

# Effects of Teachers' Non-cognitive Skills on Students Achievements in the Educational System: Implications for Teacher Training Programmes in Botswana

Omobola O. Adedoyin<sup>1,\*</sup>, L. A. Chisiyanwa<sup>2</sup> and J. Mensah<sup>3</sup>

<sup>1</sup>BA Isago University  
P. 0 Box 149, Kgale Suite  
Gaborone, Botswana

<sup>2</sup>BA Isago University  
P. 0 Box 149, Kgale Suite  
Gaborone, Botswana

<sup>3</sup>BA Isago University  
P. 0 Box 149, Kgale Suite  
Gaborone, Botswana

\*Corresponding author's email: [omobola\\_adedoyin \[AT\] yahoo.com](mailto:omobola_adedoyin@yahoo.com)

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**ABSTRACT----** *The training of teachers in institutions of higher learning emphasises on the knowledge of the subject matter and pedagogical skills or teaching methodologies. These are cognitive skills a teacher should possess for effective teaching in the educational system. But recently non- cognitive skills have been identified or suggested as also having an impact on learning outcomes. This research study examined the effect of teachers' non-cognitive skills on students' achievements in the educational system as perceived by students. A questionnaire was developed and administered to a sample of three hundred (300) 2016 fresh undergraduate students at BA ISAGO University, who had just finished from different Senior Secondary Schools in Botswana. The undergraduate students' responses were subjected to Factor analysis. From the factor analysis, six (6) factors emerged with eigen values greater than one as the most important non-cognitive skills that Botswana teachers should possess which were as follows; Perseverance, Accommodating, Efficiency, Caring, Consideration and motivational skills that were perceived as teachers should possess for effective academic achievements by students. The undergraduate students' responses were also tested for significance with respect to gender and school location of students. Recommendations were made for the Botswana educational system and also implications for teacher training programmes in Botswana.*

**Keywords---** Teachers' non cognitive skills; Students achievements.

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## 1. INTRODUCTION

Teacher Education programmes emphasise on preparing competent, committed and professionally well qualified teachers who can meet the demands of the educational system. Teacher Education institutions focus on developing trainee teachers in the areas of subject content matter, pedagogical theories and teaching methodologies or skills. These teaching methodologies or skills include equipping and providing trainee teachers with different strategies and approaches that would help them to plan lessons effectively, to impart instruction efficiently, and also provide necessary reinforcement techniques in the teaching and learning environment with effective assessment methodologies. Teacher training institutions also expose teacher trainees to classroom management skills and the use of instructional materials and communication skills. This is due to the fact that the quality of teaching is very important in promoting effective learning and students' academic achievements in the educational system. According to literature, the skills the trainee teachers are being exposed to at present are called *cognitive skills*.

The term non- cognitive skills refers to a set of attitudes, behaviours and strategies that are thought to underpin success in school and at work. Rosen, Glennie, Dalton, Leonnon and Bozick (2010) defined non-cognitive skills as those academically and occupationally relevant skills and traits that are not specifically intellectual or analytical in nature but which influence behaviour and facilitate achievement. Non- cognitive skills are increasingly considered to be as important or even more important than cognitive skills or IQ in explaining academic and employment outcomes. Non-cognitive skills have been identified by researchers as those attitudes, behaviours, and strategies which facilitate success in school or workplace, such as motivation, grit, optimism, resilience, adaptability, self- efficacy, hope, perseverance,

conscientiousness and self-control. Non-cognitive skills are any skills that are not cognitive, such as memory, attention, planning, language and thinking skills, emotional maturity, empathy, interpersonal skills and verbal and non-verbal communication.

These factors are termed ‘non-cognitive’ as they are considered to be distinct from the cognitive and academic skills usually measured by tests. Although non-cognitive skills are often not measurable, unlike cognitive skills, which educators can measure objectively with tests, they influence the overall behaviour of performance of a person at work.

