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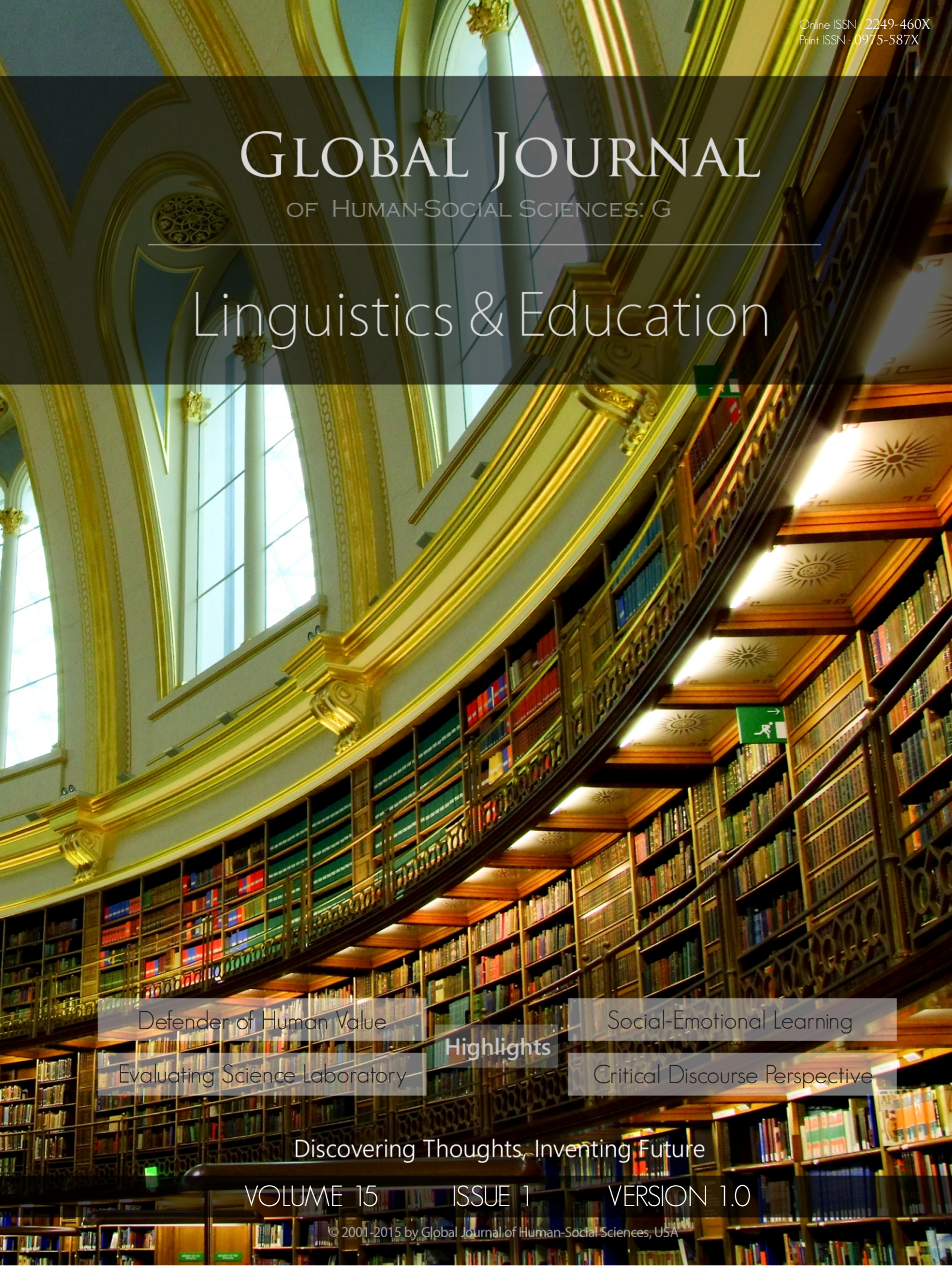

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# An Assessment of Leadership Styles towards Students' Academic Performance in Government Secondary Schools of Wolaita and Dawro Zones, South Ethiopia

By Endale Berhanu Demissie, Deribe Debella Kebede & Tafano Ouke Labiso
*Wolaita Sodo University, Ethiopia*

*Abstract-* The major purpose of this study was to assess the leadership styles practiced by principals of the secondary schools towards students academic performance of Wolaita and Dawro Zones. In order to achieve the objective of the study, descriptive survey method was employed. The study was conducted in four government secondary and preparatory schools of Wolaita Zone and three Secondary and Preparatory Schools of Dawro Zone. The schools were selected by simple random sampling techniques. Teachers were selected by systematic sampling while principals were selected by using the availability sampling. The study included 14 principals and 280 teachers. Questionnaires, observation and document analysis were used to collect data. Data were analyzed using percentages, mean and weighted mean. Based on the analysis the study portrayed that almost all principals and teachers were first degree holders, considerable number of principals were not specialized in the management fields of study and less stake holders' involvement in the decision making process were found to be the major factors. Hence, it is recommended that each schools' principals should be provided with appropriate training and development in stake holder involvement, communication with stake holders, appropriate leadership styles and team work.

*Keywords:* *assessment, leadership, leadership styles, academic performance and secondary schools.*

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# An Assessment of Leadership Styles towards Students' Academic Performance in Government Secondary Schools of Wolaita and Dawro Zones, South Ethiopia

Endale Berhanu Demissie [α], Deribe Debella Kebede [σ] & Tafano Ouke Labiso [ρ]

*Abstract-* The major purpose of this study was to assess the leadership styles practiced by principals of the secondary schools towards students academic performance of Wolaita and Dawro Zones. In order to achieve the objective of the study, descriptive survey method was employed. The study was conducted in four government secondary and preparatory schools of Wolaita Zone and three Secondary and Preparatory Schools of Dawro Zone. The schools were selected by simple random sampling techniques. Teachers were selected by systematic sampling while principals were selected by using the availability sampling. The study included 14 principals and 280 teachers. Questionnaires, observation and document analysis were used to collect data. Data were analyzed using percentages, mean and weighted mean. Based on the analysis the study portrayed that almost all principals and teachers were first degree holders, considerable number of principals were not specialized in the management fields of study and less stake holders' involvement in the decision making process were found to be the major factors. Hence, it is recommended that each schools' principals should be provided with appropriate training and development in stake holder involvement, communication with stake holders, appropriate leadership styles and team work.

*Keywords: assessment, leadership, leadership styles, academic performance and secondary schools.*

## I. Introduction

Schools' ability to deliver high quality education is dependent to a very large extent on its leadership quality. This implies that the principals have a significant role to play regarding educational quality improvement. The importance of the principal's role in the enhancement of quality in schools is corroborated by Webster (1991) where he links it to the primary aim of the school, namely learner growth. He even suggested that learner growth be used as a measure for effective principal leadership.

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Kruger (2003) supports this notion of assessing the principal's effectiveness by the academic performance of students' by asserting that "the achievement of excellence in a school is dependent in the final analysis, on the quality of the educational experience of each of its students".

As part of the task of principals' leadership, Smith et al. (2001) assert that the principal, in order to influence the students' academic performance, should perform the following tasks:

- Establish the school's academic goals.
- Provide motivation to the educators and the students.
- Support the educators and the students with the needed instructional resources.
- Communicate high performance expectations to the educators and the students.
- Design policies and procedures by which to promote teaching and learning at school.

As part of the principal's responsibilities at school, Whitaker (1997) argues that principal leadership is the most critical responsibility for the school. This implies the significant influence the principal's leadership has on the success of the principal on academic success of the school are Hallinger and Heck (1998) and Smith et al. (2001) who argue that schools that make a difference in students' learning and academic success are those led by principals who make a significant and measurable contribution to the quality of what transpires in classrooms.

Moreover, the students' academic success is directly related to the principal's leadership is supported by many authors (Cheng, 1994; Donmoyer & Wagstaff, 1990; Heck, 1992; Leitner, 2004; Garman, 2005). For these authors, the principal impacts on student academic performance indirectly by influencing the teacher's behavior and attitude towards the core mission of the school in various ways. The teacher's behavior and attitude, in turn, influence the students' attitude to academic work and learning. The situation that initiated the researchers to study on this topic was the researcher's observation of different annual reports of students' academic achievement. Reports indicated

that below 50% promoted and more than half of students show poor performance although the students took Ethiopian general secondary education certificate examination (EGSECE) are high in number. Besides, students who pass to preparatory are very few in Wolaita and Dawro zones and it needs special leadership and attention. This is due to a number of factors such as teacher related, school related, and learner related factors. Among school related factors, the most important aspect of the school that has great impact on student learning and achievement is school leadership(Berhanu, 2006)

The leadership style and managerial skills are important aspects in improving the quality of education and school management. The principal is the leading professional in the school that the major role of him/her is providing professional leadership and management for a school(Armstrong,2004). On the other hand, there have been still debates concerning a particular leadership style results in the most effective form of organizational performance(Zekariyas,2012). Different leadership styles are needed for different situations and each leader should know when to use a particular leadership style; and hence there are no one leadership style is ideal for every situation(Kamau,2007). The closeness of the relations between leaders and employees is one of the determining factors in the effectiveness of the roles and functions performed by the organization(Sonia,2009).

The Federal government of Ethiopia has been working strongly to make school leadership effective so that principals play a pivotal role that will assure school improvement in different schools. This is because; the main target of school improvement is improving students' achievement and student learning (GEQIP, 2010). However, many students failing in some secondary schools of the region. Although it is recognized that the failure rate in secondary schools could be contributed to by many factors…… (i.e. parental involvement, inadequate resources, not committed teachers, ill-disciplined learners, inadequate advisory services). Based on, the above problems and the researchers' observation, while teaching in secondary schools in Wolaita and Dawro Zones, the researchers are initiated to investigate the real problems of secondary school performance and leadership practice in the Zones.

In the light of the above perspective, this study is designed to examine the existing practice and related problems of leadership in secondary schools of Wolaita and Dawro zone.

To this effect, the study will be guided by the following basic questions:

1. What kinds of leadership styles are employed by school principals in secondary schools of wolaita and Dawro zones?
2. To what extent does leadership styles of school principals influence students' academic performance of secondary schools of wolaita and Dawro Zones?
3. What roles can principals, teachers and other stake holders play to improve students' academic performance in secondary schools of Wolaita and Dawro Zones?

## II. Objectives of the Study

This section introduces the objectives of the study which includes general and specific objectives.

*a) General objective*

To examine the problems associated with leadership styles towards students' performance and suggest possible solutions to the problems.

*b) Specific objectives*

1. To assess the current leadership styles employed by school principals.
2. To describe factors that influence the choice of leadership styles.
3. To identify the major problems that hinder the role of leadership and implementation of students performance.

## III. Conclusions

1. The findings of the study revealed that majority of the respondents (principals and teachers) were qualified with first degree, which is bellow the required level of qualification to manage the secondary schools. Concerning to the field of specialization, majority of the respondents were not specialized in the management fields of study such as educational planning and management. They specialized in the area of other subjects. This reveals that most position holders (leaders) at various managerial levels were not familiar with scientific theories and principles of management. Hence, this may in turn affect their managerial skills in the process of leadership styles towards the academic performance of students in the education systems of sample secondary schools of Wolaita and Dawro Zones.
2. Leaders need to follow democratic leadership styles to bring improvements or change in students academic performance (Merron, 2005). With this respect, when the leadership styles in Wolaita and Dawro sample secondary schools checked against some important characteristics such as cooperating with groups in the school, generating new ideas, encouraging team work and seeking new ways of doing things were not as strong as it should be. Moreover, the leadership was found to be not visionary and is not ready to accept change. From this it is possible to conclude that the current

leadership style in sample secondary schools of Wolaita and Dawro Zones was unable to bring about improvements in students academic performance as replied by teachers and principals.

3. The analysis revealed that the principals of selected secondary schools were affected by all listed items in their order of mean rank in the study. particularly, the political, social, cultural and economic environment in which the school functions, the type of staff involved in the task, the level of interaction and co-operation among the members of the staff, the principals' personality, the principals' self experience, skill, knowledge and professional qualification in the field of leadership and the degree of community and parents participation were highly affected the choice of principals leadership styles standing from first to fifth respectively.
4. The study also indicated that principals and teachers were unable to function their roles such as providing staff with the time and resources to pursue developmental objectives, checking the staffs work on regular basis to assess their progress and learning, the involvement of teachers and other stake holders in the decision making of school activities and the focus of teachers on school improvement efforts of management changes. Thus, it can be concluded that teachers, principals and other stake holders lack commitment to effectively and efficiently manage the tasks in order to improve students' performance.
5. Regarding the academic performance of grade 10 students; only two schools (Areka and Tercha secondary schools, by the years 2011 and 2012 respectively passed more than 50% students to preparatory level. However, the majority of sample schools such as Humbo, Bele, Gesuba, Waka and Gesa secondary schools didn't pass students as expected to the next level (preparatory level). Moreover, when we look at the average number of students who passed to the preparatory level in three consecutive years(2011-2013) of EGSECE were below 50% except Tercha secondary school(54.5%). From the total sample secondary school students who took the EGSECE(16,536), only (5,750) 34.8 % were passed to the preparatory level in the three successive years. Which means the level of students in these schools found to be bellow the standard (50%). This shows that the principals leadership style has a linkage with students performance. Therefore, it is concluded that a significant relationship existed between principals leadership style and students performance.

## IV. Discussions and Findings

This study deals with the research methodology; source of data; sample size and sampling techniques; instruments and procedures for data collection; and methods of data analysis that were employed to analyze the data gathered.

In under taking the study, both qualitative and quantitative research methodology were used. Descriptive research design was employed as it is the appropriate method to enable the researcher to describe and assess the implementation practice of the current leadership styles and students performance in the two zones in a broad and wider magnitude. Hence, this method will be preferred on the ground that factors that affect leadership styles and students' performance is better perceived from the opinion survey of secondary school principals and teachers.

The data were collected from two sources-primary and secondary sources of data. This helped the researcher get pertinent data related to the study at hand from these important sources.

Data gathered from different respondents that may have adequate information about the leadership styles and students' performance in the secondary schools of Wolaita and Dawro Zones. Accordingly, the Primary data was obtained from principals, vice principals, department heads, unit leaders and teachers. To substantiate the data obtained from the primary sources, documents such as plans and performance reports, annual reports, directives, journals and published and unpublished documents will be reviewed and used as secondary sources of data.

The sample size of the study comprises a total of 306 respondents: 292(66%) of teachers out of 445 of the population in the sample secondary schools and 14 (67%) of principals will be taken as a sample.

*Table 1 :* Population and sample size of respondents

| Sample Secondary schools | | Respondents type | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Principals | | | | Teachers | | | |
| Out of 15 Secondary and Preparatory Schools, 4 and 3from each Zones Wolaita and Dawro respectively | | Population | | Sample | | Population | | Sample | |
| No | Schools | No | % | No | % | No | % | No | % |
| 1 | Bele Sec. & Prep. | 3 | 100 | 2 | 66.7 | 51 | 100 | 38 | 74.5 |
| 2 | Humbo Sec. & Prep. | 3 | 100 | 2 | 66.7 | 98 | 100 | 57 | 58.2 |
| 3 | Gesuba Sec. & Prep. | 3 | 100 | 2 | 66.7 | 84 | 100 | 49 | 58.3 |
| 4 | Areka Sec. & Prep. | 4 | 100 | 2 | 50 | 95 | 100 | 55 | 57.9 |
| 5 | Tercha Sec. & Prep. | 3 | 100 | 2 | 66.7 | 41 | 100 | 30 | 73.2 |
| 6 | Waka Sec. & Prep. | 3 | 100 | 2 | 66.7 | 51 | 100 | 38 | 74.5 |
| 7 | Gessa Sec. & Prep. | 2 | 100 | 2 | 100 | 25 | 100 | 25 | 100 |
| Total | | 21 | 100 | 14 | 100 | 445 | 100 | 292 | |

*Source: Wolaita and Dawro Zone Education Department*

In order to gather sufficient and relevant data for the study, two Zones were selected purposely because these are University catchment areas where research undertaken and the long experience of the researchers in these Zones. However, woredas within the zones, secondary schools and teachers were selected by using simple random and systematic sampling respectively, because to give equal chances for the variables to be included in the study. Moreover, principals were sampled by using availability sampling since their number was small and the available ones at the moment taken as a sample.

The study employed both quantitative and qualitative data and the data were gathered by the help of instruments namely, questionnaires, interview and document review. Moreover, the questionnaires were pre tested.

The questionnaires with close ended and few open ended were designed to collect data from two groups(secondary school principals and teachers).The questionnaires help to collect data, particularly from large numbers of the respondents living in different localities. In supporting this, Wilkinson and Birmingham (2003) have argued that the questionnaire is a preferable data gathering tools which enable to effectively collect data in a planned and manageable ways.

Attempts were made to refer certain essential documents such as annual reports, directives, plans and students performance reports. This tool was employed for that it will have a great importance to include empirical evidence in the study, and it can also help to weight the validity of certain information that obtained from different sources.

The data collected on the basis of the purpose of the study through the above stated instruments were tallied, tabulated and organized properly. Then, the organized and tabulated data were presented on a table, which gives detailed background information about the sample population and their responses. The data analysis involved, the analysis of information gathered through document analysis and responses to the question items in the questionnaires. The data was analyzed on the basis of the research questions. Accordingly, frequency counts, percentage and mean were employed to analyze the data obtained. Frequency counts and percentage were used to figure out similar responses. Depending on the results of the analysis, interpretations and necessary discussions were made to clarify the issue.

*a) The current leadership styles practiced in the secondary schools of the two zones*

In the literature review of this study, it has been discussed that leadership styles are classified based on sharing of decision making between leader and followers. These styles are democratic or participative, autocratic or directive, bureaucratic or collegial and laissez-faire or free reign. Each behavior is associated with distinct cultural traits. With regard to this, Schein (2004) recommended that leadership and organizational culture conceptually are interconnected. He also argues that culture determines leadership while leaders create shape and manage culture. Each of the aforementioned leadership styles have their own unique behavior that distinguishes one from the other. The organization with autocratic leadership, for example, exhibited behaviors that are listed 1 to 3 of the table below. Accordingly, in this study, sample respondents were asked to rate their opinion on whether leadership in the secondary schools of Wolaita and Dawro was characterized by the stated behaviors and what kind of styles practiced. The following table presents responses obtained from principals and teachers.

*Table 2 :* Mean rating results of respondents opinion on currently practiced leadership styles

| No | Items | 1 | 2 | 3 | 4 | 5 | Mean | WM | WMR | Styles |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A principal usually leads to high levels of absentism and staff turn over | 18 | 44 | 42 | 148 | 38 | 3.53 | 3.56 | 1 | Autocratic |
| 2 | A principal closely monitor and control the staff to ensure that they are performing correctly | 47 | 58 | 47 | 98 | 40 | 3.58 | | | |
| 3 | There is a clear division of labor between the principal and teachers | 30 | 38 | 29 | 115 | 78 | 3.59 | | | |
| 4 | A principal tells the staff what to do, how to do it and when he wants it done | 32 | 50 | 49 | 95 | 63 | 3.37 | 3.09 | 3 | Bureaucratic |
| 5 | Staff members were required to follow prescribed procedures under strict discipline | 38 | 88 | 33 | 78 | 53 | 3.06 | | | |
| 6 | Criticism and punishment were minimal in your school | 39 | 112 | 38 | 50 | 42 | 2.86 | | | |
| 7 | A Principal delegates as many tasks as possible in staffs' complete entirety | 41 | 81 | 36 | 89 | 37 | 3.04 | 2.97 | 4 | Democratic |
| 8 | Each individual is responsible for defining his or her job and encouraging team work | 44 | 96 | 37 | 74 | 40 | 2.88 | | | |
| 9 | Decentralized system of management has been practised in your school | 60 | 60 | 41 | 80 | 46 | 2.99 | | | |
| 10 | A principal does not assign work in small and easily controlled units | 25 | 72 | 53 | 100 | 39 | 3.20 | 3.23 | 2 | Laissez-fair |
| 11 | A principal leaves the team members to work on their own and allowed complete permissiveness | 32 | 53 | 53 | 96 | 55 | 3.31 | | | |
| 12 | A principal anticipate people will come up with the best working methods when given minimal instruction | 41 | 60 | 40 | 100 | 49 | 3.18 | | | |

*4.50-5.00= strongly agree, 3.50-4.49=agree, 2.5=3.49= Undecided 1.50-2.49= Disagree, 1.00-1.49= strongly disagree. The abbreviations refers to WM = Weighted Mean; WMR = Weighted mean rank*

As shown in table 3, respondents were asked to rate their opinion on currently practiced leadership in Wolaita and Dawro secondary schools as a principal leads to high levels of absentism and staff turn over, closely monitor the staff to ensure that they are performing correctly, a clear division of labor between the principal and teachers. As computed mean values of 3.53 and 3.58 were confirmed that principals and teachers agreed about statement being stated. Moreover, both principals and teachers with the mean value 3.59 were agreed on the presence of a clear division of labor between the principal and teachers. Furthermore, weighted mean is 3.56 and its weighted mean rank is 1. This shows that autocratic leadership style is strong and highly practiced in schools by principals.

Notwithstanding this finding, Glueck(1991) provides a justification for the exercise of a directive or autocratic style of leadership. He contends that the nature of employees impact on the leadership style to be exercised over them. Some employees are said to have been raised in a society in which most leaders follow the directive model. Where the directive style of leadership is dominant in a society, in a school setting employees may expect that type of leadership style and are likely to work better when getting what they expect.

