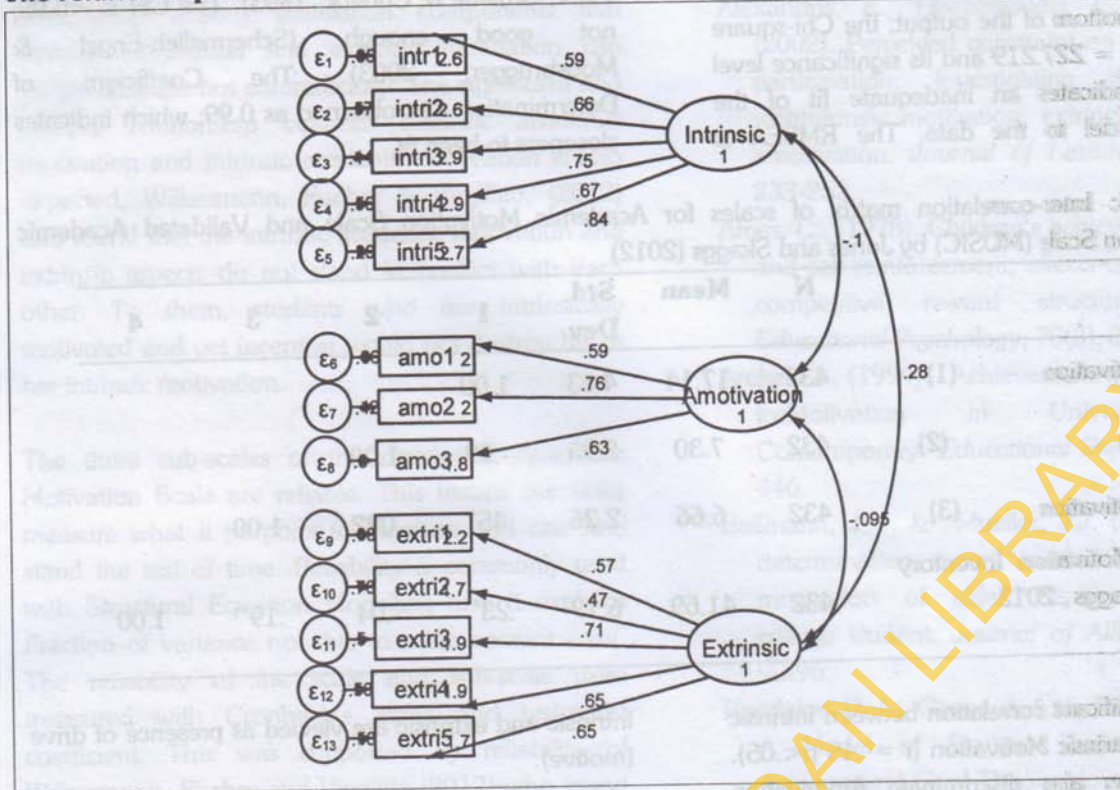
## Data Analysis

The collected data were analysed using Confirmatory Factor Analysis (CFA), to examine fitness of the data of academic motivation to the theoretical model, Pearson's Product Moment Correlation and Principal Component Analysis (PCA) was used to obtain inter-correlations of factors for cross-validation with the existing scale on academic motivation scale.

not less than 0.3 and not above 0.8. Items less than 0.3 were removed. Only 16 items above were retained. The 16 items were subjected to Confirmatory Factor Analysis.



**The relationship between observed variables and their underlying latent constructs of AMS**



Five variables of intrinsic (academic) motivation showed strong correlation and prediction to the latent variable. The five items (variables) have their correlations with the latent variable ranging from .59 and .84. Three variables of Amotivation (academic) scale also showed strong and direct correlation to the latent variable. They (variables) have their correlation with the latent variable ranging from .59 and .76. Lastly, five variables of extrinsic (academic) motivation showed strong correlation and prediction

to the latent variable. All the items (variables) have their correlation with the latent variable ranging from .47 and .71. Furthermore, the relationship between intrinsic Motivation and Amotivation showed a negatively perfect correlation; while Extrinsic Motivation and Amotivation also showed negatively high relationship between them. There was positive relationship between Intrinsic and Extrinsic Motivation.