In a wide range of studies from a variety of disciplines, researchers have established an association between non-cognitive skills and academic outcomes (Farkas, 2003; Heckman et al., 2006; Lleras, 2008). Furthermore, these researchers have suggested that investing in the development of these non-cognitive factors would yield high returns in future educational and employment outcomes, and help close the attainment gap between advantaged and disadvantaged young people (e.g., Heckman et al., 2006).

### **1.1 Significance**

This study is significant at a time when Botswana seeks to attain its vision of being an educated and informed nation. This can only be attained through stakeholders who take a holistic approach as compared to a narrow minded approach in attaining higher student achievement. The findings of this study may inform teacher training initiatives, and consequently assist in producing teachers who would take an active role with the right attitude and intents towards producing better students.

### **1.2 Statement Of The Problem**

School performance is a complex phenomenon shaped by a wide variety of factors intrinsic to students and their external environment. Other researchers have described these factors as non-cognitive skills. The term non-cognitive skills go beyond a narrow reference to skills and include strategies, attitudes, and behaviours of teachers. In an attempt to attain the desired level of student performance, the government of Botswana has endeavoured to improve teacher quality through in-service training. Despite these efforts, the Botswana Examinations Council continues to report a shocking decline in students’ performance across various levels from PSLE to BGCSE in recent years. It is evident that taking teachers through academic training is not enough. Could this calamity be attributed to the fact that the teacher training curriculum in Botswana remains focused on the enhancement of teachers’ cognitive abilities while neglecting non-cognitive skills. The influence of teachers’ non-cognitive skills on student achievement cannot be over-emphasised.

The institutions of teacher education should play a very important role to produce human capital that is highly knowledgeable and skilful to meet the demands and expectations of the market. The teaching and learning processes in institutions of teacher education should be capable to provide such knowledge and skills to prospective teachers. The curriculum process of teacher education should be capable of providing some knowledge and skills for teachers and also infuse non cognitive skills in the curriculum of teacher education for successful teaching career.

The purpose of this study is to identify the non-cognitive skills of teachers that are very necessary in teaching as perceived by students; establish the extent to which the teachers’ non cognitive skills have an impact on students’ achievement.

### **1.3 Research Objectives**

- (i) Identifying the non -cognitive skills of teachers as perceived by the students.
- (ii) Finding out if there is significant difference with respect to gender of the perceived non cognitive skills on students’ achievements.
- (iii) Finding out if there is significant difference with respect to location of schools (urban/ rural) of the perceived non cognitive skills on students’ achievements.

### **1.4 Research Questions**

1. What are the non -cognitive skills of teachers perceived by students?
2. Is there any significant difference with respect to **gender** of students in relation to the perceived non-cognitive skills on students’ achievements?

3. Is there any significant difference with respect to **location of schools** of students in relation to the perceived non-cognitive skills on students' achievements?

### **1.5 Research Hypotheses**

1. There is a significant difference with respect to gender of students in relation to the perceived non cognitive skills on students' achievements.

2. There is a significant difference with respect to location of students' school (urban/rural) in relation to the perceived non cognitive skills on students' achievements.

## **2. LITERATURE REVIEW**

### **2.1 Researchers Views Of Non-Cognitive Variables**

Recently, researchers in education and social sciences have recognised that non-cognitive skills play a critical role in educational success and achievement. The term non-cognitive according to Farkas (2003, p.542) are traits, behaviours, and skills that are not measured with the traditional cognitive tests. Cognitive abilities are usually measured by objective tests, while non-cognitive traits and skills are often assessed through some form of rating system using surveys or observations, reported either by respondents themselves or by others who can judge the qualities of the person being assessed. Cognitive tests are assessments of cognitive abilities. Examples of such tests include (a) IQ tests like the Stanford-Binet or Raven's Progressive Matrices; (b) ability tests measuring, for instance, spatial ability, or information-processing speed; and (c) subject-matter tests, such as reading or mathematics tests.