For items 4 to 6 of the table, the computed mean values depicts that the respondents were uncertain whether the listed leadership behaviors manifested or not. For items 4,5 and 6 the computed mean values are 3.37, 3.06 and 2.86 respectively replied by both principals and teachers. additionally weighted mean value is 3.09 as well as weighted mean rank is 3. It means bureaucratic leadership style is strongly and highly practiced by principals next to autocratic and laissez-faire leadership styles in the secondary schools of Wolaita and Dawro Zones. i.e., the listed characteristics represent bureaucratic leadership style of principals.

Senge (1990) sounds a word of advice that, colleagueship(bureaucratic leadership) does not mean that one needs to agree or share the same views. On the contrary, the real power of seeing each other as colleagues comes into play when there are differences of view. Lewis and Smith (1994) are of the opinion that a culture of collegiality results in high levels of participation within an institution.

From the table it is also indicated that the principals and teachers were not sure whether delegation of tasks, defining individuals' tasks, and decentralized system of management are clearly defined and clarified. The computed mean of 3.04, 2.88 and 2.99 respectively verified this fact. Moreover, the weighted mean value of 2.9 and weighted mean value rank is 4.This implies that the characteristics of leadership styles which indicated in the table about

democratic leadership were rated the lowest and the principals practiced in smaller extent.

However, items 10, 11 and 12 in the same table, the mean values show that a principal does not assign work in small and easily controlled units was 3.20, A principal leaves the team members to work on their own and allowed complete permissiveness was 3.31 and A principal anticipate people will come up with the best working methods when given minimal instruction was 3.18. As the weighted mean value is 3.23 and also weighted mean rank is 2. These characteristics indicate laissez-faire leadership styles of principals. Thus, laissez-faire leadership style is strongly practiced followed autocratic leadership style in the schools of Wolaita and Dawro Zones by principals.

*b) Students' academic performance*

In this section, three consecutive academic years (2011-2013) national examination results of grade 10 in seven secondary schools of Wolaita and Dawro Zones were analyzed from documents. It helped to examine the amount of students in percentage promoted to the next level of education and to assess the distribution of the results in selected secondary schools. Moreover, the result indicates how many secondary schools were able to pass students in maximum percentage in each year.

The importance of the principal's role at school is further pointed out by Short(1998) when arguing that the principal's primary task is to focus efforts on what the school wants to achieve, what it wants to be, and what it wants to do for the students' academic performance. Short's view is supported by DuFour(1999) who asserts that the ultimate test of any leadership is the results the school can achieve students.

*Table 3 :* Students' academic performance of grade 10 (EGSECE) in seven (7) selected secondary schools from 2011-2013 consecutive three years in Wolaita & Dawro Zones

| Name of schools | Students took the exam | Number promoted | | Not Promoted | | Average no. of students not promoted in three years | Ranking Zonal | Year in G.C |
|---|---|---|---|---|---|---|---|---|
| | | F. | % | F. | % | | | |
| Humbo prep. | 952 | 181 | 19 | 771 | 81 | | 18 | 2011 |
| | 1064 | 261 | 24.5 | 803 | 75.5 | 75.7 | 19 | 2012 |
| | 1084 | 320 | 29.5 | 764 | 70.5 | | 3 | 2013 |
| Bele prep. | 744 | 264 | 35.5 | 480 | 64.5 | | 4 | 2011 |
| | 838 | 283 | 33.8 | 555 | 66.2 | 65.8 | 8 | 2012 |
| | 885 | 295 | 33.3 | 590 | 66.7 | | 10 | 2013 |
| Gesuba prep. | 1368 | 510 | 37.3 | 858 | 62.7 | | 3 | 2011 |
| | 1233 | 233 | 18.9 | 1000 | 81.1 | 74.9 | 10 | 2012 |
| | 1019 | 237 | 19.2 | 782 | 80.8 | | 7 | 2013 |
| Areka prep. | 988 | 201 | 20.3 | 787 | 79.7 | | 14 | 2011 |
| | 1392 | 671 | 48.2 | 721 | 51.8 | 55.4 | 14 | 2012 |
| | 1538 | 1003 | 65.2 | 535 | 34.8 | | 11 | 2013 |
| Tercha prep. | 245 | 201 | 82 | 44 | 18 | | 1 | 2011 |
| | 283 | 150 | 53 | 133 | 47 | 45.5 | 9 | 2012 |
| | 398 | 114 | 28.4 | 284 | 71.6 | | 11 | 2013 |
| Waka prep. | 437 | 146 | 33 | 291 | 67 | | 3 | 2011 |
| | 441 | 198 | 44.8 | 243 | 55.2 | 70.9 | 6 | 2012 |
| | 432 | 41 | 9.5 | 391 | 90.5 | | 15 | 2013 |
| Gessa sec. | 368 | 114 | 30.9 | 254 | 69.1 | | 2 | 2011 |
| | 368 | 169 | 45.9 | 199 | 54.1 | 62.9 | 3 | 2012 |
| | 459 | 158 | 34.4 | 301 | 65.6 | | 8 | 2013 |

*Source: National examination result (2011 to 2013) collected from each sampled preparatory schools during document analysis*

As indicated in table 8, regarding the academic performance of grade 10 students; only two schools(Areka secondary school, 65.2% in 2013 and Tercha secondary school, 82% and 53% in 2011 and 2012 respectively students passed to preparatory level. However, the majority of sample schools such as Humbo, Bele, Gesuba, Waka and Gesa secondary schools didn't pass students as expected to the next level (preparatory level). Which means the level of students in these schools found to be bellow the standard(50%). Moreover, when we look at the average number of students who passed to the preparatory level in three consecutive years(2011-2013) of EGSECE were below 50% except Tercha secondary school(54.5%). From the total sample secondary school students who took the EGSECE(16536), less amount(5750) 34.8 % were passed to the preparatory level in the three successive years. Furthermore, Zonal ranking was given to the secondary schools in Wolaita and Dawro Zones among 27 and 15 schools respectively comparing the students' results in grade 10 National exam.

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# The Paradox of the Quest for Global Peace and the Linguistic Violence of Some Countries' National Anthems: A Critical Discourse Perspective

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*Abstract-* It is axiomatic that the United Nations basically symbolizes peace and unity which member states or nations are expected to epitomize. Paradoxically, the anthems of many nations exhibit linguistic violence and rationalize or encourage using arms, shedding blood, going to war and paying supreme sacrifice. For example, we have expressions like "Hurry to arms people of Boyamo", "To arms citizens! Form your battalions", "War war! Soak our homeland's flag in the wave of blood", "Let us form cohorts, we are ready to die", "we will drink from death and never be to our enemies like slaves", "Our flag red with blood of victory, let us hasten to the battlefield", "Arise Togo! Let us struggle without faltering, victory or death but dignity" and "We will be risen with weapons in our hands. Death, yes death but not shame" in the national anthems of Cuba, France, Mexico, Italy, Iraq, Vietnam, Togo and Senegal respectively. This paper identifies the linguistic violence of some countries' national anthems, attempts a Critical Discourse Analysis (CDA) of the various forms of linguistic violence identified and suggests a linguistic overhaul of the affected countries' anthems. This is to discourage a situation where anthems that should be instrumental to societal tranquillity and harmony now encourage violent acts and attacks.

*Keywords: global peace, linguistic violence, national anthems, CDA, linguistic overhaul.*

*GJHSS-G Classification : FOR Code: 200499*


*Strictly as per the compliance and regulations of:*

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*Abstract-* It is axiomatic that the United Nations basically symbolizes peace and unity which member states or nations are expected to epitomize. Paradoxically, the anthems of many nations exhibit linguistic violence and rationalize or encourage using arms, shedding blood, going to war and paying supreme sacrifice. For example, we have expressions like "Hurry to arms people of Boyamo", "To arms citizens! Form your battalions", "War war! Soak our homeland's flag in the wave of blood", "Let us form cohorts, we are ready to die", "we will drink from death and never be to our enemies like slaves", "Our flag red with blood of victory, let us hasten to the battlefield", "Arise Togo! Let us struggle without faltering, victory or death but dignity" and "We will be risen with weapons in our hands. Death, yes death but not shame" in the national anthems of Cuba, France, Mexico, Italy, Iraq, Vietnam, Togo and Senegal respectively. This paper identifies the linguistic violence of some countries' national anthems, attempts a Critical Discourse Analysis (CDA) of the various forms of linguistic violence identified and suggests a linguistic overhaul of the affected countries' anthems. This is to discourage a situation where anthems that should be instrumental to societal tranquillity and harmony now encourage violent acts and attacks.

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## I. Introduction/Background

Four key concepts are fundamental to the thematic focus of the present paper which are global peace, linguistic violence, national anthem and Critical Discourse Analysis (CDA). They represent the bedrock of the paper which necessitates an isagogic semantic interpretation of each of these concepts to serve a roadmap to subsequent exploration cum explication of the subject matter of the paper. It is against this background that the paper commences with a semantic illumination of each of the first three basic concepts while the fourth concept, which doubly serves as a theory and methodology, is discussed as a preamble to the critical analysis of the linguistic violence of identified anthems of nations.

## II. The Concept of (Global) Peace

The word peace etymologically derives from the Latin word 'pax' which simply means "freedom from civil disorder". This must have informed the definition of peace as "the lack or absence of war" as contained in the United Nation Charter. However, Albert Einstein is of the opinion that Peace does not simply represent or symbolise absence of war but the presence of justice, law, order and good government. Sander and Perkins (2012), therefore, sees the simplistic definition of peace as absence of war as a serious oversight which ignores "the residual feelings of mistrust and suspicion that winners and losers of wars harbour towards each other". To them, such a definition of peace is another way of defining cold war. Peace, therefore, is more than just the absence of war and this is evident even in the way the synonymous Hawaiian 'Aloha', Arabic 'Salam' or Hebrew 'Shalom' is used as a mode of greeting. The United Nations however puts the records straight by describing culture of peace as the prevention or avoidance of violence and conflict based on the principles of gender equality, tolerance, human rights, peace education, disarmament etc.

The quest for global peace and security or safety has always been the primary focus or objective of the United Nations as well its various agencies. This is not surprising because even its forerunner, the leagues of nations, was conceived and established in 1919 under the Treaty of Versailles basically to facilitate international cooperation and for the purpose of global peace and security. This was after the International Peace Conference of 1899 held in The Hague to discuss the instruments for peaceful settlement of crises, prevention of wars and codification of warfare rules. The League of Nations ceased to exist as it could not prevent the Second World War and was succeeded by the United Nations. The UN officially came into existence on 24th October, 1945 when its Charter was signed by the representatives of 50 countries after its ratification by

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United States, United Kingdom, Soviet Union, China and France. The United Nations was, therefore, established, as jointly put by the then President Franklin Roosevelt of United States, Prime Minister Winston Churchill of United Kingdom and Premier Joseph Stalin of the Soviet Union, as an international organization to facilitate global peace and security.

Many notable steps have been taken by the United Nations at different points in time in line with its commitment to the peace and security of all and sundry across the globe. We have the adoption of the Convention on the Elimination of All Forms of Discriminations against Women by the UN National Assembly on 18th December, 1979. There was the United Nations Agenda on Peace Making, Peace Keeping and Peace Building in 1992 during the tenure of Boutros Boutros-Ghali. We have the Peace Building Commission put in place by the UN General Assembly on 20th December, 2005 to help countries emerging from conflicts/wars to achieve sustainable peace. There are also organs or agencies of the United Nations that aim at promoting gender equality and empowerment of women to mention just a few of the steps taken by the United Nations in the quest for sustainable global peace.

## III. Concept of (Linguistic) Violence

The word violence according to Lemke (2011: 1) refers to the use of force as a tool for some human purpose, individual or social, to which human beings as social actors are vulnerable. This is often exploited because of the possibility of "human actions being controlled by the fact, meaning and anticipation of pains inflated by others". This definition of violence is traceable to the etymology of the word which according to Adetunji (2010:10) emanates from the Latin word 'violare' which basically means 'force' while the word force according to Fliethmann (2006), also from the Latin word 'fortis', means violence. Violence according to Sullivan (2012: 385) refers to "behaviour that is intended to bring pain or physical injury to another person or to harm or destroy property". North, Wallis and Weingast (2009) however, points out the fact that virtually all human societies face the problem of violence either in the form of physical violence or via the coercive threat of physical violence which are both elements of violence.

Various forms of violence have been identified by different writers and researchers. We have media violence which according to Trend (2007:2) is all about mass media violence now escalating with the influx of violent materials in mass communication. Baumeister and Bushman (2011:301) identify domestic violence as that which occurs in a family or within the home. There is structural violence which Demenchorok and Peterson (2005: 51) describe as "the institutionally caused harms that are not only predictable but have been predicted and debated and for which preventive measures could have been taken". Mooney, Knox and Schacht (2011) identify gender (based) violence as that meted to or sustained by the victims due to their gender especially girls or women. We also have mass violence which Hogg and Vaughan (2011) describe as large scale or collective violence that usually claim several lives. Blanquer (2005) identify some other forms of violence like ethnic violence occurring within members of an ethnic group or between those of different ethnic groups, state violence which involves a government, street violence like that peculiar to gangsters and self-directed violence like suicide. We can also have sport and religious forms of violence common among fanatical supporters and adherents respectively.

Linguistic violence focused in this paper is a form of violence that is now arousing the interest of researchers, especially with the consideration or declaration of sexism/sexist language use as a form of linguistic violence. Adetunji (2010: 11) defines linguistic violence as a concept that explains the social and psychological use of language to abuse, offend or hurt people. He identifies linguistic violence as a product or manifestation of patriarchal hegemonic societal structure emanating from the asymmetric gender relation that makes the suppressed females to be linguistically oppressed by the males. Another term used to describe violence involving language use is verbal violence. Fiske-Rusciano (2009:272) points to this in declaring that "violence –physical, verbal, emotional, emotional and sexual is used to enforce the dominance of the perpetrators and the subordination of the victims. NB Its ends with quotation mark

Three main forms of linguistic violence have been identified by Gay (1999), namely, subtle form of linguistic violence, abusive form of linguistic violence and grievous form of linguistic violence. Three sub-categories of the subtle linguistic violence are also identified which, according to him, are found in some children jokes, literary restrictions and imposition of official languages. He further identifies heterosexual language, racist language and sexist language as sub-categories of the abusive linguistic violence. The grievous linguistic violence, to him, can also be sub-classified as warist language, nuclear language and genocidal language. The third form of the grievous linguistic violence happens to be the one that has direct bearing with the subject of this paper i.e. the linguistic violence of anthems especially the sub-category called warist language. This is basically because many of the anthems of affected nations or countries do encourage citizens to use weapons of war, to be ready to go to war and to be prepared to die, thereby, making supreme sacrifice of their precious lives for their beloved nations.

## IV. Concept of National Anthems

The word anthem and national anthem are sometimes used interchangeably and synonymously, whereas, they are not exactly the same. This is because while a national anthem is a form of anthem, an anthem may not be a national anthem. An anthem, according to the Oxford Advanced Learner's Dictionary, is a song that has a special importance for a country, an organization or a particular group of people which is sung on specific occasions. An anthem according to Kellen (2003: 166) refers to "the words that must always be sung, that have always been sung whose words and tune seem like permanent signs thereby making entities like nations appear permanent". Kellen further adds that "the anthems of nations participate in a dynamic nexus between, on the one side, official and unofficial cultures and real/imaginary schema of power and identity, on the other hand".

To Cerulo (1989), national anthems are recognized patriotic symbols representing national identity or character and usually employed by government of nations as instruments of cohesive bond among citizens and means of reinforcing target goals. Kyridis et al. (2009:5) stress the significance of the national anthem by describing it as "the most important symbol of every modern nation(al) state the lyrics of which include reference to the people's glorious past, the love and respect to homeland and its symbols". They further add that anthems possibly provide the strongest and clearest statement of national identity and serve as modern totem as they bear special relationship with the countries or nations they represent.

National anthems are, therefore, unique symbols/documents of national identity that are characteristic of virtually all the nations of the world. They, therefore, stand out among the array of state/national icons that have been identified like flags, coat of arms, monuments, myths etc. (Raento, Hamalainen & Mikkonen, 2004; Webster, 2006). They are usually carefully worded and poetically articulated/composed for them to specially convey their intended messages or meanings to their target audiences, especially the citizens of the nation or countries in question so as to have the desired effects. It is in the light of this that just as notable international organisations like UN, AU, EU, ASEAN and FIFA have unique anthems, different countries of the world also have distinct national anthems. These anthems usually epitomize the respective organisations or nations and could be made to capture or reflect facts about their histories, geographies, politics, cultures, economies, ideologies and aspirations among others. It is in the light of this that an anthem happens to be one of the very first things put in place when a nation (state) emerges, hence, even South Sudan the newest member state of the United Nations already has a national anthem that is as old as the country.

## V. Critical Discourse Analysis (CDA) of the Linguistic Violence of National Anthems

This paper presents a critique of the anthems of nations from the continents of Africa, Asia, South America, North America, Europe, and Australia/Oceania linguistically explored and with identified cases of linguistic violence of various forms. The anthems of forty (40) countries identified out of those of the one hundred and ninety-four (194) United Nations member states or nations linguistically explored are critically explicated using a qualitative critical discourse analytical approach. These include anthems originally written in English, which is obviously an international language, and those translated to English from other native languages of the different countries with the affected national anthems. However, those analysed here are the ones classified as grievous forms of linguistic violence by Gay (1999) which do not directly incorporate the abusive linguistic violence characterised by sexist language which Adetunji (2010) explicitly discussed.

The Critical Discourse Analysis (CDA) becomes inevitable in critiquing the linguistic violence of anthems of affected nations for some fundamental reasons. Basically, the theoretico-methodological (analytical) approach, according to Luke (1007), is essential in identifying, describing, explaining and critiquing social life in spoken or written texts. Titscher, Meyer, Wodak and Vetter (2000: 164) also point out that CDA focuses ''dominance and power relations between social entities and classes, between women and men, between national, ethnic, religious, sexual, political, cultural, and sub-cultural groups''. In a similar vein, Ayoola (2008:98) expressly declares that CDA centres on ''matters of grave concern to humanity such as inequality, injustice, all kinds of discriminations or oppressive behaviours, all shades of ideological discrepancies and societal conflicts''. Dijk (2001), therefore, states that CDA aids critical analysis and understanding serous social issues or societal problems emanating from or reflected in public texts and talks.

Specifically, the Norman Fairclough's three dimensional model or framework of CDA is adapted in the analysis of the identified cases of linguistic violence of anthems. The ideas of this basic Faircloughian analytical approach are, however, reinforced with some fundamental ideas or components of Wodak's Discourse Historical Analysis and Dijk's Socio-Cognitive Analysis. The choice of the three dimensional model as the basic analytical framework is informed by the fact that it is seen as a most developed theoretico-

methodological framework that is linguistically oriented and rooted in Systemic Functional Linguistic. It is believed to be an effective critical tool to expose power relations and to critique ideological assumptions embedded in texts and discourses (Jorgenson et al, 2002; Stibbe, 2001). Lande (2010) also sees the tripartite model as a cornerstone of CDA with sort of systematic guidelines for researchers.

The Faircloughian Critical Discourse Analysis (FCDA) has therefore been meaningfully adopted/adapted by researchers in examining topical social issues like sexism and racism which constitute the abusive linguistic violence (Al-Sharabi, Ibrahim & Nor, 2011; Nor & Aziz, 2010; Ayoola, 2008 and Hamid, Yasim, Baker, Keong & Jalaluddin, 2008). The critical discourse analysis based on the Faircloughian three - dimensional model usually centres on three analytical dimensions namely the description of text or textual analysis, the interpretation of text or process analysis and the explanation of text or social analysis. The description or textual analysis marks the first stage of the Faircloughian Critical Discourse Analysis which examines texts from purely linguistic perspective. The interpretation or process analysis marks the second stage of Fairclough's three dimensional analytical framework which centres on the process of text production, consumption and interpretation or comprehension. The explanation or social analysis of text represents the third level of the Fairclough's tripartite critical discourse perspective or approach which views text contents from the view point of the social structure, societal tradition or cultural system to identify the socio-cultural, socio-political or socio-ideological motivation of texts.

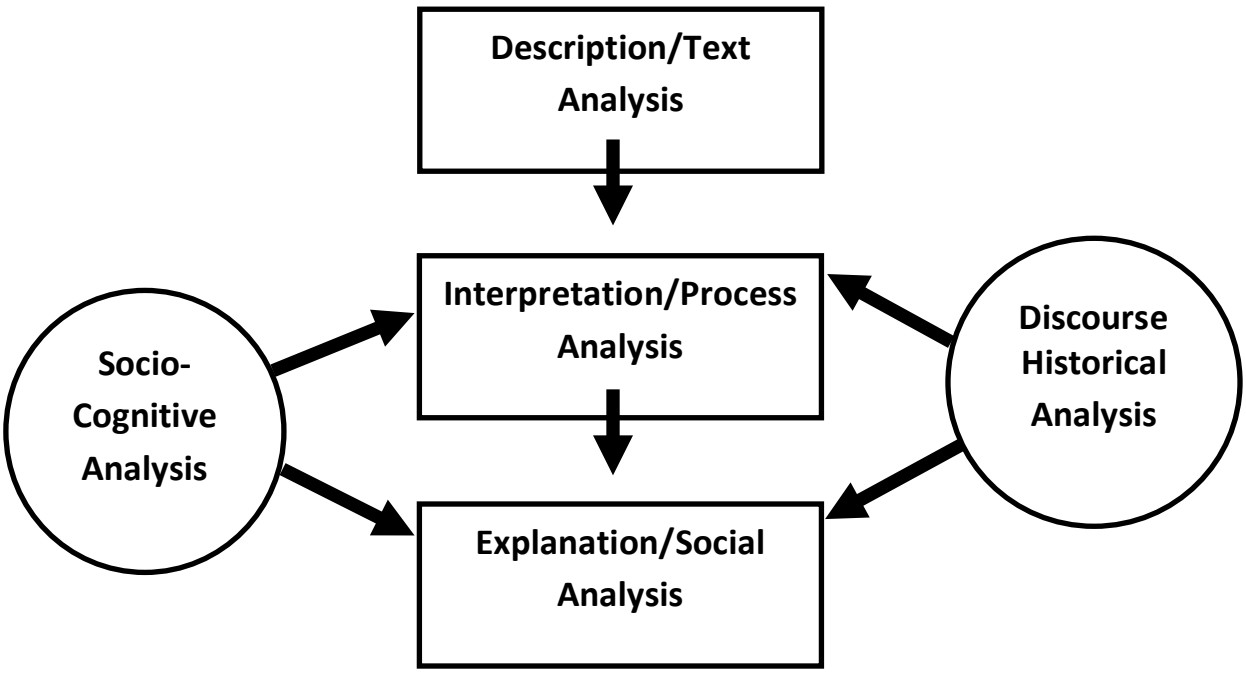


*Figure 1 :* Adapted Faircloughian Three-Dimensional CDA Framework

## VI. Description/Textual Analysis of the Linguistic Violence of Anthems of Nations

The description of the linguistic violence of anthems is based on the analysis of the various forms of expressions used to communicate or disseminate the different ideas identified as forms or elements of linguistic violence of anthems of nations. The first form of description will be a categorization of the various expressions considered as cases of linguistic violence of anthems which represents a classification that is based on the central ideas of the expressions conveying the identified violent ideas. This, however, is not a water tight classification as some are intertwined or interrelated. The second form of description of the linguistic violence of the anthems of nations involves the syntactic analysis of the various expressions communicating the identified linguistic violence of anthems. This is done with a view to identifying the various forms of sentences used in wording the linguistically violent ideas of anthems.