**Goodness-of-fit Test**

**Table 2: Goodness-of-fit Test**

Fit statistic	Value
<b>Likelihood ratio</b>	
Chi-square (model vs. saturated)	227.219
p > chi2	0.000
<b>Population error</b>	
Root mean squared error of approximation (RMSEA)	<0.08
90% CI, lower bound	0.068
upper bound	0.090
<b>Baseline comparison</b>	
CFI (Comparative fit index)	0.90
TLI (Tucker-Lewis index)	0.87
<b>Size of residual</b>	
Coefficient of determination (CD)	0.99



Chi-square goodness of fit statistics tests the null hypothesis. A test for "model versus saturated" is reported at the bottom of the output; the Chi-square statistic is  $df(32) = 227.219$  and its significance level is 0.01. This indicates an inadequate fit of the confirmatory model to the data. The RMSEA is

$<0.08$ , which indicates a fit close to good (Steiger, 1989; Browne & Cudeck, 1993). The CFI is  $<0.95$ ; not good enough (Schermele-Engel & Moosbrugger, 2003). The Coefficient of Determination was obtained as 0.99; which indicates closeness to been fit.

**Table 3:** Inter-correlation matrix of scales for Academic Motivation Scale and Validated Academic Motivation Scale (MUSIC) by Jones and Skaggs (2012)

Scales		N	Mean	Std. Dev.	1	2	3	4
Intrinsic Motivation	(1)	432	17.14	4.83	1.00			
Amotivation	(2)	432	7.30	2.95	-.09	1.00		
Extrinsic Motivation	(3)	432	6.66	2.26	.45**	.022	1.00	
Academic Motivation Inventory (Jones & Skaggs, 2012)	(4)	432	41.69	6.19	.23**	-.04	.19**	1.00

There exists a significant correlation between intrinsic motivation and Extrinsic Motivation ( $r = .45$ ,  $p < .05$ ). Intrinsic Motivation also discriminates Amotivation Scale ( $r = -.09$ ;  $p > .05$ ). Also, significant relationship of Intrinsic Motivation and Extrinsic Motivation Scale with Academic Achievement Motivation Scale was revealed ( $r = .23$ ;  $p < .05$ ) and ( $r = .19$ ;  $p < .05$ ). This shows that the scale satisfies construct validity.

### Discussion

The development of instrument was anchored on the theoretical postulation of Ryan and Deci's Self-Determination Theory (1970). Intrinsic and extrinsic motivations are elements of Self-Determination Theory (SDT). The confirmatory factor analysis supported the three structure of academic motivation model. The three causal attribution latent variables which were proposed based on a subset of Motivation theory are: Intrinsic Motivation, Extrinsic Motivation and Amotivation. The relationships among the latent variables captured the expectation for the model. The finding found supports of Tremblay (1998); Ryan and Deci (2002); Wormington, Corpus and Anderson (2011); Spence (2014). There exists weak significant relationship between intrinsic and extrinsic motivation. Yet, either motivation serves as a distinct extreme measure of a behaviour. The inverse relationship between intrinsic motivation and amotivation as well as extrinsic motivation and amotivation are justified. Although, the relationship cannot be explained in its absolute value; both

intrinsic and extrinsic are viewed as presence of drive (motive).

For the null hypothesis of a good fitting model, it was rejected. This obviously brings about the discrepancies between the model and the data. One reasonable explanation for this might be the large sample size used in the study. The study however found fitness in the estimated RMSEA, CFI, TFI and Coefficient of Determination (CD) calculated. The structural equation model indicates that the study found a way to reproduce the data matrix with a certain level of precision. The relationships among the factors were accurate and expected, although it took lesser number of variables. This is in line with other model fitness estimate for academic motivation model (Tremblay, 1998). Tremblay (1998) used Structural Equation Modelling analyses to provide support for a motivation model postulating that Motivational Maintenance, consisting of effort, attention and persistence measures, and Academic Ability. It is important to know how data obtained closely fit a theoretical model. This would raise the confidence about generalizing an accepted model from sample to population.

Intrinsic Motivation Scale significantly correlated with Extrinsic Motivation Scale. However, the relationships of Amotivation with Intrinsic motivation, extrinsic motivation was not significant. This also confirmed the structural pattern of motivation construct. The finding found support in Lemos



&Verssimo, (2014) who also found specific pattern of relationship among motivation components that intrinsic motivation and extrinsic motivation can coexist and are not contradictory. The significant and positive relationship between extrinsic academic motivation and intrinsic academic motivation is also expected. Wilkesmann, Fischer & Virgillito, (2012) also found that the intrinsic academic motivation and extrinsic aspects do not stand in conflict with each other. To them, students who are intrinsically motivated and yet incentive would not destroy his or her intrinsic motivation.