Farkas (2003) explained that the non-cognitive skills relevant to academic achievement typically include (a) variables such as attitude, values, interest, and curiosity; (b) personality or temperament variables, such as conscientiousness and extraversion; (c) social relations variables including leadership, social sensitivity, and the ability to work with others; (d) self- constructs such as self-efficacy and personal identities; (e) work habits such as effort, discipline, persistence, and time management; and (f) emotions toward a specific task, such as enthusiasm and anxiety.

Recently, non-cognitive skills have received increasing attention in the field of education and more scholars have recognized their importance (Chamorro-Premuzic & Furnham, 2003; Pianta et al., 2007; Burrus et al., 2011). Rosen et al. (2010) focused on seven non-cognitive skills: motivation, effort, self-regulated learning, self-efficacy, academic self-concept, antisocial and pro-social behaviour, coping and resilience. The University of Chicago Consortium on Chicago School Research, in partnership with Lumina Foundation and Raikes Foundation, conducted another review where they categorized non-cognitive factors into five groups and provided a framework on how the groups related to academic performance as well as how the groups were connected to each other (Farrington et al., 2012).

Anand (2013) conducted a research to explore the non cognitive skills level among secondary school teachers based on gender. Non cognitive skills as interpersonal relationship skills and communication skills that were required at various level in class as well as in society in order to communicate effectively and to develop relationship profoundly. It was found out that female teachers are effective in communication skills rather than male counterparts. Therefore it is significant that the teachers have to equip themselves through training programme for carrying out the teaching profession effectively and efficiently.

Reddy and Krishnaiah(2014) conducted a research to study about the role of teachers in a laboratory of English language communication skills. It was a very difficult job for the English teachers to build learners communication skills. It was concluded that English teachers must have more patience and hard work with a dedication and commitment for procuring the expected result from their students. It was also noticed that for developing the communication skills of their students, teachers have to attend lots of training programmes and practice sessions. The teacher of English language has to play multi roles such as motivator, counsellor, facilitator, mentor, diagnostician and friendly trainer.

Dobbie (2011) conducted a study using Teach for America (TFA) database. The purpose of the study was to establish the impact of teacher characteristics on student achievement. Student achievement was modelled as a function of student and teacher characteristics, all factors that might influence student achievement, for example, race, grade and student level were controlled. TFA is a non-profit organisation that recruits recent college graduates to teach in low income communities. In its recruitment, TFA focuses on individuals who possess strong academic records and leadership capabilities. It is particularly interested in those who have the capability of being effective teachers but have not already pursued a teaching qualification. The individuals' capability of being effective teachers is assessed based on the following criteria; leadership, perseverance, organisation, motivational ability and critical thinking. The findings indicated that students assigned to a teacher with higher measures of leadership and perseverance score 0.054 and 0.040

standard deviations in higher in mathematics respectively. Critical thinking, organisational and motivational ability were not significantly related to mathematics achievement. Despite lack of training, on average, students assigned to TFA corps score about 0.15 standard deviations higher in mathematics and 0.04 standard deviations higher in reading than students assigned to traditionally certified teachers. Based on the findings of this study, it seemed that non-cognitive skills do play a role in student achievement. Examples of non-cognitive skills measured in this study include leadership and perseverance and both have been found to significantly improve student performance. The researcher recommended a strict screening process that also focused on non-cognitive skills of teachers.

### **3. METHODOLOGY**

#### **3.1 Research Design**

This study is quantitative survey design, determining the effect of teachers non cognitive skills on students achievements within the educational system in Botswana.

#### **3.2 Population**

The population for this study were all new undergraduate students at BA ISAGO University for 2016/2017 academic year.

#### **3.3 Sampling Procedure**

A random sample of three hundred (300) students from various programmes of the total number of students were selected for this study to respond to the questionnaire, out of which 285 responded to the questionnaire on non- cognitive skills of Botswana Senior Secondary School (SSS) teachers.