*a) Central-Idea-Based Description of the Linguistic Violence of Anthems of Nations*

This involves the description of the identified violent expressions of anthems of nations based on the main ideas conveyed in these expressions which border on the semantic implications of the expressions. The linguistic exploration of the anthems of nations shows variety of the expressions identified as cases of linguistic violence of anthems of nations. These include target-goal-oriented linguistic violence, enemy-resisting linguistic violence, opponent-targeted linguistic violence, dislike-preventing linguistic violence, territory/national-interest-protecting linguistic violence, pro-suicide (supreme sacrifice) linguistic violence, death-justifying/rationalising linguistic violence and war-alluding linguistic violence of anthems.

*b) Target-Goal-Oriented Linguistic Violence of National Anthems*

This is in respect of some expressions of anthems of nations which advocate violent acts or actions for the purpose of attaining some target goals considered to be of national interest or for the benefit of the people. For example, such expressions may aim at galvanizing the target audience towards achieving liberty or independence from some forces directly or indirectly controlling the nations in question. There are two main anthems of nations which exhibit this type of linguistic violence which are the anthems of Honduras and Burkina Faso the specific portions of which are shown below:

i. *Anthem of Honduras (Stanza Seven)*

To guide this sacred emblem, line1
We shall, oh fatherland, to our death, line 2
Our death will be honored if we die thinking of your love line 3
Many, Honduras, shall die for you but shall fall in honor line 4

ii. *Anthem of Burkina Faso (Chorus)*

One single night has brought together our people line5
With all the people of the world line 6
In the acquisition of liberty and progress line 7
Motherland or death, we shall conquer line 8

*c) Enemy-Resisting Linguistic Violence of National Anthems*

This form of linguistic violence employed in some national anthems aimed at preventing the activities of those identified or labelled as enemies of the nations in question. The linguistic violence therefore is intended to mobilize the target audience of the anthems to disallow any anticipated or perceived moves of those seen as adversaries of nations aimed at oppressing the people or subjecting them to humiliation. This form of violence can be described as a form of violence suggested as a means of halting or preventing some other types of violence. The anthems of Togo, Thailand, Poland and France have expressions depicting this form of linguistic violence as shown below:

i. *Anthem of Togo (One Stanza Anthem)*

Even if tyrants shall come, thy heart yarns towards freedom line4
Togo arise! Let us struggle without faltering line 5
Victory or death, but dignity line 6

ii. *Anthem of Thailand (One Stanza Anthem)*

The Thai people are peace loving line5
But they are no cowards at war line 6
All Thais are ready to give up every drop of blood line 9
For the nation's safety, freedom and progress line 10

iii. *Anthem of Poland (Chorus)*

As Czarniecki Poznan town regains line1
Fighting with the swede line 2
To free our fatherland from chains line 3
We shall return by sea line 4

iv. *Anthem of France (Stanza One & Chorus)*

They are coming into our midst line 7/1
To cut the throats of your sons and consorts line 8/1
To arms citizens line 1/cho
Form your battalions' line 2/cho
Let impure blood line 4/cho
Water our furrows line 5/cho

*d) Opponent-Targeted Linguistic Violence of National Anthems*

This is somehow related to the enemy-resisting linguistic violence because it has identified opponents as its target but differs in that while the enemy-resisting linguistic violence usually states actions that could necessitate the suggested violent actions thereby

sounding defensive the opponent-targeted linguistic violence is more or less offensive as it may not. It may be reflective of the war philosophy of attack as a best form of defence which may not be ideal in the contemporary societal yearning for global peace and tranquillity. Poland, Mali and Ukraine are countries with anthems having element this type of linguistic violence as illustrated below:

i. *Anthem of Poland (Stanza One)*

Poland has not yet succumbed line 1
As long as we remain, line 2
What the foe by force has seized line 3
Sword in hand we'll gain line 10

ii. *Anthem of Mali (Stanza One)*

If the enemy should show himself line 7
Within or without line 8
On the ramparts line 9
We are ready to stand and die line 10

iii. *Anthem of Ukraine (One Stanza Anthem)*

Our enemies will die as the dew in the sunshine line 3
And we, too, brothers, we'll live happily in our land line 4
We'll not spare either our souls or bodies to get freedom line 5
And we will prove that we brothers are of Kozak kin line 10

*e) Dislike-Preventing Linguistic Violence of National Anthems*

This is in relation to the linguistic violence exhibited in some countries anthems intended as a means of stopping certain happenings that the nations in question and the citizens seriously detest especially those considered to be inimical to their development. Such anthems therefore use strongly worded violent expressions to encourage the people to prevent the occurrence or recurrence of those things that the countries do not want to experience at all or again like oppression, enslavement, colonialism or neo-colonialism. Countries with anthems having elements of this type of linguistic violence include Romania, Seychelles, Senegal, Guatemala, Bolivia and Mexico as shown below:

i. *Anthem of Romania (One Stanza Anthem)*

We'd rather die in battle, in elevated glory line 13
Than live again enslaved on our ancestral land line 14

ii. *Anthem of Seychelles (Stanza One)*

Never, never shall we cease struggling line 3
Death rather than to live in slavery! line 4

iii. *Anthem of Senegal (Stanza Five)*

But if the enemy violates our frontiers, line 1
We will all be ready, weapons in our hand; line 2

iv. *Anthem of Guatemala (Stanza One & Chorus)*

Will call to you; conquer or die. line 8
For your people, with heart and soul line 3/cho
Would prefer death to slavery line 4/cho

v. *Anthem of Bolivia (Chorus)*

And on its alters we once more swear line 3
To die, rather than live as slaves line 4

vi. *Anthem of Mexico (Stanza Two)*

War, war without truce against who would attempt line 1
To blemish the honor of fatherland! line 2

*f) National Territory (Interest) Protecting Linguistic Violence of National Anthems*

This form of linguistic violence of anthems is premised on the need defend the cause of the nation as a sovereign geographical entity or protect the interest of the nation. The violent actions advocated in the anthems of such nations are aimed at confronting any force or entity that may try to jeopardize the continued existence of the nation. Some of the anthems of nations that have elements of this kind of linguistic violence include Algeria, Uruguay, Albania, Tunisia and Paraguay as shown below:

i. *Anthem of Algeria (Stanza One, Two & Four)*

That we are in revolt, whether to live or die line 5/1
We are determined that Algeria shall live line 6/1

ii. *Anthem of Uruguay (Stanza One & Three)*

Orientals, our nation or the grave, line 1/1
Liberty or with glory we die line 2/1

iii. *Anthem of Albania (Stanza Two and Three)*

With arms in hand we shall remain, line 1/3
To guard our fatherland round about. line 2/3

iv. *Anthem of Tunisia (One Stanza Anthem)*

The blood surges in our veins, line 3
We die for the sake of our land line 4

v. *Anthem of Paraguay (One Stanza Anthem)*

Paraguayans, republic or death! line 1
It was our strength that gave us our final liberty line 2

*g) Pro-Suicide (Supreme Sacrifice) Linguistic Violence of National Anthems*

This, simply put, refers to the linguistic violence of some anthems of nations that advocates patriotic suicide by encouraging citizens to be ready for supreme sacrifice of their lives if the need arises for the sake of their beloved nations. This slightly differs from those already discussed as it does not present an alternative option of living since it is sacrificial death believed to be a glorifying death as some have put it. This kind of linguistic violence of anthems is in the anthems of countries like UAE, Armenia, Turkey, Romania and Turkmenistan as shown below:

i. *Anthem of Armenia (Stanza Four)*

Every one dies only once line 2
But lucky is the one line 3
Who is sacrificed for his nation line 4

ii. *Anthem of Turkey (Stanza Two)*

Oh coy crescent do not frown for I am ready to sacrifice myself for you! line 1
Please smile upon my heroic nation, why that anger, why that rage? line 2
If you frown, our bloodshed for you will not be worthy line 3

iii. *Anthem of Turkmenistan (One Stanza Anthem)*

I am ready to give life for native hearth, line 5
The spirit of ancestors, descendants are famous for, line 6
Let my eyes go blind for any cruel look at you, line 23

iv. *Anthem of United Arab Emirates (UAE) (One Stanza Anthem)*

The safety has lasted and the glory has lived oh our Emirates line 10
We all sacrifice for you; we supply you with our blood line 12
We sacrifice for you with our souls oh motherland line 13

*h) Death Justifying/Rationalizing Linguistic Violence of National Anthems*

Anthems with the death-justifying/rationalizing elements of linguistic violence are the one which do not only encourage the idea of patriotic suicide in defence of the cause of the state or nation but which go further to justify or rationalize the suicidal act. Such anthems try to paint a better picture of death when it is for the sake of the beloved nation as opposed to the unthinkable and unimaginable picture of death that is not appealing to a vast majority of people and which is usually the last thing many will want to even think of or consider. There four anthems that exhibit elements of this type of linguistic violence of anthems which are the anthems of Haiti, Tunisia, Cuba and Romania illustrated below:

i. *Anthem of Cuba (Stanza One)*

You do not fear a glorious death line 3
Because to die for the country is to live line 4

ii. *Anthem of Haiti (Stanza Five)*

For the flag, for our country line 1/2
To die is a fine thing! line 3

iii. *Anthem of Romania (One Stanza Anthem)*

We'd rather die in battle, in elevated glory line 15
Than live again enslave in our ancestral land line 16

iv. *Anthem of Tunisia (One Stanza Anthem)*

We live and die loyal to Tunisia line 11
A life of dignity and a death of glory line 12

*i) War-Alluding/Battle Reminding Linguistic Violence of Anthems*

The linguistic violence of anthems in this category is not as a result of a blatant request for violent actions/attacks or flagrant demand for the use of weapons against perceived enemies or labelled opponents. Rather, it is such that uses a given narrative technique to recapitulate some past wars or battles considered to be significant part of the people's or the nation's historical antecedent. However, the vivid description of some wars in the anthems of some nations cannot but touch some people emotionally, make some to develop hatred for those behind the devastating wars or possibly make them feel like revenging if given the opportunity. The United States, Ireland, Qatar, Iraq and Ecuador are countries with anthems that represent allusion to wars or battles as indicated in the following lines of their respective anthems:

i. *Anthem of the United States (Stanza One, Three & Four)*

O'er the ramparts we watched, were so gallantly streaming? line 4/1
And the rockets' red glare, the bomb bursting in air, line 5/1
Gave proof through the night that our flag was still there line 6/1

ii. *Anthem of Benin Republic (Stanza One)*

Formerly, at her call, our ancestors line 1
Knew how to engage in mighty battles line 2
With strength, courage, ardor, and full of joy, but at the price of blood line 3

iii. *Anthem of Qatar (One Stanza Anthem)*

Qatar is the land of the fore fathers line 8
Our protectors at the time of war line 9
And hawks at the time of sacrifice line 11

iv. *Anthem of Ireland (Stanza Two)*

Our fathers fought before us, line 2
And conquered 'neath the same old flag line 3
We're children of a fighting race line 5

v. *Anthem of Iraq (Stanza One, Two & Three)*

This homeland is made of flame and splendor line 1/1
Babylon is inherent in us and Assyria is ours line 5/1
And it is we alone who possess the anger of the sword line 8/1
Advance, bringing terror, to a certain victory line 3/2

## VII. Sentence Function Description of the Linguistic Violence of National Anthems

The declarative, imperative, interrogative and exclamatory sentences are the four traditional functional types of sentences used in various ways to convey the ideas of the anthems identified as cases of linguistic violence. The declarative sentence makes an objective or subjective statement which usually starts with a capital letter and end with a full stop or period. An imperative sentence gives a directive or command which starts with a capital letter and ends with a full stop or an exclamation mark. The interrogative sentence asks a question therefore starting with capital letter and ending with a question mark. The exclamatory sentence conveys strong feeling of fear, shock, joy, pain or anger starting with a capital letter and ending with an exclamation mark. However, only the declarative, imperative and interrogative sentences are usually recognised as far as the grammatical moods of sentences are concerned. These three forms of sentences can be made exclamatory by ending them with exclamation marks. The different functional types of sentences of the expressions identified as cases of linguistic violence of anthems are shown below:

*a) Declarative Sentences of the Linguistic Violence of National Anthems*

There are a number of declarative sentences identified among the expressions of national anthems depicting linguistic violence used to convey certain information to the target audience of the anthems. These are exemplified in the following sentences of the anthems of Honduras, Belgium, France, Australia, Thailand, Turkey, Mali, Armenia, Turkmenistan, Poland, Norway, Ukraine, Algeria, Senegal, Albania and Romania:

To guide this sacred emblem, we shall, oh fatherland to our death
–Anthem of Honduras (Stanza 7 Line 1-2)

Our strength and the blood of our veins we offer, be our goal in work and
battle – Anthem of Belgium (Stanza 1 Line 3-4)

They are coming into our midst to cut the throats of your sons and cohorts
–Anthem of France (Stanza 1 Line 7-8)

We'll rouse to arms like sires of yore to guard our native strand
–Anthem of Australia (Stanza 1 Line 3-4)

All Thais are ready to give up every drop of blood for the nation's safety, freedom and progress
–Anthem of Thailand (Stanza 1 Line 9-10)

If you frown, our blood shed for you will not be worthy
–Anthem of Turkey (Stanza 3 Line 2)

If the enemy should show himself within or without on the ramparts, we are ready to stand and die
–Anthem of Mali (Stanza 1 Line 7-10)

Everyone dies only once but lucky is the one who is sacrificed for his nation
– Anthem of Armenia (Stanza 4 Line 2-4)

I am ready to give life for native hearth
–Anthem of Turkmenistan (Stanza 1 Line 5)

What the foe by force has seized sword in hand we'll gain –Anthem of Poland (Stanza 1 Line 3-4)

We also, when called upon, will strike a blow for its peace – Anthem of Norway (Stanza 3 Line 7-8)

We'll not spare either our souls or bodies to get freedom - -Anthem of Ukraine (Stanza 1 Line 5)

We swear by the lightening that destroys, by the stream of generous
blood being shed that we are in revolt, whether to live or die –Anthem of Algeria Stanza 1 Lines 1,2,3)

But if the enemy violates our frontiers, we will all be ready, weapons in our Hands
–Anthem of Senegal (Stanza 5 Line 1-2)

With arms in hand we shall remain, to guard our fatherland round about
–Anthem of Albania (Stanza 3 Line 1-2)

We'd rather die in battle, in elevated glory than to live again enslaved on our ancestral land
–Anthem of Romania (Stanza 1 Line 13-14)

*b) Imperative Sentences of the Linguistic Violence of National Anthems*

There are some sentences of the expressions of anthems of nations which expressly instruct the people addressed to take some violent steps or embark on some violent actions. Below are examples of such imperative sentences from the anthems of France, Algeria, Turkey, Cuba and Turkmenistan:

To arm citizens, form your battalion. March, march, let impure blood water our furrows
–Anthem of France (Chorus Line 1-5)

Listen to it and answer the call. Let it be written with the blood of martyrs and be read to future generation
–Anthem of Algeria (Stanza 4 Line 2-4)

Oh coy crescent do not frown for I am ready to sacrifice for you
–Anthem of Turkey (Stanza 2 Line 1)

Hasten to battle, men of Boyamo
–Anthem of Cuba (Stanza 1 Line 1)

Let my eyes go blind for any cruel look at you
–Anthem of Turkmenistan (Stanza 1Line 23)

*c) Exclamatory Sentences of the Linguistic Violence of National Anthems*

There are some sentences depicting linguistic violence of anthems which are used to convey some strong feelings evident in the exclamation marks that end the sentences. Examples of these are the following sentences from the anthems of Haiti, Cuba, China and Vietnam:

For the flag, for our country to die is a fine thing!
–Anthem of Haiti (Stanza 5 Line 1-3)

Hasten, brave ones, to battle!

–Anthem of Cuba (Chorus Line 4)

With our very flesh and blood let us build our new great wall!

–Anthem of China (Stanza 1 Line 2-3)

Ceaselessly for the people's cause we struggle, hastening to the battle field!

–Anthem of Vietnam (Stanza 1 Line 8-9)

*d) Interrogative Sentence of the Linguistic Violence of National Anthem*

There is just one anthem that uses an interrogative question in disseminating the idea identified as a case of linguistic violence of anthem. The only interrogative linguistic violence is in the anthem of Congo which obviously ends with a question mark though it is not expecting any answer from the target audience. The sentence is shown below:

And if we have to die, what does it really matter?

–Anthem of Congo(Chorus Line 1-2)

*e) Interpretation/Social Analysis of the Linguistic Violence of National Anthems*

Faircloughian critical discourse interpretation involves the utilization of vital facts relating to the process of text production and consumption /comprehension in the analysis of texts. It centres on the understanding of texts in the light of useful information about the composition of anthem texts. Three important parameters are considered in the interpretation of the identified linguistic violence of anthems of nations which are the produced/composed anthem texts, the context of anthem texts production and relationship with similar texts/discourses. It is against this background that the discussion of the interpretation or social analysis will involve critical textual interpretation, contextual interpretation and intertextual/interdiscursive interpretations of the linguistic violence of the affected countries' national anthems.

## VIII. Textual Interpretation/ Process Analysis of Linguistic Violence of National Anthems

It is obvious from the functional analysis of the sentences identified as depicting linguistic violence of national anthems that the expressions are predominantly declarative sentences. This is not surprising because such sentences are basically used to make categorical statements which are expected to be informative or informational in which case they are otherwise regarded as informative sentences. The declarative sentences therefore position the communicators as the informers who are in the possession of valuable facts used to justify or buttress the requests for violent acts in the various anthems. The imperative sentences are next to the declarative sentences in numerical representation of the expressions conveying linguistic violence of anthems. These are used by the communicators to expressly direct or instruct the target audience to embark on various violent actions based on some reasons given or implied. Unfortunately, there is no room for the immediate response of the audience as it is kind of mono-directional dialogue. The exclamatory sentences identified are equally declarative and imperative sentences based on their structural constituents while the only interrogative sentence is practically a rhetorical question that requires no direct answers.

One important narrative device used in the communication of the linguistic violence of identified countries anthems is what Norman Fairclough describes as manufacture of consent. This is evident in the way some anthem narrators or text producers communicate the violent ideas on behalf of everybody or in an all-inclusive way as if they already know the minds of the people and have got their mandates on these. This is evident in the use of 'we', 'our' and 'us' in wording some expressions of anthems of nations depicting linguistic violence like the expressions "We are ready to die", "We supply you with our blood", "We shall march to our death" and "Our strength and blood of vein we offer" of the anthems of Italy, UAE and Belgium respectively. Another technique employed in anthems to convey linguistic violence involves a kind personalised role-swopping via the use of the first person singular pronoun 'I' for personal commitment of the anthem reciters. This way, the anthem producers do not just speak on behalf of the audience but through the audience thereby eliciting strongly worded oath-like declarations from the anthem reciters. The expressions "I am ready to sacrifice myself for you" and "I am ready to give life for my native hearth" of the anthems of Turkey and Turkmenistan are good examples.

*a) Contextual Interpretation of the Linguistic Violence of National Anthems*

This is based on vital contextual information relating to the environment surrounding the production of the anthems or in respect of the utilization of the linguistic violence of the affected countries' national anthems. This can therefore be the situational contextual information (pertaining to relevant happenings), the temporal contextual information (pertaining to specific points in time) and spatial contextual information (pertaining to certain places). Many anthems were written before, during or after some wars or battles which is evident in their contents and extra textual facts relating to the various anthems. These war-motivating or battle-inspired anthems were composed to encourage participation in the wars or as result of the battles that took place respectively. This is in line with the basic CDA reciprocal position that discourse contents can influence societal happenings just as societal happenings can equally influence discourse contents. In a similar vein,

some anthems were written during or after some notable revolutions that some countries experienced in the course of their politico-economic metamorphosis just as some other anthems are reminiscent of their struggles for independence. The linguistic violence of some of the anthems is therefore reflective of the context of the production of the anthems viz the situation of things during these periods in those places.