The three sub-scales of the developed Academic Motivation Scale are reliable. This means the scale measure what it purports to measure and can also stand the test of time. Reliability is commonly used with Structural Equation Modelling and it explains Fraction of variance not due to measurement error. The reliability of the scale and sub-scale were measured with Cronbach's alpha and test-retest coefficient. This was supported by reliability of Wilkesmann, Fischer and Virgillito (2012) who found that academic motivation scale based on the three self-determination theory continuum obtained reliabilities of academic motivation scale ranging from .75 to 0.85 is practically necessary to obtain the reliability of a scale especially due to the effect of measurement errors.

#### Implication of the Study

The difference in student's level and type of motivation may explain why some students performance excellently than their counterparts in school despite being exposed to similar instruction.

If student motivation mechanism is understood, it will reduce the number of academic failure, drop-out and stress that challenge them. This will further help to fine tune the standard of education as well as contribute positively to the development of the country.

If students' motivational directions are understood, it would help to inform the methods of teaching to be employed. It could help counsellors to provide corrective measure as a way of fostering academic excellence among students.

Finally, the scores of the participants (students) on the developed scale can be used to predict the nature of motivation and to determine the next line of action by the Counselling Psychologists.

#### References

- Alexandris, K., Tsorbatzoudis, C. & Grouios, G. (2002). Perceived constraint on recreational sport participation: investigating their relationship withintrinsic motivation, extrinsic motivation and amotivation. *Journal of Leisure Research*, 34(3), 233-252.
- Ames, C., (1978). Children's achievement attributions and self-reinforcement; effects of self-concept and competitive reward structure. *Journal of Educational Psychology*, 70(3), 345-355.
- Archer, J., (1994). Achievement goals as a Measure for Motivation in University Students, *Contemporary Educational Psychology*, 19, 430-446.
- Ballmann, J.M. & Mueller, J.J. (2008). Using self-determination theory to describe the academic motivation of allied health professional-level college student. *Journal of Allied Health*, 37(2), 90-96.
- Bandalos, D. L., Geske, J. A. & Finney, S. J. (2005). A Model of Statistic Performance Based on Achievement Goal Theory. *Journal of Educational Psychology*. 95(3), 604-616.
- Bandura, A., (1986). Social foundation of thought and action: A social cognitive theory, Englewood Cliffs, NJ: Prentice Hall.
- Barranek, L.K. (1996) The Effect of Rewards and Motivation on Student Achievement. Unpublished *Masters Thesis*. Grand Valley State University.
- Blumenfeld, P. C., Pokay, P., (1990). Predicting achievement early and late in the semester: the role of motivation and use of learning strategies. *Journal of Educational Psychology*, 82(1), 41-50.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In: K. A Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Beverly Hills, CA: Sage.
- Bryne, B (2010). *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming*, 2nd ed. Taylor and Francis Group.
- Cameron, J. & Pierce, W. D. (2002). *Rewards and Intrinsic Motivation – Resolving the Controversy*. Westport: Bergin & Garvey.
- Chemers, M.M., Hu, L, Garcia B.F. (2001). Academic Self-Efficacy and First-Year College Student Performance and Adjustment. *Journal of Educational Psychology*, 93(1), 55-64.
- Deci, E., & Ryan, R.. (1985). *Intrinsic Motivation and Self-Determination in Human Behavior*, New York: Plenum Press.