#### **3.4 Instrument**

The questionnaire consisted of two sections A and B. In section A, the new intakes were asked about their background information, and section B consisted of thirty (30) closed ended questions in statement form, which was constructed based on literature on teachers' non-cognitive skills in relation to effective learning and teaching outcomes in the classroom. The new university intakes were asked to indicate the effect of their teachers' non-cognitive skills on their academic achievements on four Likert rating scale, strongly disagree (SD), disagree (D) agree (A) and strongly agree (SA). The instrument was reviewed by experts for face and content validity. For the reliability analysis, the internal consistency reliability coefficient, Cronbach's Alpha formula was computed for the items in the instrument (the questionnaire) and the value was 0.919.

#### 4. PRESENTATION AND DISCUSSION OF RESULTS

##### Research questions

What are the non -cognitive skills of teachers perceived by students?

**Table 1:** Descriptive statistics of students' responses.

Statements	mean	SD	SE	SD	D	A	SA
1. Teachers should always come to class on time.	2.98	.726	.043	8	56	162	65
2. Teachers' attitude in the classroom should be positive.	3.22	.648	.038	4	24	167	96
3. Teachers to be responsive to students' problems.	3.13	.717	.042	10	28	167	86
4. Teachers should motivate students to learn.	3.42	.676	.040	6	13	126	146
5. Teachers should be supportive in the classroom.	3.26	.612	.036	-	26	162	103
6. Teachers should listen to their students.	3.15	.633	.037	2	33	174	82
7. Teachers should always be ready to assist students.	3.14	.686	.040	6	33	167	85
8. Teachers should always come down to our level to ensure understanding.	3.11	.744	.044	10	36	157	88
9. Teachers should allow students to speak freely in the classroom.	3.14	.802	.047	13	37	138	103
10. Teachers to be approachable.	3.16	.695	.041	5	35	158	93
11. Teachers to be very democratic.	3.01	.822	.048	16	49	143	83
12. Teachers should not be angry with the students.	2.35	.910	.053	55	112	92	32
13. Teachers should be very open with students.	2.92	.725	.042	11	50	171	59
14. Teachers should be concerned about students' performances.	3.42	.671	.039	4	18	122	147
15. Teachers should always give students benefits of good achievement in school.	3.14	.789	.046	13	34	144	100
16. Teachers to treat students equally.	2.96	.897	.053	24	51	129	87
17. Teachers should come to class prepared.	3.16	.776	.046	8	44	133	106
18. Teachers should be very confident in what they do.	3.32	.662	.039	4	20	147	120
19. Teachers should keep confidential information about us.	3.20	.697	.041	4	35	150	102
20. Teachers to always be warm towards us.	3.03	.692	.041	6	47	170	68
21. Teachers should be able to express themselves well.	3.12	.729	.043	10	32	163	86
22. Students should not be afraid of teachers.	2.96	.856	.050	19	55	135	82
23. Teachers should keep the classroom environment welcoming.	3.06	.717	.042	10	36	171	74
24. Teachers must correct students' mistakes in a gentle manner.	2.89	.866	.051	26	48	148	69
25. Teachers to be very polite in the choice of words they use in the classroom.	3.04	.787	.046	17	33	162	79
26. Teachers to be very lively in the classroom.	3.13	.751	.044	12	29	158	92
27. Teachers to be very patient with students.	3.05	.753	.044	10	45	156	80
28. Teachers should tolerate students' differences.	3.15	.749	.044	12	27	158	94
29. Teachers to see the best in students.	3.28	.731	.043	8	24	137	122
30. Teachers to have an attitude to work well with other teachers.	3.30	.630	.037	4	15	162	110

To answer research question 1, the responses of the students to the items on the questionnaire were analysed using SPSS software. Table 1 shows the descriptive statistics of students' responses with a minimum mean response of 2.35 and maximum mean response of 3.42.