The titles of the anthems of many nations clearly show that they are war- motivating or battle-inspired anthems. The anthem of Poland is otherwise called "Song of the Polish Legions" and was written originally to boost the morale of the Polish soldiers. The anthem of Vietnam written by Van Cao in 1944 is called "Song of Advancing Soldiers". The original version of the anthem of Ireland by Peadar Kearney adopted in 1907 is called "The soldiers Song". The timing of the composition of many anthems also speaks volume. The anthem of Turkey was written in 1923 to motivate the troop fighting the Turkish war of independence. The anthem of France by Joseph Pouget de Lisle was written during the French revolution wars. The anthem of Italy written by Goffredo Mameli in 1847 was officially adopted in 1946 after the 2nd world war. The anthem of Cuba was written by written in 1867 by Perucho Figueredo who took part in the battle of Boyamo where it was first performed. The anthem of China was written by Tan Han while in jail in 1939 and was adopted in 1949 during the Chinese civil war. The anthem of the United States 'The Star Spangled Banner' also recapitulates the 1812 Fort McHenry, Maryland war as written by Francis Scott Key who was there.

Some other anthems were inspired by the revolution or independence experience of the people. This is also evident in the title of some of these anthems while some are not so entitled but their timing equally speaks volume. The national anthem of Algeria is otherwise called "Hymn of Revolution". The anthem of Belgium was written by a young revolutionary, Alexandre Dechet in 1830 during the Belgian Revolution. Romanian anthem was composed by Andrei Muresanu during the Romanian Revolution of 1884. Justin Lherisson wrote the anthem that was adopted in 1904 in honour the Haitian revolution leader. The anthem of Albania is a freedom hymn from a poem composed by Alexsander Stavre Drenova officially adopted in 1912. The anthem of Republic of Congo written by Jacques Tondra and Georges Kibanghi was adopted upon independence in 1959. Alex Casimir-Dosseh composed the anthem of Togo that was equally adopted right from independence in 1960. The anthems of Djibouti and Turkmenistan were also officially adopted upon the independence of the countries.

*b) Intertextual Interpretation of the Linguistic Violence of National Anthems*

Intertextuality simply refers to the interrelationships of texts based on the fact that texts with discursive similitude usually have some levels or elements of linguistic or stylistic interconnections. This is a pointer to the fact that texts do not usually exist in isolation as new texts usually directly or indirectly draw insights from or build on ideas of existing texts. A critical examination of the identified anthems of nations especially those with cases of linguistic violence shows that the anthems are no exception as far as the concept of intertexuality is concerned. This is simply because a number the analysed anthems of nations with established cases of linguistic violence actually exhibit some lexico-semantic or syntactico-semantic similarity. This is in relation to the choice of words or construction of the expressions used to communicate the intended meanings of the violent ideas or messages of the affected anthems to the target audience or addressees.

The anthems of Turkey and Turkmenistan show some syntactico-semantic similitude depicting the concept of intertextuality in respect of some of the expressions of the anthems that have been identified as cases of linguistic violence. This is exemplified by the expressions "I am ready to sacrifice myself for you" and "I am ready to give life for the native hearth" in the anthems of Turkey and Turkmenistan. These two countries used to be one before Turkmenistan seceded and became independent and they share similar culture, language, history and religion which probably explain some ideological similarities reflected in the two anthems. The anthems of some nations without similar cultural, linguistic, historical or religious background as in the case of Turkey and Turkmenistan also exhibit syntactic cum semantic intertextuality. For example, the anthems of Italy and Mali have the expressions "We are ready to die" and "We are ready to stand and die" with the difference in just the phrase "to stand" inserted in the anthem of Mali.

## IX. Explanation/Social Analysis of the Linguistic Violence of National Anthems

The critical discourse social analysis or explanation of the linguistic violence of anthems aims at presenting the social dimension or societal perspective of the existence and persistence of the elements of linguistic violence of anthems of nations. It therefore accounts for the linguistic violence of anthems of nations from the view points of the predominant psychological inclination, cultural disposition, historical antecedent or political ideology of the people or society in question. It equally captures the perception of the people in relation to power relation, dominance or oppression and the resistance of obviously inimical

ideological stances. The critical discourse social analysis can be viewed from socio-psychological, socio-cultural, socio-historical, socio-political and socio-ideological perspectives.

From the socio-psychological perspective, it is obvious that the linguistic violence of anthems of many nations involves cognitive manipulation of the mind of the target audience. This is evident in the ironic and euphemistic wording of some expressions used to convey the violent ideas to make them sound pleasant so as to influence the minds/thoughts of the target audience towards them. The expressions "To die for the country is to live" and "For our country to die is a fine thing" of the anthems of Cuba and Haiti are good example of expressions aimed at cognitive manipulation of the audience. From the socio-cultural perspective, many of the anthems with linguistic violence were composed during struggles, revolutions, battles, or wars when the culture of violence was usually the order of the day among those who want to sustain oppression and those who want to resist suppression. However, many of present human societies are equally characterized by cultures of violence similar to those canvased in some anthems evident in incessant cases of assassinations and suicide bombings constantly reported in the mass media.

From the socio-historical perspective, it is obvious from textual and extra-textual accounts that societal historical antecedents or past experiences of the people were instrumental to the linguistic violence employed and violent ideas canvased in some countries' national anthems. It is in the light of this that many of the affected countries' anthems recapitulate some unpalatable historical accounts, like colonial oppression, for the justification and rationalisation of the violent positions marshalled in such anthems. Similarly, the linguistic violence of many anthems has socio-political dimension basically because humans are political beings living in politically motivated societies where politics has been described as war with words. The linguistic violence of some anthems of nations aims at actualizing the political emancipation of some oppressed governments by some oppressive governments. The prevalent socio-ideological stances of nations when the anthems were composed cannot be disconnected from the linguistic violence employed in some anthems which can be socio-political ideology, socio-religious ideology or socio-economic ideology. Socio-political ideologies like pro-nationalism, anti-neo-colonialism and fanatical patriotism were responsible for the Machiavellian violent approaches advocated in many of the anthems with the identified cases of linguistic violence.

## X. Conclusion and Recommendation

It is obvious from the outcome of the linguistic exploration cum explication of anthems that quite a number of these anthems have varying cases of linguistic violence. This is not unconnected with prevailing trends when the anthems were composed as some were to motivate struggles, battles, or wars while others were motivated by some struggles, battles or wars. However, the linguistic violence of anthems seems to be diametrically inconsistent with contemporary global trends especially now that there is a quest for long lasting global tranquillity and harmony aimed at making the whole wide world a peaceful haven for all and sundry. It is therefore paradoxical for nations, including frontline United Nations members, to be persistently clamouring for peace and condemning violence of all kinds when the contents of anthems that epitomize such nations, recited at important national and international for a, expressly propagate violence.

It is against this background that the linguistic overhaul of the anthems of nations with cases of linguistic violence is recommended as a panacea to the paradox of the contemporary quest for global peace and persistent linguistic violence of national anthems. This will facilitate a critical linguistic review of anthems of affected nations by experts such that promotes pacific language use as opposed to violent language use. This will also encourage the use of anthems to positively recapitulate the histories, cultures, politics, geographies, philosophies, ideologies and aspirations of nations. Anthems should equally be (re)subjected to national referenda to be sure they are still popular and acceptable to majority of citizens. Also, anthems of nations should be screened as a condition for (review of) membership by regional, continental and international organisations especially those established predominantly to champion peace causes so as to address the dissonance of the present quest for global peace and the blatant propagation of violence in the anthems of nations.

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# Hierarchical Monitoring and School Supervision for Quality Assurance in Jangalmahal, West Bengal: A Development Agenda through Sarva Shiksha Abhiyan

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*Abstract-* Hierarchical Monitoring and Quality Assurance in education are the major issues for the nations of the developing world. Consequently a spurt is seen in endeavors to promote quality in education through differed means and mechanism. School supervision is seen as an effective mechanism for quality assurance in the schools as is evident from the roles assigned to the supervising officers. However, the supervisory functions to be performed by the education officers are found to be impeded by several factors that should be redressed to make school supervision contributory to quality improvement endeavors. The present paper discusses the variegated roles of school supervisors to establish the complexity of their roles. Consequently, it presents a review of the major impediments that prevents school supervision from achieving its goal of enhancing school performance in Jangalmahal, West Bengal.

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Mrityunjoy Jana [α], Ansar Khan [σ] & Soumendu Chatterjee [ρ]

*Abstract* - Hierarchical Monitoring and Quality Assurance in education are the major issues for the nations of the developing world. Consequently a spurt is seen in endeavors to promote quality in education through differed means and mechanism. School supervision is seen as an effective mechanism for quality assurance in the schools as is evident from the roles assigned to the supervising officers. However, the supervisory functions to be performed by the education officers are found to be impeded by several factors that should be redressed to make school supervision contributory to quality improvement endeavors. The present paper discusses the variegated roles of school supervisors to establish the complexity of their roles. Consequently, it presents a review of the major impediments that prevents school supervision from achieving its goal of enhancing school performance in Jangalmahal, West Bengal.

## I. Introduction

Adequate, rigorous, inclusive and continuous monitoring and supervision are one of the most important keys to successful implementation of any educational programme. The same is true for Sarva Shiksha Abhiyan (SSA), which aims at providing useful and relevant elementary education to all children in the age group of 6-14 years. It is an effort to universalize quality Elementary Education for all children by 2010 in a mission mode. The National Curriculum Framework 2005 has strongly articulated the need for a substantial improvement in the quality of education.

Access to and qualities in education are two main objectives of all major educational policies of different governments since independence (*Bude, U., Coombe, Ñ., Muwowo, Â., & Nashire, N., 1995*) However, the last three decades have witnessed a shift in focus from issues related to educational expansion to a focus on quality in education. This shift is an obvious reaction to a decline seen in the performance of the schools lagging far behind the rate of expansion of the schools (*Christ, I., 1995*). It was felt that merely expanding the system and injecting more resources into the system could hardly meet the goals of education and fulfill the national aspirations. Rather, the more fundamental issues are those related to the use of these resources at school level, in a way that enhances performance. Consequently, a simultaneous shift is observable in the conception of school supervision. Supervision when interpreted in the context of quality in education connotes a mechanism of improvement rather than as a means to exercise control (*Govinda, R. & Varghese, N.V., 1993*). New dimensions are added to the process of school supervision and its relationship with in-school actors that are now seen as of great significance in assuring quality in education. The formative aspects of supervision are highlighted as substantiation of its salience to ensure quality in education. The sections that follow provide a brief sketch of the meaning assigned to supervision in contemporary era to establish its relationship with quality in education. Consequently outlines of major roles of the education officers are discussed. Finally the major problems that impede the utilization of supervision functions in improving performance of schools are highlighted.

## II. Quality Issue and School Supervision

The global initiative for educational expansion has already treaded its path over a long period of time. However, studies conducted globally with special focus on quality in terms of students' performance reveals a declining status of the educational microsystems viz. the school, in developing nations with respect to achievement of the goals leading to a growing concern over quality of the educational micro-systems the basic unit of expansion (*Gray, J. & Wilcox, B., 1994*).. Deliberations over the quality issue within the educational micro-system in terms of its performance, essentially centers around three significant aspects that determine the quality of the micro-system in a cumulative way. The significant aspects are: (i) the material (infrastructure and equipments) and human (learners, teachers and institutional heads) resources (ii)

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the relationships within school, between the school and the community, and between the school and the administrative level immediately above the school and (iii) the daily interaction between teachers and learners that are the direct determinants of performance of a school. Further, the performances of the school through the teacher student interactions are mediated by both the resource as well as the relationship factors. The issue of educational expansion had its focus on the resource factors thus facilitating access to education *(Hopes, Ñ., 1992)*. However, pumping in of resources within the educational system is essential to take care of the access issue. The relevance and hence quality issue need attention toward the other two aspects as well. School supervision emanates out of the relationships of the educational micro-system with the administrative level above the school level in the overall educational macro-system and is thus an important component of the relationship aspects of the educational micro-system. As such school supervision has a mediating impact on quality in the micro-system. The quality concern thus leads to concern with how the input factors are organized and managed rather than on the strength of the resources provided (*Lillis, K. M., 1992*). Since school supervision is related to ensuring organization and management of the resources and is a major element of the factors determining quality, it has emerged as an important phenomena attracting serious discussions and providing a largely unexplored area for empirical investigations with the aim to make it more effective and efficient.

The origin of school supervision could be traced back to Wood's dispatch of 1854 when the fundamental aim of bringing into existence the very concept of school inspection was to exercise authority and control *(NUEPA, 1991-2001)*. The aim of control reflects the traditional sense of supervision more commonly referred to as inspection. Supervision, then in its traditional sense refers to overseeing by someone the work of other personnel. Thus ipso facto every administrator is a supervisor. However such a conception of supervision presents a narrower vision limiting it to control and evaluation of resources and personnel that could hardly satisfy the developmental and formative needs of the complex and dynamic educational micro-system requiring continuous change and modification under expert guidance and control in a systematic, effective and efficient way, to sustain its relevance and vitality. In other words, to ensure quality in the educational micro-system it is necessary that there exists mechanism for effective guidance along with good teaching.

Consequently, the authoritarian conception of supervision with a focus on control has given way to a democratic conception of supervision with a focus on human relations and cooperative efforts of administrative personnel, teachers and headmasters, to enhance quality (*Tyagi, 2011*). The democratic perspective on supervision led to a conception of supervision as a service aimed at the improvement of the academic aspects of school, the existence of which, in almost all nations and at central, regional and local levels substantiate sits significance as a quality improvement mechanism. Supervision as a service functions both to control as well as to support the schools from outside through regular visits by the officers endowed with the task. As a service it serves a two-fold purpose (*Olivera, C. E., 1979*). Whereas on the one hand it serves to "interpret to teachers and the public the education policies of the authorities and modern educational ideas and methods", on the other hand it also serves to "interpret to the competent authorities the experiences, needs, and aspirations of teachers and local communities (*Pauvert, 1987, p. 48*). Educational supervision thus catalyzes quality assurance programs by shaping, supporting, operating and controlling the educational micro-system thereby deciding the quality of education to a very great degree.

The Sarva Shiksha Abhiyan (SSA) also emphasizes the significance of quality education and suggests various parameters to be addressed in State and district plans to achieve the desired goal. The quality dimensions for elementary education have broadly been identified as in Figure 1.

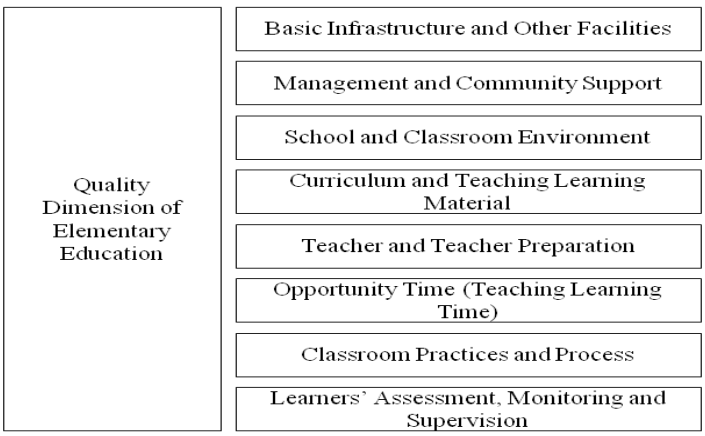


*Figure 1 :* Quality dimensions for elementary education

In order to be continuously informed about the parameters and issues related to quality elementary education, both at the classroom level as well as at the systematic functioning level, some monitoring systems had to be put in place. A strong need was felt for periodic monitoring and regular feedback at elementary levels within and outside the classrooms. The Sarva Shiksha Abhiyan emphasizes a holistic and comprehensive approach and suggests community-based monitoring system and also encourages developing partnerships between communities and research institutions for effective monitoring. In SSA, Monitoring in a broader sense has been defined as a continuous assessment of progress, diagnosis of strengths and weaknesses and provision for remedial and corrective measures. Therefore, continuous and comprehensive monitoring and subsequent learning from one's own and others' experiences is crucial for effective implementation of plans and programmes. The main indicators of the quality of elementary education can be visualized in terms of preparation, classroom processes and learners' achievements (*Singhal, R.P., Bhagia, N.M., Kalpande, V.A. & Nair, T.K.D.,1986*). The monitoring and supervision of the aspects, which are easily quantifiable, have generally received the attention of the planners, implementers and supervisors. Monitoring of quality dimensions, especially of learning and learning conditions of every child, has perhaps not received the required attention probably because these are a difficult terrain to pursue. However, in assessing the progress of the child, one of the main indicators has been the assessment of the child's learning in the classroom rather than qualitative classroom processes. Moreover, the progress of the child in terms of acquisition of knowledge and skill development needs to be followed systematically.

There are tools and mechanisms available for the monitoring of other quantifiable and data specific aspects but not so much for the quality aspects of education (*Perier, P., 1995*). The field experiences and relevant data have shown that there has been considerable progress in access, enrolment and retention of children but quality issues still need to be addressed and monitored. Therefore, it is necessary that a concerted effort be made to build upon past experiences and focus on systematic monitoring of the aspects relating to school effectiveness especially on meaningful learning by every child. There is hardly any standardized tool to assess the key indicators on quality aspects. Some commendable but sporadic efforts have been made by some States in this area, which proved to be a useful base for evolving the indicators for these dimensions. The Ministry of Human Resource Development (MHRD), Govt. of India has endeavored to put into place a massive programme of monitoring and supervision under SSA. The NCERT was assigned the task of developing the monitoring formats for quality dimensions based upon broad consultations.

Support from the schools (including teachers and headmasters), administrative authorities above them in hierarchy and the support from the community that serves as context for the supervision services are essentially justified owing to the nature of the supervision functions that includes variety of tasks. Similarly the education officers have to identify resources required by the schools, initiatives to be taken for curricular and instructional improvement etc. and report the same to their immediate authorities and seek support from them. Thus co-operation from their immediate authorities are essential in making them efficiently discharge their responsibilities. The actual situation is however quite disheartening where it has been reported that even those educational supervisors who work hard with teachers and head teachers seldom get positive response from them.

## III. Study Area

The western part of South Bengal including a major part of West Midnapore, Bankura and Purulia D istrict is now literary marked as „Jangalmahal". The name says that the major part of this region is covered by forest or jungle and now days the socio economically backward region is strongly Maoist affected. Among the twenty seven blocks of West Midnapore District twenty are extremely Maoist influenced (i.e. Jhargram, Jamboni, Lalgarh , Belpahari, Sankrail etc). A major part of Purulia District also exists under Jangalmahl. Among the twenty one blocks twelve are found in increasing Maoist activities (i.e. Manbazar, Arsha, Ragunathpur, Banduan, Balarampur and Baghmundi etc). Now a days the Maoist activity is gradually increasing at the remote blocks of Bankura District which are mainly located in the Southern part of the district ( i.e. Ranibandh, Raipur I & II and Simlapal etc).

## IV. Selection and Development of Formats

Based on the above dimensions in **Figure 1.** that have been proposed, the following monitoring levels have been proposed.

i. School/Community Level
ii. Cluster Level
iii. Block Level
iv. District Level

## V. Process of Development of Formats

Initially, a set of 59 draft monitoring tools (formats) were developed by the Department of Elementary Education, NCERT, keeping in view the following critical issues:

- What should be the key indicators for each of the quality dimension of Elementary Education, which require regular monitoring and supervision?
- What type of formats should be developed to monitor quality indicators for each dimension?
- What procedures should be adopted to try out and validate the tools/formats in order to assess the feasibility and practicability in the system?
- What should be the modalities of disseminating these tools for wider use in the system?

In order to address these issues more meaningfully, the draft formats along with identified indicators were prepared and discussed in details with the representatives of NIEPA, MHRD, TSG, Ed.CIL in the meetings organized at NCERT and NIEPA.

## VI. Description of the Formats

Monitoring under Sarva Shiksha Abhiyan Programme has been envisaged as a multi-tiered one: monitoring at the school/ community level, at the cluster level, at the block level, at the district level, at the State level and at the National level. This necessitates development of a proper monitoring mechanism at various levels i.e. school level/ community level, cluster level, block level, district level, State level and the National level for a functional self-sustained feedback system. For this, there is a need to have an effective monitoring system through which not only the progress of the programme can be analyzed but also timely corrective measures can be undertaken. The levels for monitoring and feedback mechanisms have been envisaged in **Figure 2.**

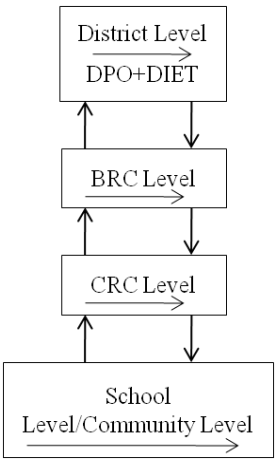


*Figure 2 :* Information flow systems in the quality monitoring tools (linkages with DIETs and DPO)

It is expected that the information collected at the school level and the information collected by community-based organizations will be consolidated and analyzed by the Cluster Resource Center Coordinator. However, every teacher will also analyze the quarterly data on learners' achievement, to reflect on her own students' learning and performance. CRC Coordinator will collate attendance and achievement data for the entire cluster and will analyze it to identify the trends and various needs. However, CRC Coordinator's direct engagement will be through classroom observations and their quantitative and qualitative analysis. CRC Coordinator, along with his/ her analysis will send data on attendance and learners' assessment to BRC Coordinator. At the block level, BRC Coordinator is expected to go through the analysis and information sent by CRC Coordinator and also will collect some information at his/ her own level. It is important to mention that the BRC Coordinator will collect the required information himself/ herself and not through CRC Coordinator. There are certain items on which BRC Coordinator has to report, which do not figure in CRC Coordinator's formats. For example, data on teacher appointment, etc. The reason behind this segregation is that BRC Coordinator plays an important role in ensuring teacher appointment.