- Deci, E. L. (1970). Effects of Externally Mediated Rewards on Intrinsic Motivation. *Journal of Personality and Social Psychology*, 18, 105-115.
- Deci, E. L., Koestner, R. & Ryan, R. M. (1999). A Meta-Analytic Review of Experiments Examining the Effects of Extrinsic Rewards on Intrinsic Motivation. *Psychological Bulletin*, 125, 627-668.
- Ryan, R. M. & Deci, E. L., (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 23, 54-67.
- Deci, E.L. & Ryan, R.M. (2008). Self-Determination Theory: A Macrotheory of Human Motivation, Development and Health. *Canadian Psychology*, 49(3), 182-185.
- Eccles, J. S. (2005). Subjective task value and the model of achievement-related choices. In A. J. Elliot and C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 105-121). New York, NY: Guilford.
- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, 53, 109-132.
- Frederick, C. & Ryan, R. (1995). Self-determination in sport: A review of Cognitive Evaluation Theory. *International Journal of Sport Psychology*, 26(2), 5-23.
- Gottfried, A. E. (1990). Academic intrinsic motivation in young elementary school children. *Journal of Educational Psychology*, 82(3), 525-538.
- Grouzet, F., Otis, N. & Pelletier, L. (2006). Longitudinal cross-gender factorial invariance of the academic motivation scale. *Structural Equation Modeling*, 13(1), 73-98.
- Harackiewicz, J.M., Barron, K.E. Pintrich, P.R., Elliot, R.A. & Thrash, T.M. (2002). Revision of achievement goal theory: Necessary and illuminating. *Journal of Educational Psychology*, 94(3), 638-645.
- Hayamizu, T. (1997). Between intrinsic and extrinsic motivation: Examinations of reasons for academic study based on the theory of internalization. *Japanese Psychological Research*, 39, 98-108.
- Hofer, B.K., Yu, S.L. & Pintrich., P.R., (1998). Teaching college students to be self-regulated learners. In D.H. Schunk, B.J. Zimmerman (Eds.). *Self-regulated learning: From teaching to self-reflective practice*, (pp 57-85) New York: The Guilford Press.
- Hu, L., & Bentler, P. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling*, 6(1), 1-55.
- Jones, B. D. & Skaggs, G. (2012). Validation of the MUSIC Model of Academic Motivation Inventory: A measure of students' motivation in college courses Research presented at the International Conference on Motivation. (August 28, 2012) Frankfurt, Germany.
- Joreskog, K. G., & Sorbom, D. (1981). *LISREL V*. Mooresville, IN: Scientific Software.
- Schermelleh-Engel, K. & Moosbrugger, H. (2003). Evaluating the Fit of Structural Equation Models: Tests of Significance and Descriptive Goodness-of-Fit Measures. *Methods of Psychological Research Online*. 8(2), 23-74.
- Kingston, K. M., Horrocks, C. S. & Hanton, S. (2006) Do Multidimensional Intrinsic And Extrinsic Motivation Profiles Discriminate Between Athlete Scholarship Status And Gender? *European Journal of Sport Science*, 6(1), 53-63.
- Kusurkar, R. A., Cate, T., Th. J. C., Vos, M. P., Westers, P. & Croiset, G. (2013). How motivation affects academic performance: a structural equation modelling analysis. *Advance in Health Science Education*, 18, 57-69.
- Lemos, M. & Veríssimo, L. (2014). The relationships between intrinsic motivation, extrinsic motivation, and achievement, along elementary school. *Procedia - Social and Behavioral Sciences*, 112, 930 - 938.
- Lepper, M. R., Greene, D. & Nisbett, R. E. (1973). Undermining Children's Intrinsic Interest with Extrinsic Reward: A Test of the "Overjustification" Hypothesis. *Journal of Personality and Social Psychology*, 28, 129-137.
- Maehr, M. L., & Zusho, A. (2009). Achievement goal theory: The past, present, and future. In K. Wentzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 77-104). New York, NY: Routledge.
- McCollum, D. & Kajs, L., (2007). Applying goal orientation theory in an exploration of student motivations in the domain of educational leadership. *Educational Research Quarterly*, 31(1), 45-60.
- Niemiec, C., & Ryan, R. (2009). Autonomy, competence, and relatedness in the classroom. *Theory and Research in Education*, 7, 133-144.
- Pintrich, P. R. & DeGroot, E.V., (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82(1), 33-40.