The students' responses were also subjected to Exploratory Factor analysis with the principle components method and varimax rotation was used to summarise the variables into underlying sets of factors. Through factor analysis, variables can be reduced into factors, each reflecting an underlying property which is commonly shared by a group of variables (De Vaua, 2002). In order to determine the number of factors to be extracted, several rotation solutions were compared, taking into account the percentage of explained variance, the scree plot and the eigenvalue criterion. Six (6) factors accounted for approximately 53.989% of the variance, with eigenvalues ranging from 9.324 to 1.113 (tables 2 & 3).

**Table 2: Eigenvalues of the six (6) factors after varimax rotation.**

Factors	Total	% variance	Cumulative %
1.	9.324	31.080	31.080
2.	1.826	6.087	37.168
3.	1.501	5.004	42.172
4.	1.240	4.132	46.304
5.	1.193	3.976	50.279
6.	1.113	3.710	53.989

**Table 3: Total variance explained by the factors.**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% Variance	of Cumulative %	Total	% Variance	of Cumulative %
1	9.324	31.080	31.080	9.324	31.080	31.080	3.6600	12.200	12.200
2	1.826	6.087	37.168	1.826	6.087	37.168	3.3550	11.183	23.383
3	1.501	5.004	42.172	1.501	5.004	42.172	2.9770	9.923	33.306
4	1.240	4.132	46.304	1.240	4.132	46.304	2.2500	7.500	40.807
5	1.193	3.976	50.279	1.193	3.976	50.279	2.0200	6.734	47.540
6	1.113	3.710	53.989	1.113	3.710	53.989	1.9350	6.449	53.989
7	.998	3.326	57.315						
8	.970	3.234	60.549						
9	.929	3.096	63.645						
10	.806	2.685	66.331						
11	.781	2.604	68.935						
12	.759	2.530	71.465						
13	.720	2.401	73.866						
14	.705	2.351	76.217						
15	.624	2.078	78.295						
16	.617	2.057	80.352						
17	.581	1.938	82.290						
18	.551	1.835	84.125						
19	.529	1.764	85.890						
20	.486	1.620	87.510						
21	.473	1.577	89.086						
22	.450	1.499	90.585						
23	.419	1.398	91.983						
24	.402	1.340	93.323						
25	.383	1.276	94.599						
26	.373	1.244	95.842						
27	.352	1.172	97.015						
28	.316	1.052	98.067						
29	.305	1.016	99.083						
30	.275	.917	100.000						

Extraction Method: Principal Component Analysis.

The final factor structure is shown in table 4. New titles to the six (6) emerging factors from the students' responses to the questionnaire.

**Table 4:** factor structure after varimax rotation.

Items	loadings
<b>Factor 1: Perseverance skills of teachers</b>	
item28. Teachers should tolerate students' differences.	.755
Item 27. Teachers to be very patient with students in the classroom.	.635
Item 29. Teachers to see the best in students.	.623
Item 25. Teachers to be very polite in the choice of words they use in the classroom.	.597
Item 30. Teachers to have an attitude to work well with other teachers.	.596
	.516
<b>Factor 2: Accomodating skills of teachers</b>	
Item 6. Teachers should listen to their students.	.704
Item 5. Teachers should be supportive in the classroom.	.635
Item 3. Teachers to be responsive to students' problems.	.622
Item 4. Teachers should motivate students to learn.	.605
Item 19. Teachers must keep confidential information about students.	.573
<b>Factor 3: Efficiency skills of teachers</b>	
Item 9. Teachers should allow students to speak freely in the classroom.	.638
Item 1. Teachers should always come to class on time.	.638
Item 17. Teachers should come to class prepared.	.520
<b>Factor 4: Caring skills of teachers</b>	
Item 22. Students should not be afraid of teachers.	.726
Item 23. Teachers should keep the classroom environment welcoming.	.641
Item 24. Teachers must correct students' mistakes in a gentle manner.	.556
<b>Factor 5: Consideration skills of teachers</b>	
Item 10. Teachers to be approachable.	.724
Item 11. Teachers to be very democratic.	.625
Item 21. Teachers should be able to express themselves well.	.520
<b>Factor 6: Motivation skills of teachers</b>	
Item 18. Teachers should be very confident in what they do.	.642
Item 12. Teacher should not be angry with the students.	-.583
Item 14. Teachers should be concerned about students' performance.	.566

The six (6) non cognitive skills of teachers identified by the students were as follows:

**Perseverance skills** (This is the ability of a teacher to overcome obstacles. According to Dobbie 2011 and Duckworth, Quinn, Seligman 2009, teachers with higher levels of grittiness or perseverance produce high student achievement).