BRC Coordinator will send all the data and the information to District Project Office as well as to the respective DIET (District Institute of Education and Training). It is envisaged that the team in District Project Office will reflect on the information and collate information coming from different blocks, before sending it to State Project Office and SCERT. DPO will send the data on attendance, learners' assessment and other items. The monitoring formats filled by the BRC Coordinators should be sent to the DIETs who should analyze the specific achievements and shortfalls for areas mentioned at No. 4 (curriculum and teaching learning materials, No. 5 (teacher and teacher preparation), No. 6 (classroom practices and processes), and No. 8 (learners' evaluation, monitoring and supervision) on pages 3 and 4 and prepare their assessment and remedial plan for their districts. The DIET should send their comments to the DPO after analysis who will then consolidate the information and forward it to the State Project Office. The DIET Principals

should also send their comments to the Director, SCERT for State-wise review and consolidation. The DPOs, BRC and CRC Coordinators should take into account the areas identified by DIET faculty members, which, require attention while planning in-service training of teachers and finalize it in consultation with DIETs. The State with the help of SCERT will consolidate learners' assessment data for every quarter. The State Office will also reflect on information about enrolment and actual attendance of children in schools but will not send it to the National Level. DIETs and SCERTs should own the responsibility for improving the areas mentioned at curriculum and teaching learning materials, teacher and teacher preparation, classroom practices and processes, opportunity time-teaching learning time and learners' evaluation, monitoring and supervision. In-service teacher training plan in the Annual Work Plan and Budget (AWPB) should un-ambiguously state the role to be played by BRCCs, CRCCs, DIETs and SCERTs in the process as also the resource support, which may be required by the DIETs and SCERTs to discharge their functions effectively.

The major quality dimensions for improving quality of elementary education covered under these formats are:

1. Children's Attendance
2. Community Support and Participation
3. Teacher and Teacher Preparation
4. Curriculum and Teaching Learning Materials
5. Classroom Practices and Processes
6. Learners' Assessment, Monitoring and Supervision

*Table 1 :* The consolidated picture of formats for monitoring quality dimensions at various levels

| Levels | Attendance | Community/ VEC Support | Teacher Preparation, TLM & T-L Processes | Learners' Assessment | Total |
|---|---|---|---|---|---|
| School Level | 1 Quarterly | 1 Annually | - | 1 Quarterly | 3 |
| CRC | 1 Quarterly | - | 1 Quarterly | 1 Quarterly | 3 + 1 Analytical Sheet |
| BRC | 1 Quarterly | - | 1 Quarterly | 1 Quarterly | 3 + 1 Analytical Sheet |
| District | 1 Quarterly | - | 1 Quarterly | 1 Quarterly | 3 + 1 Analytical Sheet |
| Total | 4 | 1 | 3 | 4 | 12+3 **Analytical Sheets** |

The information will be collected for three quarters in an academic year. The details are as following in **Table 2**.

*Table 2 :* Information collection time for three quarters in an academic year

| Quarter | Month Covered | To be Submitted in the Month |
|---|---|---|
| Quarter-I | January-March | May |
| Quarter-II | June/July-September | November |
| Quarter-III | October-December | February |

If any State follows a different pattern in arranging an academic year, then it is free to accommodate the plan accordingly.

## VII. Linkages with SCERTs and DIETs in Quality Monitoring and Supervision Under SSA

The existing quality monitoring tools, envisage a close partnership of DPOs and SPOs with DIETs and SCERTs, respectively. The tools ultimately seek to rejuvenate the academic resource support structures at the block and district levels, for improvement in classroom processes and pupil achievement levels. The tools also seek to monitor the provisions of quality-related inputs under SSA, like training of teachers, availability and usage of TLMs, availability of textbooks, functioning of academic support groups DRGs, BRGs, CRGs, etc. Following items, already existing in the monitoring tools, seek to encourage BRCs, DPOs and SPOs in collaborating with DIETs and SCERTs:

- In the BRC Coordinators' Analytical Sheet, BRCCs are expected to inform the DPO about key requirements from the concerned DIET, for the next quarter, with reasons.
- In the District Level Analytical Sheet, the DPO is expected to inform the SPO about how often DPO/ DIET officials hold coordination meetings for activities under SSA. They are expected to give details of problem areas, if any.
- The SPO is expected to inform whether the DIETs and DPOs in the State are working in coordination and what steps are being taken in the State to ensure this.

## VIII. Suggestions for Collaboration with DIETs

a) DIETs can play an important role in training the cluster resource coordinators in using the classroom observation formats effectively. These formats require CRCCs to understand key pedagogical issues like the teachers' methods of introducing lessons (whether teacher-centered or learners-centered), diagnosis and remediation, pupil assessment methods, detection of hard spots, etc. This observation format forms the basis on which other cluster level formats like CLF-II (b) on teaching learning materials and equipments and CLF-II (c) on teaching learning processes (Pedagogy) are to be filled by CRCCs.

b) In the District Level Analytical Sheet, 20% primary schools and 10% upper primary schools showing consistently poor learner achievement levels for the last two quarters are being identified by the DPO. DIETs can play an important role in undertaking action research for identification of reasons and design of interventions for improvement in pupil performance over a defined time frame.

c) DIETs should also organize training programmes for teachers identified through classroom observations, who are having problems in teaching specific subjects.

## IX. Suggestions for Collaboration with Scert

a) Pupil achievement levels constitute the key outcome indicators under SSA. The NCERT monitoring tools will furnish quarterly data on pupil achievement levels at every grade in every subject at the elementary stage. SCERTs must assist SPOs in analyzing the pupil achievement data and in instituting remedial/ extended learning measures for students, wherever needed (as is being done in Maharashtra for example). SCERTs can work with SPOs in devising strategies for enhancement of pupil achievement levels based on the analysis of achievement data that will be available on a quarterly basis.

b) SCERTs can collaborate with SPOs to develop school performance monitoring indices and also independent assessment of pupil achievement (like SCERT, Gujarat is doing through the GAP surveys).

c) SCERTs can help SPOs in organizing Annual State Level Achievement surveys. The National achievement surveys conducted by NCERT do not provide information for every district. Also, these surveys are based on common elements of the syllabi of various States. In the State level surveys, tests based on specific syllabi of States can be developed.

d) SPOs can arrange quarterly meetings with SCERTs and all DIETs, to reflect upon the information thrown up by the quality monitoring tools, and draw an action plan to address the key issues that have emerged in the last quarter. SPOs and SCERTs should jointly monitor the implementation of the quality improvement plan, on a monthly basis.

## X. Present State of Affairs of Jangalmahal

With the state government planning a slew of projects for Jangalmahal, education in the area is all set to get a boost. School education secretary Vikram Sen met chief secretary Samar Ghosh and held a video-conference with district magistrates to discuss the status of the proposed projects.

Jangalmahal will soon receive a bag of goodies from the state government. School education secretary Vikram Sen met with chief secretary Samar Ghosh and video-conference with district magistrates to discuss the progress of proposed projects in the area.

Thirty-four girls' hostels, to be set up in Paschim Medinipur, Bankura and Purulia, have been sanctioned by the government. PWD in its review meeting on Saturday has assured the government that the buildings will be completed in due time. The 34 girls' hostels which will be set up in West Midnapore, Bankura and Purulia have been sanctioned by the government. PWD in its review on Saturday's meeting has assured the government to complete the buildings within in due time. Each hostel will provide an accommodation to 50 girls in each school. Provide 50 accommodations to the girls in each school. Though initially there was a problem with the earmarked site in Purulia, the problem has been resolved.

Nearly 1,200 Santhali-speaking Para-teachers will be provided jobs from Jangalmahal as well. The criterion will be 50% score in higher secondary examinations while for SC/ST candidates there is a 5% relaxation.

The state government has also decided to upgrade 126 schools in Jangalmahal from Madhyamik to higher secondary classes. Subject to approval of the cabinet, and will employ three teachers in each school through School Service Commission (SSC) for classes XI and XII. There will be more opportunity for science teachers.

Information for the region is that the planning commission has sanctioned to set up 80 more hostels to be set up in Jangalmahal. The funds will be provided through Backward Region Development Funds. The tender will be floated and constructions will be completed within next 2015.

Another proposal from the state government which has received a nod from the Centre is the setting up of fully integrated schools in 23 blocks in three districts of Jangalmahal.

All the schools (Class I to XII) will be run by the government and will offer hostels to the students. PWD will soon start work.

## XI. Conclusion

Hierarchical monitoring and school supervision for quality assurance is justified as a mechanism to insure the growth of the educational micro-system in general and of the human input factors in particular. It acts as a process of linking the teachers' previous preparation to their actual professional context. It also serves as a mechanism to possibly keep the education workers abreast of current developments and providing creative suggestions informed by analyses. Logically, hierarchical monitoring and school supervision for quality assurance aims at improving curriculum and instruction thus reflect the support functions of supervision. Supervision when conceived as a control and support service has the immense potential to enhance quality of education provided that the mandated functions of supervision are implemented effectively. However, supervision, like any other profession, is influenced by several problems or an impediment that prevents it in achieving the stipulated goals. The impeding factors includes both internal as well as external factors that together determine the extent of overlap between what the officers perform and what are expected of them. A considerable decline has, however, been observed in external supervision practices by educational administrators. More specifically the academic supervision, that has a direct bearing on improvement in the teaching-learning practices and the overall quality of school, has been subdued by the importance given to the control functions. Thus, there is need to rethink the supervisory systems and procedures need to be rethought so that they respond to the quality concerns of school education. Specific attentions need to be given to the problems of supervision if it is to be used as a quality improvement tool like, hierarchical monitoring. Improvement in hierarchical monitoring of school and needs concerted effort. There is need of rich empirical data regarding the roles of education officers and the hurdles as perceived by them to improve their working conditions, delimit their roles and thus make them more efficient and effective.

Development of such a data base needs committed research into the area. On the other hand the training program to professionally develop the education officers is a dire need of the time. Since the professional contexts of the education officers are variegated, there is a justified need to train them to improve professionally through reflective practices. Thus they are required to become an action researcher if they are to meaningfully contribute to the larger goal of assuring quality in education in their own capacity. Finally, there exists a lack of sufficient research inquiry into the status of supervisory and hierarchical monitoring functions in Jangalmahal context and specifically in context of the backward areas. There is a justified need to investigate into the status of supervision functions specifically at the block level, with respect to their mandated functions and at the same time to identify the problems faced by the block level education officers in their endeavor to discharge their responsibilities. Future studies related to Hierarchical monitoring and school supervision for quality assurance and its different aspects are expected to surely help in the improvement of supervision functions and insure its role in quality improvement of the schools.

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# Evaluating Science Laboratory Classroom Learning Environment in Osun State of Nigeria for National Development

By Akinbobola, Akinyemi Olufunminiyi
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*Abstract-* The study evaluates the science classroom learning environment in Osun State of Nigeria. Stratified random sampling technique was used to select students from the eight (8) educational zone in Osun State. A total of 24 science teachers and 200 science students were used for the study. Ex-post facto design was adopted for the study. Science Achievement Test (SAT) with reliability coefficient of 0.84 using Kuder Richardson-21 and Science Laboratory Environment Inventory (SLEI) with a reliability coefficient of 0.87 using Cronbach alpha were the two instruments used for gathering data. Pearson Product Moment Correlation (PPMC) and t-test were used to analyze the data. The results showed that the science laboratory environment has a significant effect on students' academic achievement in science. Also, there is a significant difference between students' preferred and actual laboratory environments in terms of students' cohesiveness, open-endedness, integration, rule clarity and material environments. The results also indicated that there is no significant difference in the way students and teachers perceived the same laboratory environment. It is recommended that students should be given the opportunity to work cooperatively, provided with frequent laboratory activities which are integrated with the regular science class sessions and be encouraged to be creative by allowing occasionally to pursue their own science interests and design their own experiments. Also, standard laboratory spaces should be provided in schools with materials and equipment needed for the laboratory activities.

*Keywords:* *science laboratory, learning environment, students' achievement.*

*GJHSS-G Classification :* *FOR Code: 139999*

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## I. Introduction

Laboratory work is an integral part of most science courses and offers an environment different in many ways from that of traditional classroom setting. A good laboratory environment promotes students' curiosity, rewards creativity, encourages a spirit of healthy questioning, avoids dogmatism, and promotes meaningful understanding, where wait-time is essential in promoting thoughtful responses and dialog.

A good science classroom welcomes all students and strives to enable all motivated students to be successful.

According to Akinbobola and Afolabi (2010), a productive laboratory environment is a student-centered classroom, which is interactive, comfortable, and collaborative learning is encouraged. NABT (1994) sees a laboratory learning environment as a place where students work individually, or in a small group to solve a problem. The students make use of scientific processes and materials to construct their own explanation of scientific phenomena. They make use of science process skills such as observation, collection and interpretation of data during scientific process. The distinction between laboratory learning and traditional classroom learning according to NABT (1994), is that in laboratory learning, activities are learner-centred, with students actively engaged in a hands-on and minds-on activities using laboratory materials and techniques.

In its broad sense, the science laboratory has no boundaries. It encompasses every environment in which nature may be observed and investigated whether in the field or within the equipped classroom. The focal point for teaching science as investigative or inquiry is found in the laboratory. Through experiences in the laboratory, the student can find opportunities to verify basic scientific concepts for himself. These experiences can lead to a greater insight into the meaning of science and the nature and procedure of science in general.

The teaching laboratory involves both an illustrative and investigative function (Akinbobola, 2011a). The illustrative function has been emphasized in past science curriculum. Today, it is recognized that a static laboratory programme in which the student is told the answers to a series of recipe-type activities is not conducive and stimulating to the spirit of inquiry. Rather, if the student is to gain an understanding of the nature of science as a process of inquiry, he must actively participate in investigations of problems to which he knows no answers. The investigations may or may not lead the learner to correct answers, but in learning to ask relevant questions to seek reliable information, design effective experiences and to interpret data efficiently and honestly, the student will gain an insight into the nature of science. With problems or questions posed as the basis for an investigation, and with no answers given the student is faced with an unknown, and the path is open for a personal discovery (Akinbobola & Afolabi, 2009).

Methods found reliable and successful by scientists of historical importance may be studied and

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followed, or the student may follow his own creative imagination and strike out on an entirely new original approach to a problem-solving situation (Akinbobola & Ikitde 2011). According to Afolabi and Akinbobola (2012), conducting scientific discovery requires that students have easy equitable and frequent opportunities to use a wider range of materials, equipment, supplies and other resources for experimentation and direct investigation of phenomena. Therefore, schools must make every attempt to ensure that facilities are well equipped and maintained to ensure safe and effective learning environment.

Science classroom/laboratories should therefore be designed with the following goals in mind.

- Technology is integrated into the space for use by teachers and students.
- Furniture and utilities promote access by all.
- Adequate supplies, instruments, equipment and secure space to store these items is available in science laboratories.
- Facilities, support team teaching and integrated curricular activities.
- Laboratory and outdoor space is available for investigations, demonstrations and research.
- Facilities, materials and equipment provide a wide selection of experiences and opportunities for varied interests, capabilities, and learning styles of all students.
- Capable of supporting all of the objectives of the science program (Akinbobola, 2011b).

The proper teaching of science in particular calls for theoretical explanation and demonstrations by the teacher, enriched by questions and answers, as well as practical work by students. This in turns call for a space modification to accommodate all these activities (Ikitde, 2011). At the senior secondary level in Nigeria, two different spaces are provided; one for theoretical presentation and the second one for demonstration and students' practical work. Akinbobola (2007) suggests that the same space can be used for lectures and for practical work. In the case of rural locations, where services such as water, electricity and source of heat are not readily available, they can improvised by bringing water in buckets, electricity can be supplied from batteries or portable generators, while heat can be obtained from spirit-lamps or small stoves. Apart from being cheap and cost saving, it helps the conceptual unification of theoretical explanations and practical works.

The propositions are more advantageous at the junior secondary school level in Nigeria for teaching integrated science. However, the suggestion raises a major problem in the teaching of science subjects in senior secondary school level. For example; how easy is it for a classroom to be arranged and re-arranged for theoretical lessons and practical work which are often two separate activities? The central problem raises many other difficulties connected with time-saving, convenience of staff and students, as well as the safety of human and material resources.

Setting up a laboratory that utilizes the maximum of students' participation in the inquiry process holds the greatest impact of modern science teaching (Adesoji & Ibrahim, 2009). Science is accumulating a vest quantify of knowledge that grows at an alarming rate. All of science cannot be taught in a year. The inquiry approach necessitates less diversification of subject matter and more depth in investigation of specific scientific problems (Adesoji, 2008). The investigatory laboratory provides the modern science teacher with an opportunity to stimulate and guide the students into patterns that a scientist might employ in making a similar investigation. While some of the planning, organization, techniques and equipment may differ from the methods followed by a working scientist, the teacher can find in the investigatory laboratory a dynamic setting for teaching science as inquiry (Green, Elliot & Cummins, 2004).

The various dimensions of science laboratory environment as perceived by the students and the actual laboratory environment include student cohesiveness, open-endedness, integration, rule clarity and material environment (Fisher & Fraser, 1983). Student cohesiveness is the extent to which students know, help and are supportive of one another. Open-endedness is the extent to which the laboratory activities emphasize an open-ended, divergent approach to experimentation. Integration is the extent to which the laboratory activities are integrated with non-laboratory and theory classes. Rule clarity is the extent to which behaviour in the laboratory is guided by formal rules while material environment is the extent to which the laboratory equipment and materials are adequate (Fraser, Giddings & McRobbie, 1993).

## II. Statement of the Problem

In spite of all the advantages and the recognition given to science subjects as the pivot for technological and economic development of a nation, the laboratory learning environment in which the science subjects suppose to be learnt seems not to be conductive for effective teaching and learning process. This has led to the perception of students that science is a difficult subject. This perception of students has affected learners' interest and led to declining rate of students' achievement in science subjects in Senior Secondary School Certificate Examinations (SSSCE) conducted by West African Examinations Council (WAEC) and National Examinations Council (NECO) in Nigeria (Akinbobola, 2011b). Hence, does the science laboratory learning environment affect students' achievement in science? What difference exists between

the preferred and actual science laboratory environment as perceived by students? Do the perception of students and teachers about science laboratory environment similar? These are the questions that seek answers in this study.

## III. Purpose of the Study

The purpose of the study is to evaluate science classroom learning environment in Osun State of Nigeria for national development. Specifically, the study is designed to achievement the following objectives:

1. To examine the effect of science laboratory environment on students' achievement in science.
2. To ascertain the difference between preferred and actual science laboratory environment as perceived by students.
3. To find out the perception of students and teachers in the same laboratory environment.

## IV. Hypotheses

*Ho1:* Science laboratory environment has no significant effect on students' academic achievement in science subject.

*Ho2:* There is no significant difference between students' perceived and actual science laboratory environment in terms of student cohesiveness, open-endedness, integration, rule clarity and material environment.

*Ho3:* There is no significant difference between the perception of students and teachers about the same science laboratory environment.

## V. Research Method

Ex-post facto design was adopted for the study. The population for the study comprised of all the 650 senior secondary two (SS2) science students in the selected schools in the eight (8) educational zones in Osun State of Nigeria. Stratified random sampling technique was used to select schools from educational zone. Twenty-five (25) students and three (3) teachers were randomly selected from each school. A total of 24 science teachers and 200 science students were used for the study. Science Achievement Test (SAT) and Science Laboratory environment Inventory (SLEI) were the instruments used to gather data for this study. The SLEI was adopted from Fraser, Giddings and Mc Robbie (1993) and consisted of 35 structured items with five (5) options namely very often, often, sometimes, seldom and never with a rating scale ranging from 5 to 1. The items measured five different dimensions of laboratory environment namely student cohesiveness, open-endedness, integration, rule clarity and material environment.

The three types of SLEI that were used in the study include SLEI-A, SLEI-P and SLIE-T. SLIE-A is designed to measure the actual environment. SLEI-P is designed to measure preferred environment while SLEI-T is designed to measure the teachers' assessment of the laboratory environment. Although, the wording of the item is similar for the three types, but the statement clearly instruct students what the laboratory is actually like or what they would like it to be. For example, an item such as "I interact very well with other students during practical activities in the laboratory" in the actual form is changed to "I would interact very well with other students during practical activities in the laboratory" in the preferred form.

The SAT consisted of 45 multiple-choice items. Fifteen (15) questions were drawn from each of physics, chemistry and biology by the researchers using the curriculum meant for the current term. Each item had four options with only one correct answer and the correct answer was scored 2 marks. The validation of the instruments were ascertained by six science educators, two from each subject and the instruments were trial tested with 40 students in a school that was not used for the main study. The data obtained from SAT were subjected to Kuder Richardson formular-21 and the result showed a reliability coefficient of 0.84. The data collected from SLEI were subjected to Cronbach alpha and the result showed reliability coefficient of 0.87. The SAT and SLEI were administered to all the subjects. The data collected were analyzed using Pearson Product Moment Correlation (PPMC) and t-test. All the hypotheses were tested at. 05 level of significance.

## VI. Results

### a) Hypothesis One

Science laboratory environment has no significant effect on students' academic achievement in science subjects.

The analysis is as shown in Table 1.

*Table 1:* Analysis of the effect of laboratory environment in student' Academic achievement

| Variable | N | ΣX, ΣY | $\Sigma X^2$, $\Sigma Y^2$ | ΣXY | r | DF | t-cal. | t-crit. | Decision |
|---|---|---|---|---|---|---|---|---|---|
| Laboratory Environment(x) | 200 | 13986 | 1009492 | 1039861 | 0.96 | 198 | 48.25 | 1.96 | * |
| Academic Achievement (Y) | 200 | 14424 | 1073960 | | | | | | |

** = Significant at p<.05*

The analysis in Table 1 shows that the calculated t-value of 48.25 is greater than the critical t-value of 1.96 at p<.05 alpha level. Therefore, the null hypothesis which stated that science laboratory

environment has no significant effect on students' academic achievement in science subject is rejected. This implies that science laboratory environment has significant effect on students' academic achievement in science subjects.