- Pintrich, P. R., & Zusho, A. (2002). The development of academic self-regulation: the role of cognitive and motivational factors. In A. Wigfield & J. S. Eccles (Eds.), *Development of achievement motivation* (pp.249-284). San Diego, CA: Academic Press.
- Pintrich, P. R., Schunk, D. H., (2002). *Motivation in education: Theory, research and applications*. 2nd ed. Englewood Cliffs, NJ: Prentice Hall.
- Pintrich, P.R., Smith, D. A. F., Garcia, T. McKeachie, W.J. (1991). A manual for the use of the motivated strategies for learning questionnaire (MSLQ). Ann Arbor, Michigan, The University of Michigan.
- Rummel, A. &Feinberg, R. (1988). Cognitive Evaluation Theory: A meta-Analytic Review of the Literature. *Social Behavior and Personality*, 16, 147-164.
- Ryan, R. M. & Deci, E. L., (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 23, 54-67.
- Ryan, R. M., & Deci, E. L. (2009). Promoting self-determined school engagement: Motivation, learning, and well-being. In K. R. Wentzel & A. Wigfield (Eds.). *Handbook of motivation at school* (pp. 171-196). New York, NY: Routledge.
- Ryan, R. M., & Weinstein, N. (2009). Undermining quality teaching and learning: A self-determination theory perspective on high-stakes testing. *Theory and Research in Education*, 7, 224-233.
- Schunk, D.H., (1996). Goal and self-evaluative influences during children's cognitive skill learning. *American Educational Research Journal*, 33, 359-382.
- Schunk, D. H., & Pajares, F. (2009). Self-efficacy theory. In K. R. Wentzel & A. Wigfield (Eds.). *Handbook of motivation at school* (pp. 35-53). New York, NY: Routledge.
- Schunk, D. H., (1984). Sequential attributional feedback and children's achievement behaviours. *Journal of Educational Psychology*, 76, 1159-1169.
- Schunk, D. H., (1989). Self-efficacy and achievement behaviours. *Educational Psychology Review*, 1, 173-208.
- Senko, C., Harackiewicz, J.M. (2005). Regulation of Achievement goals: the Role of Competence Feedback. *Journal of Educational Psychology*, 97(3), 320-336.
- Spence, J. C. (2014). The Role of Intrinsic and Extrinsic Motivation Focusing on Self-Determination Theory in Relation to Summer Bridge Community College Students. Unpublished Ph.D Thesis, California State University, San Bernardino.
- Spittle, M., Jackson, K. & Casey, M., (2009). Applying self-determination theory to understand the motivation for becoming a physical education teacher. *Teaching and Teacher Education*, 25, 190-197.
- Steiger, J. H (1989). *Causal Modelling: A supplementary Module for SYSTAT and SYGRAPH*. Evanston, IL: SYSTAT.
- Sternberg, R.J. (2005). Intelligence, Competence and Expertise in E. Andrew & D. Carol (Eds.). *Handbooks of Competence and Motivation*. New York, USA: The Guilford Press.
- Tang, S. & Hall, V. C. (1995). The Overjustification Effect: A Meta-Analysis. *Applied Cognitive Psychology*, 9, 365-404.
- Tosi, H. L., Rizzo, J. R., Carrol, S. J. (1990). *Managing organisational behavior*. 2nd ed. New York, NY: Harper Collins Publishers.
- Tremblay, P. F. (1998). Development and construct validation of the academic motivation inventory. Unpublished Ph.D Thesis. The University of Western Ontario. London, Ontario.
- Vallerand, R.J., & R. Bissonnette. (1992). Intrinsic, extrinsic and amotivational styles as predictors of behaviour: A prospective study. *Journal of Personality*, 60(3), 599-620.
- Vallerand, R. J., Pelletier, L.G. Blais, M. R. Briere, N. M., Senecal, C. & Vallieres, E. F. (1992). The Academic Motivation Scale: A measure of intrinsic, extrinsic and amotivation in education. *Educational and Psychological Measurement*, 52(4), 1003-1017.
- Whitehead, J. R. (1993). Physical activity and intrinsic motivation. Research digest, Series 1; 2. Washington, DC: President's Council on Physical Fitness and Sports.
- Wiersma, U. J. (1992). The Effects of Extrinsic Rewards in Intrinsic Motivation: A Meta-Analysis. *Journal of Occupational and Organizational Psychology*, 65, 101-114.
- Wigfield, A. & Eccles, J. S. (2001). The development of competence-related beliefs and achievement task values from childhood to adolescence... Retrieved from <http://www.rcgd.isr.umich.edu/garp/articles/eccles02c.pdf>.
- Wigfield, A., & Eccles, J. S. (1992). The development of achievement task values: A theoretical analysis. *Developmental Review*, 12, 265-310.



Wigfield, A., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology*, 25, 68–81.

Wilkesmann, U., Fischer, H. & Virgillito, A. (2012). Academic Motivation of Students –The German Case. Discussion paper. Retrieved from <http://hdl.handle.net/2003/29393>.

Wilson, G. (2006). ABC Body Building. Effect of external rewards on intrinsic motivation. Retrieved

from <http://www.abcbodysbuilding.com/rewards.php>.

Wormington, S. V., Corpus, J. H., & Anderson, K. A. (2012). A person-centered investigation of academic motivation and its correlates in high school. *Learning and Individual Differences*, 22, 429–438.

UNIVERSITY OF IBADAN LIBRARY