**Accomodating skills; Caring skills; Consideration skills can be grouped as teachers' social skills** (e.g. interpersonal skills and cooperation) (Farrington et al., 2012).

**Efficiency skills** ( This is the ability of a teacher to effectively manage tasks in the classroom. Wiggins and Mctighe 2005, connected efficiency skills which they called organisational ability to academic students achievements.)

**Motivation skills**(This is the ability of a teacher to motivate students to achieve. Cohen, 2011 stressed that there should be a link between teachers' traits and student achievement gains).

### Research Hypothesis 1

**There is no significant difference with respect to gender of students in relation to the perceived non cognitive skills of teachers on students' achievements.**

**Table 5: Descriptive statistics and the result of independent t-test with respect to gender of students**

<i>Perceived non cognitive skills of teachers by students.</i>		<i>no</i>	<i>mean</i>	<i>SD</i>	<i>Std error</i>	<i>t-value</i>	<i>Df</i>	<i>sig</i>
<b>Factor 1: Perseverance skills of teachers</b>	Female	199	15.90	2.769	.196	.741	289	.459
	Male	92	15.65	2.360	.246			
<b>Factor 2: Accomodating skills of teachers</b>	Female	199	16.35	2.532	.179	1.983	209.146	.049* **
	Male	92	15.78	2.117	.221			
<b>Factor 3: Efficiency skills of teachers.</b>	Female	199	9.33	1.684	.119	.802	289	.423
	Male	92	9.15	1.809	.189			
<b>Factor 4: Caring skills of teachers</b>	Female	199	8.88	1.994	.141	-.499	289	.618
	Male	92	9.00	1.735	.181			
<b>Factor 5: Consideration skills of teachers</b>	Female	199	9.30	1.669	.118	.118	289	.906
	Male	92	9.27	1.652	.172			
<b>Factor 6: Motivation skills of teachers.</b>	Female	199	9.15	1.384	.098	1.326	181.993	.187
	Male	92	8.92	1.344	.140			

P<0.05 for significance

There was a significant difference with respect to gender of students in relation to the perceived non cognitive skills of teachers on students' achievements in factor 2, which is that the teachers should possess accommodating skills.

**Factor 2: Accomodating** skills of teachers (mean of 16.35 for female responses with standard deviation of 2.532 and 15.78 for the male responses with standard deviation of 2.117). T-value of 1.983, degree of freedom 209.146 and significant at .049 alpha level.

## Research Hypothesis 2

**There is no significant difference with respect to location of students' school (urban/rural) in relation to the perceived non cognitive skills on students' achievements.**

The six (6) non cognitive skills of teachers identified by factor analysis in table 6 were analysed using SPSS independent t-test, to find out if there were any significant differences with respect to school location of where the students studied, with their perception on teachers non cognitive skills and academic achievement. It was found in table 6 below that there was no significant difference with respect to students' school location, since all the p-values were higher than 0.05 for the identified six (6) non cognitive skills identified. This means that the student's school location (rural / urban) had no significant effect on their perceptions of the effect of teachers' non cognitive skills on achievements.