*b) Hypothesis Two*

There is no significant difference between students' preferred and actual science laboratory environment in terms of student cohesiveness, open-endedness, integration, rule clarity and material environment. The analysis is as shown in Table 2.

*Table 2 :* T-test analysis of students' preferred and actual science laboratory environment

| Laboratory Environment | N | $\overline{X}$ | SD | DF | t-cal | t-critical | Decision |
|---|---|---|---|---|---|---|---|
| **Student Cohesiveness** | | | | | | | |
| Actual | | | | | | | |
| Preferred | 200 | 26.52 | 6.84 | 398 | 8.11 | 1.96 | * |
| | 200 | 32.20 | 7.24 | | | | |
| **Open-endedness** | | | | | | | |
| Actual | | | | | | | |
| Preferred | 200 | 25.17 | 6.25 | 398 | 8.91 | 1.96 | * |
| | 200 | 30.98 | 6.78 | | | | |
| **Integration** | | | | | | | |
| Actual | 200 | 24.25 | 7.59 | 398 | 7.39 | 1.96 | |
| Preferred | 200 | 29.72 | 7.14 | | | | * |
| **Rule Clarity** | | | | | | | |
| Actual | 200 | 23.88 | 8.20 | 398 | 6.23 | 1.96 | |
| Preferred | 200 | 29.24 | 8.96 | | | | * |
| **Material Environment** | | | | | | | |
| Actual | 200 | 25.92 | 7.42 | 398 | 7.43 | 1.96 | * |
| Preferred | 200 | 31.64 | 7.93 | | | | |

** = Significant at p<.05*

The analysis in Table 2 shows that the calculated t-value of 8.91, 8.11, 7.43, 7.39 and 6.23 for open-endedness, student cohesiveness material environment, integration and rule clarity respectively in order to magnitude is greater than the critical t-value of 1.96. Thus, the hypothesis which stated that there is no significant difference between students' preferred and actual science laboratory environment in terms of student cohesiveness, open-endedness, integration, rule clarity and materials environment is rejected. This implies that student preferred science laboratory environment is different from the actual science laboratory environment.

*c) Hypothesis Three*

There is no significant difference between the perception of students and teachers about the same science laboratory environment. The analysis is as shown in Table 3.

*Table 3 :* t-test analysis of the perception of students and teachers about the same science laboratory environment

| Perception | N | $\overline{X}$ | SD | DF | t-cal. | t-critical | Decision |
|---|---|---|---|---|---|---|---|
| Teachers | 24 | 32.71 | 8.35 | 222 | 0.54 | 1.96 | NS |
| Students | 200 | 31.65 | 8.92 | | | | |

*NS= Not significant at P<.05 alpha level.*

The analysis in Table 3 shows that the calculated t- value of 0.54 is less than the critical t-value of 1.96. Therefore, the null hypothesis which stated that there is no significant different between the perception of students and teachers about the same science laboratory environment is retained. This implies that both the teachers and students perceived the status of science laboratory environment in the same way.

## VII. Discussion of Results

The results of hypothesis one showed that science laboratory environment has significant effect on students' academic achievement in science subjects. This might be due to the fact that the most effective vehicle by which the process of inquiry can be learned appears to be a laboratory setting which the students experience firsthand process. Laboratory settings have also been demonstrated to be effective means for comprehension, understanding and application of scientific knowledge. Inquiry method and varieties of activities in a good science laboratory environment provide students which opportunities to observe, sample, experience and explain with scientific phenomena in their quest for knowledge of nature. This

is in line with the findings of Mc Robbie and Fraser (1993), Wong and Fraser (1997) and Akinbobola (2007) that there is a positive relationship between the nature of laboratory environment and students' achievement in science.

The result of hypothesis two showed that students' preferred science laboratory environment is different from the actual science laboratory environment in existence. The result also indicated that the significant difference exists between students' preferred and actual science laboratory environment in terms of open-endedness, student cohesiveness, material environment, integration and rule clarity respectively in order of magnitude in favour of preferred science laboratory environment.

The form of open-endedness that the students preferred is significantly different from the present status of science laboratories. The present situation in the laboratories is a stereotyped one which makes the teacher to decide the activities to be carried out by the students. However, the students prefer using activity curriculum in which students can pursue their own interest based on their needs and aspiration with the provision of variety of activities by the teachers. This will provide an open-ended divergent approach to experimentation. This is in agreement with the findings of Afolabi and Akinbobola (2009) that inquiry method through laboratory activities in open-ended form exposes the students to more realities of life and they tends to work as scientist and acquire knowledge by themselves in which the teacher serves as a guide and correct their misconceptions.

The form of student cohesiveness that the students preferred us significantly different from the present status in which students work alone. This might due to the fact that, working together cooperatively enhances appropriate behaviour in organizing work, asking questions, encouraging social interaction, demonstrating self management and facilitating better study habit and retention of knowledge. This is in line with the findings of Dilworth (1996) that working in small group enhances performance, promote learning and skills, and improvement of self-development through collaborative learning.

The form of material environment that the students preferred is significantly different from the actual material environment available in terms of materials and equipment. Most of the materials available are in short supply and this make the practical activities to be crowded. The students preferred form of material environment that make teaching to be real, provide first-hand experiences, develop creative ability of learners, and promote innovation and learning by doing. This is in line with the findings of Teh and Fraser (1995) that good laboratory environment enhances hands-on activities and enable the students to acquire basic science process skills in order to solve problems.

The form of integration that the students preferred is the type that the practical activities are integrated with theory. The actual situation is that the theory and the practical activities take place at different time. Most often, the practical activities are delayed until the final external examination is near. Integration of practical activities with theory enhances the development of science process skills and the ability of students to arrive at generalizations or concepts. This is in line with the findings of Ikitde (2011) that integrating practical work with theory enable students to develop the habit of critical thinking, innovation and creativity.

The form of rule clarity that the students preferred is the type that student's safety and proper handling and care of equipment is ensured. The teacher should prepare the rules and regulations guiding laboratory activities and make it known to the students.

The results of hypothesis three showed that both the teachers and students perceived the status of science laboratory environment in the same way. The might be due to the fact that both the students and the teachers recognize the problems facing the laboratory environment which include shortage of tools, materials and equipment and lack of maintenance culture. This in agreement with the findings of Akinbobola (2007) that the major problem facing laboratory environment is improper maintenance of materials and equipment.

## VIII. Conclusion

From the findings of the study, there is clear indication that the science laboratory environment has significant effect on students' academic achievement in science subjects. There exists a significant difference between students' preferred and actual science laboratory environment in terms of open-endedness, student cohesiveness, material environment, integration and rule clarity respectively in order of magnitude in favour of preferred science laboratory environment. Also, both the teacher and students perceived the present status of science laboratory in the same way.

## IX. Recommendations

In view of the implication of the findings from this study, the following recommendations are made:

Laboratory activities should be integrated with theory during regular class period.

1. Students should work collaboratively in a small group in the laboratory in order to enhance appropriate behaviour in organizing work and social interaction, and facilitating better study habit and retention of knowledge.
2. Adequate materials and equipment should be provided in the laboratory by the government in order to promote creativity, innovation and learning by doing.

3. Safety rules and regulations guiding laboratory activities and procedures should be made known to the students.
4. Adequate storage facilities should be provided in order to secure the materials and equipment available in the laboratory.
5. Maintenance culture should be enhanced through organizing regular seminars, workshops and conferences for teachers.

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# Defender of Human Value: Reviving a Real Marx

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*Abstract-* Marxism was unfairly treated as a piece of cliche and a social system with contempt of human value. However, is it really the case? Terry Eagleton, one of the leading figures of western Marxist literary critique of all time, clarifies ten prevailing misreading towards Marxism in his book *Why Marx Was Right.* Various are the fallacies, we can clearly sense the theoretical foundation of Eagleton as human-value-oriented Marxism towards the ten misreads. Starting from this, he progressed further argument in terms of politics, humanity and economics, which clarifies a real Marx and the real Marxism. What is more, is nowadays full of changes, Marxism, a system vibrant with energy, is bound to nurture a positive mind, a positive society and a positive world.

*Keywords: marxism, eagleton, human value, future applicability.*

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## I. Introduction

Actually, the interpretation of the book Why Marx Was Right is never something fresh, and the research of Marxism towards human value is far from novelty, however, the author creatively downs the ten seemingly irrelevant points of refutation to the root of Eagleton's theory towards Marxism in this book, defending of human value. Because of the originality, some points are personal-constrained and not that convincing, which deserves readers' understanding.

## II. The Critical Analysis of the Critical Logic Reasoning of Eagleton

The book *why Marx was right,* as an analysis-of-argument essay, is imbued with the wisdom of the critical logic reasoning of Eagleton. The book lists ten chapters in which the author reveals ten common prejudices towards Marx as well as Marxism, and reputes them respectively in his logical reasoning, which is not that perfect and needs introspection. Thus, it is meaningful to have a critical analysis towards his critical logic reasoning.

In brief, all theses can be simply divided into two parts—premise and statement. Premise is the background of statement; and statement is the conclusion of premise. And there is the logic bridge linking these two elements (Killoran, 2006: 8). This seemingly simple reasoning is actually the originator of almost all various derivative forms of inference, including the famous syllogism.

The valid argument towards the inference statement is divided into three methods: first, to question the validity of premise, such as the adequacy of date collection or the source of evidence; second, to question the suitability of statement, such as applying for exaggeration; third, to cut off the logic bridge providing the possibility of linking the two parts. Besides, there are lots of forms of seemingly correct invalid argument include shifting the topic, attacking the rival's other opinions, questioning the validity of rival's position, etc. Eagleton's critical logic throughout the book is confined to that as well.

Marxism is criticized to have created material deprivation when put in practice, and Eagleton refutes that capitalism has also led to no less famines than Marxism in reality; Marxism is criticized to have given rise to riots and upheavals when carried out, and Eagleton rebut that capitalism has also generated social turbulence as well. Such refutation is actually invalid in the strict sense. However, Eagleton never satisfied by resting on such refutation. It is obvious in the first example that premise refers to the fact that almost all the nations that choose Marxism inclined to break out the famines, and statement is judgment that Marxism is imbued with the defects of material deprivation. To start with, Eagleton question the validity of premise by stating that it is never Marx's intetion to implement Marxism in the nations lacking in material foundation, thus it is not the Marxism itself to blame. Then, he cut off the logic bridge by stating that those so-called Marxism enforced in many socialist countries is not the real one in reality. He explained that in the whole book by clarifying the misreading of Marxism. "We have to admit that the critical logic of Eagleton lacks coherence despite of its profound social meaning in it."(Fang Yu, 2006: 5) That is to say, the refutation is not that obvious, even some obscure in some way in that the whole underlying critical logic process is revealed to readers gradually throughout the whole book.

## III. Reviving a Real Marx: Defender of Human Value

We can clearly sense the theoretical foundation of Eagleton as human-value-oriented Marxism towards the ten misreads. Starting from this starting point, he progressed further argument in terms of politics, humanity and economics, which clarifies a real Marx and the real Marxism.

### *a) In Political section*

In terms of political section in this book, Eagleton mainly refutes two mainstream fallacies on Marxism. The first is of its obsession with class struggle;

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the second concerns advocating violent political action. On these two issues, Eagleton argues in details respectively. However, be his argument unassailable as appears, there is still some underlying ambiguity or contradiction, which is never that convincing.

i. *Debate over class struggle of Marxism*

Some people hold that social mobility nowadays has eliminated the cliche of class struggle. What is more, "the working class which they fondly imagine will usher in socialism has disappeared almost without trace."(Eagleton, 2011: 174). That is to say, the archaic theory of class struggle by Marx is only a thing to the past.

Eagleton refutes the opinions as follows. To start with, he clarifies the value assessment of class position, having nothing to do with discrimination, which gives the support that the theory of eliminating a class or another by Marxism is only sheer nonsense. What is more, the doctrine that working class has perished lacks solid evidence, considering the structure of class has evolved all the time. Actually, the working class, the concept of which has greater extension including salesmen and intellectuals, and nowadays is stronger than ever with the booming of the third world. However, the extension of the concept of working class is maybe Eagleton's own opinion which deserves further demonstration. Marx did not object to capitalism blindly just like drugs or smoking, but point out the merits of it as well, one of which capitalism bestowed to the world is the working class, stepping to the historical stage in accordance with the interests of bourgeois but growing to an awesome social power competent enough of replacing the status of bourgeois, which is also imbued with ironic colors in the conception of history from Marxism. Marx shed great light on working class not because of the unique merits they share that enable them to shoulder the history responsibility, but the particular position they stand of the whole productivity model providing them a clear picture of the whole mechanism as well as the technical and political visions towards getting rid of the existent yoke for implementing the actual interests to individuals, as the humankind liberation transmitter. ,

By analyzing the underlying critical logic beneath words, it is possible to clarify the thoughts of Eagleton on Marxism. To start with, he soothed the discrimination hue towards class position as well as class struggle. However, he also emphasized that class struggle does not equalize eliminating bourgeois. Eagleton applied his dialectical thinking to viewing Capitalism, providing history a lot of precious fruits, one of which is the working class, growing to shoulder the historical responsibility gradually. And last, Eagleton explained the suitability of practical situation for working class to finish its historical mission.

ii. *Fallacy of violent revolution imbued with Marxism*

Some anti-Marxists hold that Marxists "reject a sensible course of moderate, piecemeal reform and opt instead for the bloodstained chaos of revolution" (Eagleton, 2011: 193), and what is more "this is one of several senses in which Marxism and democracy are at daggers drawn" (Eagleton, 2011: 193)\\

On that point, Eagleton gave the refutation that it may be common to acknowledge revolutions as a brutal thing glutted with violence, whereas see to social reform as a civilized cause brimming with holy hue, however, it is not the real case all the time in reality. The United States civil rights movement, for example, named as social reform, yet involves death, riot and brutal repression. Actually, "in the colonial-dominated Latin America of the 18th and 19th centuries, every attempt at liberal reform sparked off violent social conflict" (Eagleton, 2011: 193). Some revolution, by contrast, has been relatively peaceful, just like velvet. "Not many people died in the Dublin uprising of 1916, which was to result in partial independence for Ireland. Surprisingly little blood was split in the Bolshevik revolution of 1917" (P194). Whereas, it is no doubting the fact that right after the Bolshevik wrested political power, brutal civil war ensued, however the real reason is never the defects imbued with Marxism itself but the brutal attack by national right-wing forces and foreign invaders towards the new order of Communism as the White Movement. "It is no clarifying the exact reason leading to bloody revolution of Marxism (Huang Shiquan, 2011: 71)". Marx only regards revolution as a method instead of the so-called ultimate end. What is more, even Marx himself admit that some revolutions have to last even hundreds of years which can never be solved simply by brutal turmoil.

The unique logic specialty Eagleton applied in this section is the giving the counter-examples, getting rid of the inherent thinking yoke about revolution and social reform. What is more, the author listed other important elements which may divert the masses' ability in touching the nucleus of true causes contributing to the brutal revolution around Marxism.

*b) Defending Human value in Humanity*

In this dimension, Eagleton divides humanity into two sectors, spiritual world and human nature, towards which exist fallacies respectively.

i. *Misreading spiritual world views of Marxism*

In terms of spiritual world, many people hold that Marx believed that nothing exists but matter. And "he had no interest in the spiritual aspects of humanity, and saw human consciousness as just a reflex of the material world." What is more, "he was brutally dismissive of religion, and regarded morality simply as a question of the end justifying the means." And "there is an obvious route from this dreary, soulless vision of

humanity to the atrocities of Stalin and other disciples of Marx."(Eagleton, 2011: 142)

What the world is made of, material? Or spirit? Discussions like that never draw Marx's attention, considering ignorant of which, he is more of a romantic thinker than a cold theorist. In contrast, the fallacies folks hold towards Marx above is just what the materialism philosophers advocate in Enlightenment Movement of 18th century, placing human beings into a passive state, which are regarded as the pure ideology form by Marx. And Marx never agreed with that kind of things, instead, he put great emphasis on the autonomy of humanity, imbued with democratic hue. In that sense, Marx is more of an anti-philosopher than a philosopher in that he question ideas in this own ideas, and although he managed to maintain rational himself, he never looked upon reason as the ultimate end the world developed towards. What is more, Marx holds that our thinking is formed with the transformation of our world, which is the requirement of our body needs. It is the phenomena Marx described as dissimilation that if theorists only regard reality as a thing of nature, unexplainable quality and independence of self-movement, and are totally unaware of the fact that reality is the results of the hands of human beings. Thus, Marx hold that our ideal thinking is closely related to the material life, in contrast to which some idealism philosophers are ignorant, the relationship between material and spiritual world, totally compatible with Marx's belief. That is why, when thinker like Locke and Hume research from our senses, Marx probe towards where our senses themselves are from. Only if probing into the actual action form, can it be avoided trapped into dualism in philosophy? In some sense, human beings are the object of material world, partly belonging to nature and partly belonging to history, and meantime they are the reflection of human's consciousness.

In this section, what the author applied most is the comparison, through which the author gave a clearer picture about the theory of Marxism to readers. By comparing Marx with the materialism philosophers in Enlightenment Movement of 18th century, the author clarifies which the targets the masses hold about Marxism aim at in reality. By comparing Marx with philosophers like Locke and Hume, Eagleton put the emphasis that actually Marx never separated material from spiritual world.

ii. *Two misunderstandings towards human nature opinions of Marxism*

The book lists two main fallacies of Marxism towards human nature, the first is about overlooking human nature and the second is about dreaming of a kind of perfect human nature, which can never be realized in reality. The author has a detailed argument against these two fallacies respectively.

In terms of the first misreading, Marx gave the background information at first and moved towards the targeted points gradually, like peeling the onions. To start with, the author accentuate that the greatness of Marx never lies in those brand-new concepts he created, such as communism and social class. Moreover, the essence of the theory of Marxism, the determination of economic basis towards superclass and the development of production mode, are not invented by Marx as well. Then the author have a clarification that class struggle, as a vital factor in the theory of Marxism, does not necessarily means that all the social history is made of class struggle, but class struggle plays a fundamental role in the whole social history. The unique feature of Marxism is the combination of class struggle and production mode, contributing to a brand-new view of history. In the view of Marx, the production power will develop, but may not be necessarily booming all the time, sometimes may stagger as well. Only if the productivity forces of the former class boomed to a certain level, can it be possible for a new social class to take over the relay baton in the history stage. Even though Marx held that material treasures may corrode our morality, he does not split material with morality. Because in his view, it is a part in developing production forces to bring the human creativity into full play, which is the exact reflection of human value.

In terms of the second fallacy, some people may believe that "Marxism is a dream of utopia. It believes in the possibility of a perfect society, without hardship, suffering, violence or conflict. Under communism there will be no rivalry, selfishness, possessiveness, competition or inequality." And obviously, "this astonishingly naive vision springs from a credulous faith in human nature. Human viciousness is simply set aside (P78)". In a word, can the communism society be realized in the future?

The nucleus of this topic lies in the understanding of Marx's view towards future. To start with, Eagleton demonstrates that actually "he does not show much interest in the future at all, and it is a notorious fact about his work that he has very little to say in detail about what a socialist or communist society would look like"(Eagleton, 2011: 79). Just as the Jews were traditionally forbidden to foretell the future, which can be seen in the Bible where the great saints never tries to foresee the future but criticize folks' degradation, greed for fortunes or lust for power and warn them, so Marx the secular Jew is mostly silent on what might lie ahead. Marx realized that it is the real action instead of the dreamy blueprint that benefits the realization of political tasks. "The point for Marx is not to dream of an ideal future, but to resolve the contradictions in the present which prevent a better future from coming about. When this has been achieved, there will be no more need for people like himself" and "The future, then,

is not just to be tacked on to the present, any more than adolescence is just tacked on to childhood."(Eagleton, 2011: 86) That demonstrates the importance for us to make a step in changing the world for a certain purpose instead of waiting negatively, if not trying to predict the future. And that is why, Marx regarded socialism as a decisive break with the present.

"A Utopian thinker might exhort us to rise above these conflicts in the name of love and fellowship, Marx himself takes a very different line. He does indeed believe in love and fellowship, but he does not think they will be achieved by some phony harmony."(Eagleton, 2011: 92)

Thus, in a word, Marx is skeptical of high-minded moralism and wary of idealism, which provides a further proof that the argument masses hold in the beginning is the pseudo-proposition. What is more, the assertions that Marxism dreams foolishly of a future in which everyone will be comradely and cooperatively all lack the solid support from Marx's works.

However, on the other hand, Marx did notice some virtues in humanity, which makes it possible to realize Marxism with the concerted effort from global cooperation, the just way of achieving Marxism in his opinion.

*c) In Economy dimension*

Many people hold the belief that "Marxism reduces everything to economics. It is a form of economic determinism"(Eagleton, 2011: 121). That is to say, "the true complexity of human affairs is passed over for a monochrome vision of history. In his obsession with economics, Marx was simply an inverted image of the capitalist system he opposed. His thought is at odds with the pluralist outlook of modern societies, conscious as they are that the varied range of historical experience cannot be crammed into a single rigid framework" (Eagleton, 2011: 121).

There is no doubting the fact that almost all phenomena in history have some associations with economy, which Marx certainly agrees with. Without material production, there could never be the civilization. However, it is never Marx's real meaning to ignore other elements in determining the flowing of history, but the absolute resolution in realizing the fundamental role of economy plays in human history. There exist the amazing underlying laws beneath human history all the time, such as exploitation, riots etc, based on which Marx regard history as a not-that-colorful pattern masses may not realize, which is also the essence of Marxism theory in economy-determination theory.