**Table 6: Descriptive statistics and the result of independent t-test with respect to students school location.**

<i>Perceived non cognitive skills of teachers by students.</i>		<i>no</i>	<i>mean</i>	<i>SD</i>	<i>Std error</i>	<i>t-value</i>	<i>Df</i>	<i>sig</i>
<b>Factor 1: Perseverance skills of teachers</b>	Rural	149	15.91	2.646	.217	.603	289	.547
	Urban	142	15.73	2.650	.222			
<b>Factor 2: Accomodating skills of teachers</b>	Rural	149	16.32	2.377	.195	1.063	289	.289
	Urban	142	16.01	2.461	.207			
<b>Factor 3: Efficiency skills of teachers.</b>	Rural	149	9.34	1.770	.145	.717	289	.474
	Urban	142	9.20	1.677	.141			
<b>Factor 4: Caring skills of teachers</b>	Rural	149	9.07	1.811	.148	1.368	289	.172
	Urban	142	8.76	2.010	.169			
<b>Factor 5: Consideration skills of teachers</b>	Rural	149	9.22	1.774	.145	-.706	289	.481
	Urban	142	9.36	1.536	.129			
<b>Factor 6: Motivation skills of teachers.</b>	Rural	149	8.99	1.450	.119	-1.091	289	.276
	Urban	142	9.17	1.288	.108			

P<0.05 for significance

## 5.SUMMARY

Non-cognitive skills can be defined also as personality traits or feelings, behaviour, patterns of thoughts of a teacher which will affect academic achievements of students. Bernstein et al., (2007), classified non cognitive skills into five categories as follows; openness to experience, conscientiousness, extraversion, agreeableness and neuroticism. Educators



at the University of Chicago Consortium on Chicago School of Research concluded that non-cognitive skills of teachers must be strongly associated with academic performance such as; academic behaviours (e.g. teachers going to class and participating); academic perseverance (e.g. grit and self-discipline); academic mindsets (e.g. feeling a sense of belonging within an academic community and believing that ability and competence can grow with effort); learning strategies (e.g. metacognitive strategies and goal setting); and social skills (e.g. interpersonal and cooperation), Farrington et al., 2012. According to these researchers, ‘there are a number of different skills, both affective (such as ‘growth mindset’), and also behavioural( such as regular school attendance) that fall within the broad category known as non-cognitive skills. The result from this study also identified six (6) non- cognitive skills that students perceived that Botswana teachers should possess in order to improve students’ learning outcomes or academic achievements in schools which were perseverance skills, accommodating skills, efficiency skills, caring skills and motivational skills, which are very similar to results got from educational researchers on the effect of non -cognitive skills on academic performance.

In conclusion, educators like Gabrieli, Ansel & Krachman (2015) have indicated that non-cognitive skills can predict academic achievement. Lindquist and Vestman (2011) have also found that non-cognitive skills are more predictive of long-term outcomes than test scores. Other researchers have also shown that character strength suggested by Park, Peterson and Seligman (2004); soft skills (Duncan & Dunifon 2012);emotional intelligence by Goleman (2006) are all concepts belonging to the general non-cognitive skills of teachers that affects students’ academic performance. Recently, non – cognitive skills have received increasing attention in the field of education and more scholars ( Chamorro-Premuzic&Furnham (2003); Pianta et al (2007); Burrus et al (2011) have recognised their importance to academic performance of students and which formed the focus of the Partnership for 21<sup>st</sup> Century Skills with the support of the US Department of Education and National Education Association.. It is now imperative that non-cognitive skills are as important as cognitive skills for academic achievements of students.

## **6. RECOMMENDATIONS**

- Teacher training institutions in Botswana should incorporate the development of both cognitive and non-cognitive skills of teachers.
- The Ministry of Education and Skills Development should be fully aware of the long term effects of teachers’ non-cognitive skills on student achievement.
- The overall importance of non cognitive skills for the educational system should be taken into account when designing school policies.
- Employment of teachers should be adjusted to take into cognizance the special relevance of non-cognitive skills.

## **7. REFERENCES**

### **References for Journals**

- Anand.K(2013), Soft Skills Competency Tool for Secondary Teachers in Strengthening Effective Communication and Interpersonal Competence- A Case Study, Science Technology and Management Journal by AISECT University, pp:1-5.
- Chamorro-Premuzic, T., & Furnham, A. (2003). Personality predicts academic performance: Evidence from two longitudinal university samples. *Journal of Research in Personality*, 37(4), 319-338.
- Cohen, D. (2011). *Teaching and its Predicaments*. Cambridge, MA: Harvard University Press.
- Dobbie, W. (2011). Teacher characteristics and student achievement: Evidence from Teach for America. Available from: <http://www.people.fas.harvard.edu>.
- Duckworth, A. L., & Yeager, D. S. (2015). Measurement matters assessing personal qualities other than cognitive ability for educational purposes. *Educational Researcher*, 44(4), 237-251.
- Duncan, G. J., & Dunifon, R. (2012). “Soft-Skills” and long-run labour market success. *Research in labour economics*, 35, 313-339.
- Farkas, G.(2003)“Cognitive skills and non-cognitive traits and behaviours in stratification process”, *Annual Review of Sociology* 29 (1):541-562.
- Gabrieli, C., Ansel, D., and Krachman, S. (2015). Ready to Be Counted: The Research Case for Education Policy Action on Non-Cognitive Skills. Retrieved from: <https://goo.gl/7e8Kkg>.

- Lleras, C. (2008). Do skills and behaviors in high school matter? The contribution of noncognitive factors in explaining differences in educational attainment and earnings. *Social Science Research*, 37, 888–902.
- Lindqvist, E. and R. Vestman (2011), ‘The Labor Market Returns to Cognitive and Noncognitive Ability: Evidence from the Swedish Enlistment’, *American Economic Journal: Applied Economics*, 3(1), 101-128.
- Park, N., Peterson, C., & Seligman, M. E. (2004). Strengths of character and well- being. *Journal of Social and Clinical Psychology*, 23(5), 603-619.
- Pianta, Robert C., Carollee Howes, Margaret Burchinal, Donna Bryant, Richard Clifford, Diane Early, and Oscar Barbarin. 2005. “Features of Pre-Kindergarten Programs, Classrooms, and Teachers: Do They Predict Observed Classroom Quality and Child-Teacher Interactions?” *Applied Developmental Science*, vol. 9, no. 3, 144–159.
- Reddy.B and Krishnaiah.S(2014), Role of Teacher in English Language Communication Skills Laboratory, *International Journal of Scientific Research*, pp:145-146.

## **2.References for Books**

- Bernstein, D., L. Penner, A. Clarke-Sterwart and E. Roy (2007) *Psychology*, 8th edition, Wadsworth Publishing.
- Burrus, J., MacCann, C., Kyllonen, P. C., & Roberts, R. D. (2011). Noncognitive constructs in K-16: Assessments, interventions, educational and policy implications. *Readings on Equal Education: Diversity, Merit, and Higher Education: Toward a Comprehensive Agenda for the Twenty-First Century*, New York.
- Farrington, C. A., Roderick, M., Allensworth, E., Nagaoka, J., Keyes, T. S., Johnson, D. W., & Beechum, N. O. (2012). *Teaching Adolescents to Become Learners: The Role of Noncognitive Factors in Shaping School Performance--A Critical Literature Review*. Consortium on Chicago School Research. 1313 East 60th Street, Chicago, IL 60637.
- Goleman, D. (2006). *Emotional intelligence*. Random House LLC.
- Heckman, J. J., Stixrud, J., & Urzua, S. (2006). The effects of cognitive and noncognitive abilities on labor market outcomes and social behavior (No. w12006). National Bureau of Economic Research.
- Rosen, J. A., Glennie, E. J., Dalton, B. W., Lennon, J. M., & Bozick, R. N. (2010). *Noncognitive Skills in the Classroom: New Perspectives on Educational Research*. RTI International. PO Box 12194, Research Triangle Park, NC 27709-2194.
- Wiggins, G., & McTighe, J. (2005). *Understanding by Design*. Alexandria, VA: Association for Supervision and Curriculum Development.