In addition to Marxist economics, there is another famous economical doctrine, principles of western economics, which received excellent reviews. Thus, it is really meaningful to compare these two famous economics doctrines. The essence of western economics theory is the ten principles of economics, among which inset the three dimensions: individuals in decision-making, mutual dealing of each other's and the proper operation of the whole economy.(Mankiw, 2010: 2) In the first dimension, it demonstrates about all kinds of costs and possible reasons and incentives that may prompt people to make different decisions. The core in this section, for my money, is the subjective initiative of individuals, the rational men. However, the emphasis of subjective initiative among individuals by Marx is never insufficient enough but always misread by the masses just as discussed above. Although Marx's theory about individuals pales immediately compared with the ones like Benthamism imbued with the maximum utilities among individuals, it shed great light on the creative initiative of masses, which is of vital importance to the booming of the whole economy. "Marxism's role is also digging out the utmost potential from individuals" (Guo Taihui, 2009: 16), which, in my opinion, certainly involves the business talents. In terms of the second section, mutual dealing, actually, there are two sub-dimensions -- free market and government regulation, which are in the parallel structure. However, it is so likely for us to concentrate inclusively on the "invisible hand" put forward by Adams when talking about economics essentials in western world. That is to say, the government regulations and controls emphasized by Marxism are not compatible with the roots of western economics essentials in reality. What is more, when reviewing the results, free market has transformed the Great Britain into a powerful industrialized nation, so do regulations and controls to the Soviet Union. Moreover, as the introduction of welfare system in western world, people gradually begin to realize the limit of free-market-dominated system and voice for macro-regulations for economy nowadays is getting clearer than ever. Thus, the statement that Marxism economics should be placed to the museum lacks solid evidence. In terms of the third dimension, the whole operation of economy, the ten principles put emphasize on the fiscal and monetary policies of the government and the proper distribution of labor power, including the dealing with inflation, unemployment rate and proper balancing the distribution of labor power. In Marxism economics, there are even more words than the ten principles in terms of labor power. However, in terms of solid policies, the two theories are in the different angles: economics essentials laid its foundation on the solid contemporary economical figures, whereas Marxism shed more light on the deduction of economical regular patterns in history, but it is no judging which one is superior to the other, because they are totally bred on different values.

## IV. Marxism: a System Vibrant with Energy in Guarding Human Value Forever

"All the most interesting radical movements of the past four decades have sprung up from outside Marxism, such as Feminism, environmentalism, gay and ethnic politics, animal rights, anti-globalization, the peace movement: these have now taken over from an antiquated commitment to class struggle, and represent new forms of political activism which have left Marxism well behind."(Eagleton, 2011: 225)

To start with, Eagleton states the fact that Capitalism is no way to die out in a short period, and meantime, the trend of anticapitalism shows no signs in ebbing away. And that is why, Marxism, as one of the famous anticapitalism theories is no way to go into the museum in no time. Marx neglected the gender differences, in other words gender-blind, in almost all his works, giving a strong support to Feminism Movement. Besides Feminism, Marxism provided the indispensable starting point for most of the great first-generation theorists of the anticolonial wars. "In the 1920s and 1930s, practically the only men and women to be found preaching racial equality were communists. Most African nationalism after the Second World War, from Nkrumah and Fanon onwards, relied on some version of Marxism or socialism. Most communist parties in Asia incorporated nationalism into their agendas."(Wang Jie, 2008: 82) what needs to be stressed is that Marx's personal standing on the issue of colonialization is not that clear, which may incur some critics from masses. However, the real reason is never because of Marx's attempt to compromise with Capitalism and being eager to view the brutal scene of colonialization, but the consideration that through colonialization modernized factors can be spread to those uncivilized areas which provides the material foundation for Marxism realization.

There is another factor of Marxism Eagleton fails to mention in this book about the applicability of Marxism in the long term that the theory of Marxism is never static but vibrant with energy. "Society has involved to a certain period in which traditional Marxism has also involved correspondingly, making it a golden rule."(Yi Xingxia, 2001: 61) It is no doubting the fact there is never a forever-correct physics law not only because of the development of technology but the stability of almost all the physical laws themselves. However, it is never the case with the theory of Marxism, which, as Ernest Mandel remarked, is always open, always critical, and always self-critical. Throughout the history since the appearance of Marxism, it has sprung into various manifestations in different places and different time from their original matrix, classical Marxism, which denotes the collection of social and economical and political theories expounded by Karl Marx and Friedrich Engels. However, to the classical Marxism, some Marxists have criticised the academic institutionalization of Marxism for being too shallow and detached from political action. For instance, Zimbabwean Trotskyist Alex Callinicos, himself a professional academic, stated that "Its practitioners remind one of Narcissus, who in the Greek legend fell in love with his own reflection... Sometimes it is necessary to devote time to clarifying and developing the concepts that we use, but indeed for Western Marxists this has become an end in itself. The result is a body of writings incomprehensible to all but a tiny minority of highly qualified scholars" (Alex, 2010: 68). Actually, Marxism has various forms afterwards, such as Marxism-Leninism, Post-Stalin Moscow-aligned communism, Eurocommunism, anti-revisionism, Maoism etc. All of those Marxism has been revised for certain historical features, which fully reflects the vibrant energy fitting the historical trends.

Nowadays, a new branch of Marxism, known as Ecological Marxism, is growing prevalent in the arena of academics around the global, catering to the actual awkward situation of natural resources. However, it is never a brand-new concept totally divorced from classical Marxism created by Marx. In the works such as Capital, Marx discussed the natural ecological environment is the natural basis of human material production activity from the angle of economics. The first point Marx made of nature is that nature is a natural basis and precondition for the labor of human being. Just as pointed in his work that "on the one hand, nature provides living materials for labor in such a scene, namely, there is no labor without labor objects; on the other hand, nature provides means of subsistence in a narrower sense, namely meet workers' body demand for existence". This is because "workers realize their labor, and spread their productivity, and produce output and produce themselves" in nature. Engels also pointed out: "nature provides material to physical labor, while works turns material into wealth". It is obviously that both Marx and Engels affirmed firstly nature is the fundamental premise and precondition of human being's survival and material production activity. What is more, Marx also held that division of society and cooperation in the social production and economic development, even the life style of human being existence, rely on nature, and different nature bases shape different economic structures. "If not the foresight imbued with Marxism towards ecological issues, how can it survive the changeable world nowadays."(Zhao When, 2011: 55)

And thus, based on the ecological indicators of the classical theories of Marxism, the modern Ecological Marxism emerged as the time requires. When human beings encountered with survival crisis including environmental and ecological issues, it is really beneficial to take the exploration by combining ecology with Marxism, imbued with the actual practical meaning.

Ecological Marxism, as a branch of Marxism in the US, is put forward by social ecologist and racial plutonomist James O'Connor in his recent masterpiece *natural reason -- ecology Marxism research*. In the view of Ecological Marxists, Capitalists regard nature as a water faucet and sewage pool at the same time, which is never compatible with the sustainable development idea nowadays? Thus, just as O'Connor pointed out, the rhythm of nature itself and the cycle is fundamentally different from the rhythm of the capital operation and cycle. And they realized the anti-ecological essence of Capitalism, which enable them to bestow a new ecological rule into Ecological Marxism, which enables the theory to fit well with current world. And just as discussed above, Marxism will still be vibrant with energy with its proponents' renewal constantly and be a charming doctrine for the scholars around the globe forever.

## V. Conclusion

In a word, Marxism, seemingly a piece of cliche in some way will never perish, considering its strong vitality. And the book *Why Marx was Right* will give out its forever charming for Marxism researchers as well as us college students.

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## 人类价值的捍卫者：还原一个真实的马克思

闫琛

内容摘要：马克思主义长久以来一直被认为藐视人的价值，但是事实真的如此吗？作为西方知名的马克思主义文学批判理论家伊克尔顿在其著作《为什么马克思是对的》一书中，针对当今甚嚣尘上的十个关于马克思主义的悖论进行了批驳。不难发现，虽然十个悖论之间的逻辑联系性有限，但是伊格尔顿教授以马克思主义对人的价值的捍卫为根本出发点，并在政治、人文以及经济领域对悖论进行一一回驳。而且，笔者认为，即便是在后资本主义时代，马克思主义以其强大的生命力不断焕发着新的活力，成为人类价值更坚实的捍卫者，为全世界不断注入正能量。

关键词：马克思主义；伊格尔顿；人的价值；未来适用性

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# The Impact of Language Translation on the Internal Structure of a Rating Scale: The Strengths and Difficulties Questionnaire in Spanish

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*Abstract-* The purpose of this study was to compare the psychometric properties of the Spanish version of the Strengths and Difficulties Questionnaire (SDQ), a 25-item behavioral screener, with the English version. Participants included in this study were 363 English-speaking parents and 334 Spanish-speaking parents of preschool age children (ages 3-5) who took part in the Children's Hospital of Orange County/University of California (Irvine) Initiative for the Development of Attention and Readiness (CUIDAR) program from 2004-2008. This study used data from the CUIDAR program to explore mean rating differences between the English and Spanish versions of the SDQ, along with coefficient alpha as an indicator of reliability at the scale and composite level, and factor analytic evidence of score validity. Mean ratings of the scales and the Total Difficulties scale were very similar across language forms. Reliability coefficients indicated alphas were higher for scores derived from the English forms compared to the Spanish forms at the scale and composite levels, although neither form produced scores with adequate reliability at the scale level. Finally, the Five First Order Factor Model was the best-fitting and most valid representation of all 25 items of the SDQ, regardless of the language of the form.

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*Strictly as per the compliance and regulations of:*

# The Impact of Language Translation on the Internal Structure of a Rating Scale: The Strengths and Difficulties Questionnaire in Spanish

## Internal Structure of the SDQ-Spanish

Heather Blumert [α], Ryan J. Kettler [σ] & Kimberley D. Lakes [ρ]

*Abstract-* The purpose of this study was to compare the psychometric properties of the Spanish version of the Strengths and Difficulties Questionnaire (SDQ), a 25-item behavioral screener, with the English version. Participants included in this study were 363 English-speaking parents and 334 Spanish-speaking parents of preschool age children (ages 3-5) who took part in the Children's Hospital of Orange County/University of California (Irvine) Initiative for the Development of Attention and Readiness (CUIDAR) program from 2004-2008. This study used data from the CUIDAR program to explore mean rating differences between the English and Spanish versions of the SDQ, along with coefficient alpha as an indicator of reliability at the scale and composite level, and factor analytic evidence of score validity. Mean ratings of the scales and the Total Difficulties scale were very similar across language forms. Reliability coefficients indicated alphas were higher for scores derived from the English forms compared to the Spanish forms at the scale and composite levels, although neither form produced scores with adequate reliability at the scale level. Finally, the Five First Order Factor Model was the best-fitting and most valid representation of all 25 items of the SDQ, regardless of the language of the form.

## I. Introduction

In the United States, Latinos represent the largest ethnic minority group (Pedrotti & Edwards, 2010), are overrepresented in terms of families afflicted by behavioral disorders and mental health disorders (Smokowski, Reynolds, & Bezruczko, 1999), and are at greater risk of failing in school as well as dropping out of school (Tinkler, 2002). Researchers (e.g., Lakes, Lopez, & Garro, 2006) have noted that to address such mental health disparities, it is important to develop and study clinical assessment methods in the populations in which they will be used. Recent research (Lakes, in press) illustrated how sample characteristics impact the reliability of scores obtained, providing further evidence of the importance of carefully studying assessment instruments in different populations before applying them widely or assuming that the psychometric properties of scores derived from these instruments will be equivalent in different populations.

As the Latino population and the number of Latino school-age children increase in numbers throughout the United States, it is essential to have instruments for Spanish-speaking individuals that will provide reliable and valid assessments of children's behavioral strengths and weaknesses. It is particularly important to understand the Latino parent perspective when they are asked to rate their children's behaviors. For many of these parents, Spanish is the only language in which they are fluent. Thus, there is a need for a measure in Spanish that identifies children's behavioral strengths and difficulties as well as the English version works for English-speaking families. The current study examines the psychometric properties of scores derived from a behavioral screening measure (Strengths and Difficulties Questionnaire, Goodman, 2001) that was first written in English, but has been translated to Spanish and is now widely used in both languages.

## II. Criteria for Evaluating Rating Forms

Exploring the psychometric properties of scores obtained from rating scales that have been translated into Spanish is essential. Key aspects in exploring the psychometric properties of a test or scale entail evaluating how reliable and valid its scores are.

Reliability refers to the how consistent a measure is when the assessment is repeated on a population (American Educational Research Association [AERA], American Psychological Association [APA], and National Council on Measurement in Education [NCME], 1999), and establishing reliability evidence is a prerequisite to establishing evidence for the validity of inferences drawn from scores. Coefficient alpha is one indicator of reliability, equal to the mean of all split-half reliabilities, when the standard deviations are equal (Cortina, 1993).

Validity refers to the degree to which theory and evidence provide backing for the interpretations of test

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scores entailed by the designed use of tests (AERA at al., 1999). Factor analysis is often used to provide evidence of how well the items on a scale fit together as intended, yielding one type of evidence for validity that is included in the *Standards for Educational and Psychological Testing* (the *Standards;* AERA et al., 1999). Exploratory factor analysis (EFA) is appropriate when no model is hypothesized before analysis, but when a model is theorized, confirmatory factor analysis (CFA) is a stronger evaluative tool. In CFA, the fit of each proposed model is tested to determine the best structure of a test (Sharkey et al., 2009). Subsequent links between validity and factor analysis lie in the theory of falsification, which posits that that a theory should not be considered credible until efforts have been made to disconfirm the theory (Thompson & Daniel, 1996). A strong program of construct validation requires that rival hypotheses be tested which may suggest alternative explanations for the meanings of test scores. Similarly, in CFA, rival models can and should be tested because multiple models may fit the same data. Multiple models are evaluated in the current study.

## III. Psychometric Properties of Assessment Tools Translated into Spanish

Research regarding the effect of translating instruments into Spanish, or other languages, has yielded varying results. The effect of translation differs by measure.

*The Behavioral and Emotional Rating Scale-2.*

The Behavioral and Emotional Rating Scale-2 Parent Report (BERS-2) is a school-based scale that measures the strengths of a student (Sharkey et al., 2009). It is used primarily with children who have significant mental health concerns, including Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), and mood disorders. Buckley, Ryser, Reid, and Epstein (2006) performed an exploratory factor analysis of the original English version of the BERS-2. They assessed various factor structures, including a 3-factor model and the intended 5-factor structure, finding the 5- factor structure to be the best-fitting model (Buckley, 2006). Sharkey et al. (2009) then explored the factor structure of the BERS-2 with Spanish-Speaking parents of at-risk youth. There were two samples included in this study. The first consisted of parents of students in fourth through seventh grade from low socioeconomic status neighborhoods in two school districts in Central California. The second sample consisted of parents of youths enrolled in a community program providing services to criminally involved families. Exploratory factor analysis indicated that a three-factor model was a better fit than the original five-factor model of the English version for the latter sample.

*The Social Anxiety Scale for Adolescents (SAS-A).*

The Social Anxiety Scale for Adolescents (SAS-A) is an instrument designed to measure social anxiety responses (Olivares, Ruiz, Hidalgo, Garcia-Lopez, Rosa, & Piqueras, 2004). CFA of the SAS-A by LaGreca and Lopez (as cited in Olivares et al., 2004) supported the original three-factor structure in an English-speaking sample. Olivares et al., (2009) assessed alternative models to the original three-factor model of the SAS-A: a null or independent model, a one-factor model in which all 18 items loaded onto a general social anxiety factor, a two-factor model of FNE and SAD combined, and the original model, with a Spanish-speaking adolescent population in Spain. Results indicated that the three-factor model was confirmed and was a better fit compared to the alternative structures proposed. The three-factor model had the highest Goodness of Fit Index (.89) and Comparative Fit Index (.89) among the tested models. In addition, the Standardized Root Mean Square Residual of .06 indicated a good fit. Compared to the English version of the SAS-A, Spanish version was nearly as good of a better fit. Coefficient alphas were similar to those obtained using the English form of the SAS-A (LaGreca & Lopez, 1998), ranging from .87 to .94 across scales. Authors suggested that this measurement study provides support for the SAS-A to be used with a Spanish-speaking population.

*The Child Behavior Checklist (CBCL).*

The Child Behavior Checklist can be used to assess emotional problems as well as attention and social concerns (Goodman & Scott, 1999). A study by Gross, Fogg, Young, Ridge, Cowell, Richardson, and Silvan (2006) was completed in which the Child Behavior Checklist (CBCL) was completed by parents of two-to-four-year old children who represented a diverse set of races, ethnicities, incomes, and language backgrounds. Overall model fit was assessed through CFA based on the relative chi-square (ratio of the chi-square to the degrees of freedom) and the root-mean-square error of approximation (RMSEA). The authors found that despite language, racial, and socio-economic differences, the model was a good fit when translated to Spanish. The RMSEA statistics were both at .03 and the relative chi-square was 1.66 for the English form and 1.67 for the Spanish form.

## IV. Psychometrics of the SDQ across Cultures and Languages

The Strengths and Difficulties Questionnaire (SDQ) was developed in the United Kingdom by Robert Goodman as a rating instrument to assess youth behavior (Goodman, 2001). There are five scales generating scores for Emotional Symptoms (ES), Conduct Problems (CP), hyperactivity-inattention (HI), peer problems (PP), and prosocial behavior (PB), as

well as a Total Difficulties (TD) composite score (Goodman, 2001).

Goodman (2001) collected SDQs from parents, teachers, and self-informants in a nationwide epidemiological sample of over 10,000 British students ages 5 to 15. Ninety-six percent of the informants were parents (Goodman, 2001). Internal consistency was assessed and Coefficient alpha coefficients were generally satisfactory for scores representing the five factors, with a mean of .73 across all forms. Table 1 depicts coefficient alpha across subscales for the reviewed SDQ studies. The internal consistency of the TD category was sufficient, with a coefficient alpha of .82. Factor analytic results indicated that all 25 items loaded more heavily onto their respective factors than any of the additional factors. Goodman (2001) noted many items on the HI scale and PP scale on the teacher and self-informant form also substantially loaded (.34 to .52) onto the PB scale. These items were all positively worded indicating a general tendency for positive statements to load onto the PB scale. In addition, the predicted five-first-order factor (5F) structure consisting of the five scales was confirmed.

*Table 1 :* Coefficient Alphas across Strengths and Difficulties Questionnaire Parent-Informant Studies

| | Goodman 2000 | Hawes et al. 2004 | Muris et al. 2002 | Mean |
|---|---|---|---|---|
| Language of Form | English | English | Dutch | |
| Children's Age (years) | 5-15 | 4-9 | 9-15 | |
| Scale | | | | |
| Emotional Symptoms (ES) | .67 | .66 | .70 | .68 |
| Conduct Problems (CP) | .63 | .66 | .55 | .61 |
| Hyperactivity-Inattention (HI) | .77 | .80 | .78 | .78 |
| Peer Problems (PP) | .57 | .59 | .66 | .61 |
| Prosocial Behavior (PB) | .65 | .70 | .68 | .68 |
| Total Difficulties (TD) Composite | .82 | .82 | .80 | .81 |

Hawes and Dadds (2004) analyzed the parent form of the SDQ administered to a large Australian community sample of parents of children ages 4 through 9. Coefficient alpha ranged from .59 to .80. The 5F structure was examined separately for males and females using principal component analyses with oblimin rotation. Results supported the 5F structure, with factor loadings generally stronger for boys than for girls. Consistent with Goodman's study (2001), cross loading occurred with a conduct scale item relating to obedience. Hawes and Dadds (2004) noted that the utility of this item as an indicator of conduct problems may be unreasonable. Using a more negatively worded statement (i.e., "generally disobedient" rather than "generally obedient") may produce a better indicator of conduct problems.

Muris, Meesters, & van den Berg (2002) studied more than 500 parents of children and adolescents using the Dutch form of the SDQ. Internal consistency was generally satisfactory, with a mean coefficient alpha of .70 for scores. However, Coefficient alpha for the CP scale was notably lower ($\alpha$ = .55) compared to the rest of the scales and the TD composite ($\alpha$ ranged from .66 to .80). The five factors (ES, CP, HI, PP, and PB) all had Eigen-values greater than 1.0 (i.e. 4.8, 2.5, 2.0, 1.3, and 1.2). They also accounted for 47.6 percent of the total variance. In addition, all of the items loaded strongly onto their respective factors.

While the aforementioned studies are representative of the large body of research that has been conducted on the SDQ, very little of this research has focused on the preschool version of the measure. In fact, a recent review (Stone, Otten, Engels, Vermulst, & Jannsens, 2010) of 48 research studies on the SDQ included only two studies that extended as young as the three-year-old population, and none focused exclusively on three through five-year-old children, as the current study does. The current study will fill a gap in the research by focusing exclusively on this population.

## V. Research Questions

The current study was inspired by the need for a Spanish language measure of behavior problems from with valid inferences can be drawn, and by the availability of the SDQ in several languages to meet this need. Research questions included:

1. Are there mean differences in SDQ scores based on the language of forms (English versus Spanish)?
2. Are there reliability differences in SDQ scores based on the language of forms (English versus Spanish)?
3. Is the internal structure validity evidence of SDQ scores different based on the language of forms (English versus Spanish)?

## VI. Method

### a) Participants

Participants in this study included 363 English-speaking parents and 334 Spanish-speaking parents of preschool age children (ages 3-5) who took part in the California University (Irvine) Initiative for the Development of Attention and Readiness (CUIDAR) program over a four-year period, from 2004-2008. The sample was predominantly Mexican-American (originating from Mexico), regardless of whether the forms were completed in English or Spanish. Both subsamples were well-balanced with regard to gender, and were composed of roughly 1/3 three-year-old children, 1/2 four-year-old children, and 1/6 five-year-old children. The English speaking sample was predominantly Mexican American (43%) and included representative subsamples of European Americans (18%) and African Americans (15%). The Spanish speaking subsample was predominantly Mexican American (85%) and included a representative subsample of Other Hispanic persons (13%). The English speaking parents were more educated on average than the Spanish speaking parents, with about half of the former having completed some college, and about half of the latter not completing high school. Further demographic information is reported in Table 2.

*Table 2 :* Demographic Information across Samples

| | **English Form** (***n*** **= 363)** | **Spanish Form** (***n*** **= 334)** |
|---|---|---|
| Gender | | |
| Female | 45% | 54% |
| Male | 55% | 46% |
| Child's Age | | |
| Three years | 32% | 32% |
| Four years | 53% | 51% |
| Five years | 15% | 18% |
| Child's Ethnicity | | |
| Mexican American | 43% | 85% |
| European American | 18% | 0% |
| African American | 18% | 0% |
| Biracial | 9% | 2% |
| Other Hispanic | 7% | 13% |
| Other NonHispanic | 5% | 0% |
| Parent's Education Level | | |
| Did Not Complete HS | 18% | 50% |
| HS Diploma/GED | 26% | 29% |
| Some College | 49% | 13% |
| Bachelor's Degree | 3% | 6% |
| Advanced Degree | 4% | 2% |

*Note. HS = high school; GED = general equivalency diploma*

CUIDAR is an early intervention program that was designed to reduce potential barriers (e.g., lack of knowledge, lack of insurance, and cultural issues) to screening and intervention for behavioral disorders that may disproportionally affect low-socioeconomic status and minority families (Lakes, Kettler, Schmidt, Haynes, Feeney-Kettler, Kamptner, Swanson, & Tamm, 2009; Lakes, Vargas, Riggs, Schmidt, & Baird, 2011). The goal of CUIDAR is to identify children with attention and behavioral difficulties prior to entering the school system so they will have a more successful educational experience (Lakes et al., 2009). The parent education model used in this program is a modified version of the original Creating Opportunities for Parent Empowerment (COPE) program (Cunningham, Bremner, & Boyle, 1995), which focuses on parent-child interactions, building self-efficacy, and identifying and correcting common parenting errors.

### b) Measures

The Spanish, preschool version of the SDQ is used to assess youth ages 3 through 5 based on 25 items related to positive and negative characteristics, using a 3-point Likert scale (0 = Not True, 1 =

Somewhat True, 2 = Certainly True; Goodman, 2001). There are forms for parents, teachers, and self-raters to complete. (Only the parent forms were used in the current study.) The five scales are each based on five items. The TD composite is computed from the four problem scales (i.e., every scale except PB). The theoretical structure of the SDQ is five individual factors representing the five scales. The Spanish version used in the current study is intended to be a direct translation of the English version, with the same factor structure. The Spanish SDQ was used instead of the Spanish (Rio de la Plata) SDQ because the former was more aligned with the Spanish typically spoken in southern California.

*c) Procedures*

Analyses were conducted using an extant database from the CUIDAR program, and were approved by the institutional review board of the lead author. During the introductory session of CUIDAR, parents were invited to participate in a research study designed to evaluate the effectiveness of the 10-week intervention. As part of their entrance into the research study, participants completed the SDQ. Participants also completed a demographic questionnaire, which included questions regarding race, ethnicity, country of origin, and parent education level. Participants were given an SDQ form in either English or Spanish, based on whether they had self-enrolled in a English- or Spanish-speaking parenting group.

*d) Data Analysis*

Data were analyzed to determine whether the English and Spanish versions of the SDQ differed with regard to the magnitude of scores and their internal structure. Independent samples t-tests were used to compare mean scores between the two forms at both the subscales and composite level. Reliability was estimated using Coefficient alpha at both the composite and scale levels. CFA was used to examine the internal structure validity evidence.

As part of the CFA, Several indicators were calculated including the normed fit index (NFI), goodness of fit index (GFI), and the comparative fit index (CFI), indicating how well the specific data is structured in relation to the proposed model. The CFI also indicates the fit of a target model to the fit of an independent model, which assumes all variables are uncorrelated (Bentler, 1990). The NFI compares the null model and target model and indicates how well the proposed model improves the fit relative to the independent model (Bentler, 1990). The GFI involves the variances and covariances jointly explained by the model (Joreskog and Sorbom, 1986). All of the aforementioned indices require a statistic of .92 or more to be considered acceptable (Hair Jr. et al., 2010). None of these tests is affected by sample size and normality of distribution.

Other goodness-of fit- statistics used in this study include the Standardized Root Mean Square Residual (SRSMR) and the Root Mean Square Error of Approximation (RMSEA). Following Hair Jr. et al.'s (2010) heuristics for goodness of fit indices, along with our sample size and number of variables, we considered an SRSMR of .08 or less a good fit and an RMSEA of .07 or less a good fit. Akaike's Information Criterion (AIC) was calculated as an indicator of each model's fit relative to its parsimony. Because there are many ways to interpret the findings from CFA, the various multiple fit statistics were considered collectively to represent various perspectives (Campbell, Gillaspy, and Thompson, 1995).

These analyses were used to compare the relative fit of multiple models, including a Five First Order Factor (5F) Model consisting all five scales, a Five First Order within One Second Order Factor (5F1S) model consisting of all five scales scores nested within a second order TD score, and a Four First Order Factors within One Second Order Factor (4F1S) model consisting of the four problem behavior scales nested within the second order TD score and the non-nested PB scale (the 4F1S model is consistent with the SDQ scoring instructions, which indicate TD is the sum of four of the scales).

## VII. Results

Mean ratings of the scales were very similar across the two forms (see Table 3). Mean ratings were significantly higher on the TD scale, $t(1.98) = 3.92$, $p < .05$, and the HI scale, $t(3.47) = 12.04$, $p < .01$, when the SDQ was completed in English. Although the difference in mean scores was significant, the effect sizes of the difference between the two forms of the TD scale ($d = .24$) and HI scale ($d = .14$) were small. No other differences were significant.

*Table 3 :* Means and Standard Deviations of Parent Ratings across Samples and Scales

| SDQ Scale | English Form | Spanish Form |
|---|---|---|
| Emotional Symptoms (ES) | 2.19 (2.05) | 2.16 (1.94) |
| Conduct Problems (CP) | 3.63 (2.45) | 3.46 (2.01) |
| Hyperactivity-Inattention (HI) | 4.95* (2.54) | 4.33 (2.20) |
| Peer Problems (PP) | 2.56 (1.90) | 2.51 (1.73) |
| Prosocial Behavior (PB) | 7.25[1] (2.15) | 7.01[a] (2.00) |
| Total Difficulties (TD) Composite | 13.46* (6.43) | 12.52 (5.45) |

*Note: Range of possible ratings is (0-10) on Emotional Symptoms, Conduct Problems, Hyperactivity-Inattention, Peer Problems, and Prosocial Behavior. Range of possible ratings for Total Difficulties is (0-40). [1] Higher Ratings are desirable on the Prosocial Behavior Scale.*

** = Significantly higher mean rating on English Form compared to Spanish Form ($p < .05$).*

*a) Reliability*

For the TD scale (English $\alpha = .81$, Spanish $\alpha = .73$) and for all five subscales, the coefficient alpha was higher for the score from the English form (see Table 4). On the SDQ English form two of the five scales were in the moderate range, two were in the low range, and one was in the very low range. On the Spanish version of the SDQ, alphas for all five scales were in the very low range.

*Table 4 :* Reliability Coefficients across Forms

| SDQ Scale | English Form | Spanish Form |
|---|---|---|
| Emotional Symptoms (ES) | .65 | .57 |
| Conduct Problems (CP) | .74 | .59 |
| Hyperactivity-Inattention (HI) | .73 | .59 |
| Peer Problems (PP) | .47 | .35 |
| Prosocial Behavior (PB) | .69 | .59 |
| Total Difficulties (TD) Composite | .81 | .73 |

*b) Confirmatory Factor Analysis*

Six confirmatory factor analyses were performed corresponding to two forms and three models. A comparison of indices across analyses follows.

*English 5 F Model.*

The 5F model for the SDQ in English was a good fit, with the NFI (.88), the CFI (.91), and the GFI (.87) each at or approaching .92. The SRSMR (.07) and RMSEA (.07) also indicated good fit. The 5F model accounted for between 5% and 52% of the variance in each individual item. The saturated model had a lower AIC (650.00) than did the 5F Model (996.12), indicating that the saturated model was a better fit, when not considering theory. The AIC of the Independence model (6385.36) was much higher than either. Table 5 summarizes these indices across forms and models. Factor loadings were high for the CP Factor with four out of five items exceeding .60 and moderately high for the ES, HI, and PB factors. Loadings were lower and more difficult to interpret for the PP Factor. Three of the five items linked to this factor were below .30. Table 6 reports factor loading for each item across forms and models.

*Table 5 :* Goodness of Fit Indices across Models and Forms

| | Englis 5F | h form 5F1S | 4F1S | 5F | Spanish form 5F1S | 4F1S |
|---|---|---|---|---|---|---|
| Indices | | | | | | |
| NFI | .88 | .87 | .84 | .74 | .70 | .68 |
| CFI | .91 | .90 | .88 | .80 | .76 | .74 |
| GFI | .87 | .86 | .85 | .85 | .82 | .83 |
| SRSMR | .07 | .07 | .12 | .08 | .09 | .10 |
| RMSEA | .07 | .08 | .08 | .08 | .09 | .09 |
| AIC | 996.12 | 1077.60 | 1141.45 | 1103.85 | 1270.86 | 1259.50 |

*Note. 5F = Five First Order Factor Model; 5F1S = Five First Order within One Second Order Factor Model; 4F1S = Four First Order within One Second Order Factor Model; NFI = normed fit index; CFI = comparative fit index; GFI = goodness-of-fit index; SRSMR = standardized root mean square residual; RMSEA = root mean square error of approximation; AIC = Akaike's information criterion*

*Table 6 :* Factor Loadings across Models and Forms

| SDQ Scale/Items | English form 5F | 5F1S | 4F1S | Spanish fo 5F | rm 5F1S | 4F1S |
|---|---|---|---|---|---|---|
| ***Emotional Symptoms Scale (ES)*** | | | | | | |
| Somatic Complaints | .32 | .32 | .32 | .38 | .35 | .36 |
| Worried | .59 | .58 | .59 | .50 | .48 | .48 |
| Unhappy | .60 | .61 | .61 | .55 | .56 | .57 |
| Nervous/Clingy | .46 | .47 | .46 | .45 | .46 | .45 |
| Many fears | .61 | .61 | .61 | .44 | .47 | .46 |
| ***Conduct Problems Scale (CP)*** | | | | | | |
| Temper tantrums | .60 | .60 | .63 | .39 | .37 | .41 |
| Obedient | .63 | .62 | .57 | .53 | .57 | .46 |
| Fights w/children | .61 | .63 | .61 | .56 | .54 | .58 |
| Lies/Cheats | .64 | .62 | .66 | .48 | .46 | .50 |
| Steals | .52 | .53 | .54 | .35 | .34 | .40 |
| ***Hyperactivity-Inattention Scale (HI)*** | | | | | | |
| Restless/Overactive | .68 | .67 | .68 | .64 | .61 | .64 |
| Fidgeting/Squirming | .72 | .71 | .72 | .62 | .55 | .62 |
| Distracted | .63 | .63 | .64 | .51 | .51 | .51 |
| Thinks before Acting | .40 | .43 | .40 | .28* | .34 | .27* |
| Attention Span | .52 | .53 | .51 | .28* | .36 | .29* |
| ***Peer Problems Scale (PP)*** | | | | | | |
| Solitary | .26* | .25* | .28* | .17* | .19* | .22* |
| One good friend | .47 | .45 | .42 | .46 | .42 | .36 |
| Liked by other children | .63 | .63 | .61 | .58 | .57 | .54 |
| Bullied by other children | .23* | .23* | .29* | .19* | .23* | .27* |
| Gets along w/adults more than peers | .29* | .30* | .33 | .13* | .20* | .24* |
| ***Prosocial Behavior Scale (PB)*** | | | | | | |
| Consider of others | .62 | .65 | .58 | .41 | .41 | .42 |
| Shares | .58 | .58 | .53 | .48 | .43 | .37 |
| Helpful | .51 | .51 | .59 | .47 | .48 | .56 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Kind | .60 | .57 | .53 | .54 | .55 | .48 |
| Volunteers | .49 | .50 | .60 | .49 | .53 | .57 |

*Note: SDQ = Strengths and Difficulties Questionnaire; 5F = Five First Order Factor Model; 5F1S = Five First Order within One Second Order Factor Model; 4F1S = Four First Order within One Second Order Factor Model. * = at or below .30 considered low factor loading.*

*English 5F1S Model.*

The 5F1S model for the SDQ in English was a good fit, with the NFI (.87), the CFI (.90), and the GFI (.86) each approaching .92. The SRSMR (.07) also indicated good fit. The RMSEA (.08) indicated a moderate fit. The 5F1S model accounted for between 5% and 51% of the variance in each individual item. The saturated model had a much lower AIC (650.00) than did the 5F1S model (1077.60), indicating that the saturated model was a better fit, when not considering theory. The AIC of the Independence model (6385.36) was much higher than either. Factor loadings were high for the CP Factor, with four out of five items exceeding .60, and moderately high for the ES, HI, and PB factors. Loadings were lower and more difficult to interpret for the PP Factor. Three of the five items linked to this factor were at or below .30.

*English 4 F 1S Model.*

The 4F1S model for the SDQ in English was a moderate fit, with the NFI (.84), the CFI (.88), and the GFI (.85) each exceeding .80. The SRSMR of (.12) and RMSEA (.08) indicated moderate fit. The 4F1S model accounted for between 8% and 53% of the variance in each individual item. The saturated model had a much lower AIC (650.00) than did the 4F1S model (1141.45), indicating that the saturated model was a better fit, when not considering theory. The AIC of the Independence model (6385.36) was much higher than either. Factor loadings were high for the CP Factor, with three out of five items exceeding .60, and moderately high for the ES, HI, and PB factors. Loadings were again lower and more difficult to interpret for the PP factor.

*Spanish 5 F Model.*

The 5F model for the SDQ in Spanish was a moderate fit, with the NFI (.74), the CFI (.80), and the GFI (.85) each at or approaching .80. The SRSMR (.08) indicated good fit. The RMSEA (.08) indicated a moderate fit. The 5F Model accounted for between 2% and 38% of the variance in each individual item. The saturated model had a significantly lower AIC (650.00) than did the 5F Model (1103.85), indicating that the saturated model was a better fit, when not considering theory. The AIC of the Independence model (3330.00) was much higher than either. Factor loadings were moderate for the CP, ES, and PS factors. Loadings were lower and more difficult to interpret for the PP and HI factors. Three of the five items linked to the PP Factor were below .30. Although two items associated with the HI Factor loaded highly onto their factor, two of the loadings were below .30.

*Spanish 5 F 1S Model.*

The 5F1S model for the SDQ in Spanish was a poor fit, with the NFI (.70), the CFI (.76), and the GFI (.82) far below .92. The SRSMR (.09) and RMSEA (.09) both indicated moderate fit. The 5F1S model accounted for between 2% and 46% of the variance in each individual item. The saturated model had a much lower AIC (650.00) than did the 5F1S model (1270.86), indicating that the saturated model was a better fit, when not considering theory. The AIC of the Independence model (3330.00) was much higher than either. Factor loadings were moderate for the CP, ES, and PS factors. Loadings were lower and more difficult to interpret for the PP and HI factors. Three of the five items linked to the PP Factor were below .30. Although two items associated with the HI Factor loaded highly, two of the loadings were only slightly above .30.

*Spanish 4 F 1S Model.*

The 4F1S model for the SDQ in Spanish was a poor fit, with the NFI (.68), the CFI (.74), and the GFI (.83) far below .92. The SRSMR (.10) and RMSEA (.09) both indicated moderate fit. The 4F1S model accounted for between 5% and 41% of the variance in each individual item. The saturated model had a much lower AIC (650.00) than did the 4F1S model (1259.50), indicating that the saturated model was a better fit, when not considering theory. The AIC of the Independence model (3330.00) was much higher than either. Factor loadings were moderate for the CP, ES, and PS factors. Loadings were lower and more difficult to interpret for the PP and HI factors. Two of the five items linked to the PP Factor were below .30. Although two items associated with the HI Factor loaded highly, two of the loadings were below .30.

*English versus Spanish Models.*

Data from the English forms fit the models better than did data from the Spanish forms. The average NFI, CFI, and GFI for the English models were all substantially higher than averages for the Spanish

models. The averages of the Standardized RMRs (.09) and RMSEAs (.08) were identical across models. Models in both English and Spanish accounted for approximately the same percentage (2% to 50%) of the variance in each individual item. Factor loadings were much higher across the English models than across Spanish models. Items on the English models loaded highly onto the CP Factor, and moderately onto the EP, HP, and PB factors. Items did not load well onto the PP Factor. Factor loadings were moderate, at best, for the Spanish models. Similar to the English models, items related to being solitary, getting bullied, and relating better with adults than children loaded poorly onto the PP Factor. Unique to the Spanish model, loadings were inconsistent on the HI Factor.

## VIII. Discussion

This study contributes important information regarding the reliability and validity of scores derived from the SDQ Spanish version for parents of preschoolers. Parent raters who took part in CUIDAR assessed their preschool age children's behaviors using the SDQ as part of their entrance into the intervention program. In this study, the psychometric properties of scores were assessed in order to explore mean rating differences between the English and Spanish versions of the SDQ, along with coefficient alpha indicators of reliability at the scale and composite level, and internal structure validity evidence. Results indicated scale mean scores were very similar across both forms of the SDQ. Reliability coefficients indicated alphas were higher for scores obtained on the English form compared to the Spanish form. Finally, the 5F Model that is predominant in the literature was the best-fit and most valid representation of all 25 items of the SDQ, regardless of the language of the form. The 5F1S model was comparable in English, and the 4F1S model that is consistent with SDQ scoring instructions was the worst fit regardless of form. The English form yielded data that fit better across models than did the Spanish form.

### *a) Group Differences*

The first research question was whether there are mean differences in SDQ scores for students from Spanish-speaking families versus students from English-speaking families. Mean ratings were similar across English and Spanish forms, with significant but small mean differences on the HI scale and the TD composite. The finding that these differences were small is supportive of the SDQ, indicating that it is not systematically biased to produce higher scores when used with either population.

### *b) Precision of Measurement*

The second research question addressed how well the items from the two forms fit together to yield scale scores. Coefficient alphas for scores on the SDQ scales were compared at the scale and composite levels. Alphas were higher across scales on the English form of the SDQ, compared to the Spanish form. The TD scores in English were high enough to make low stakes decisions, or to be included as one of multiple measures in a thorough assessment. The score reliabilities were not high enough for making critical clinical or educational decisions.

Prior research has yielded similar reliability coefficients at the scale and composite level. Goodman (2001) found coefficient alphas in the low to moderate range, with only the TD composite in the good range. Hawes et al. (2004) and Muris et al., (2002) obtained similar results, with alphas ranging from the low to moderate range at the scale level, and above .80 and in the good range for the TD scale. It is difficult to obtain alphas in the adequate or good range when there are only five items on each scale. Although a benefit of the SDQ is its brevity, increasing the number of items could make scores more reliable.

### *c) Internal Structure Validity Evidence*

The third research question involved whether the factor structure of the SDQ in Spanish differed from the factor structure of the SDQ in English. Three factor models were evaluated through CFA on both the English and Spanish forms of the SDQ. The first was a 5F Model, which has been confirmed in prior literature to fit. It consists of five factors from which scale scores are yielded: ES, CP, HI, PP, and PB. The second model evaluated was a 5F1S model with all factors nested within the TD factor. The third model evaluated was a 4F1S model with four factors nested within the TD composite, isolating the PB factor, as is implied by the SDQ scoring instructions.

In this study, regardless of whether the form was completed in English or Spanish, the 5F Model was the best fit and most valid representation of the 25 items on the measure. Factor loadings were consistently higher from the English forms compared to the Spanish forms. However, across models and forms, loadings were consistently very low for items on the PP Scale. This may be due to some items within this index being reverse scored and others being scored normally. Having a more uniform scoring system within the index would likely yield higher loadings.

Prior research has consistently indicated that the 5F Model is a good fit. Similar to this study, Goodman (2001) confirmed the 5F Model and indicated that all 25 items loaded onto their intended factors. Hawes and Dadds (2004) also confirmed the 5F Model with parents of Australian children, ages four through nine. They found that factor loadings were generally stronger for boys than for girls, but that the design was a good fit regardless of gender.

A strength of the current study is that CFA was used with multiple models. Prior studies, which

assessed the factor structure of the SDQ, did not do this. Goodman (2001), Hawes and Dadds (2004), and Muris, Meesters, & van den Berg (2002) all confirmed the 5F model of the SDQ, but did not include comparison with other models. For the English form, the 5F1S was a comparable model to the 5F, providing some evidence for pooling the scale scores into a TD composite. This model faired better than did the 4F1S that is implied by the scoring instructions, which do not include the PB in calculation of the TD. These findings indicate that, when using the English form, a method that calculates a TD score from all five subscales might be superior. For the Spanish form, neither the 5F1S model nor the 4F1S model fit the data well.

Regardless of model, the internal structure evidence for the Spanish form was inadequate and inferior to the evidence for the English form. Similar to findings obtained when using the Spanish form of the BERS-2, these results indicate that the properties of the SDQ are negatively altered through the translation process (Sharkey et al., 2009). Coupled with the findings on reliability, these results indicate that the Spanish form of the SDQ might be revised and further evaluated before being used in educational or clinical settings to measure or identify behavioral problems in preschool children. The findings also reinforce that whenever possible, researchers should evaluate and report on the reliability and validity of scores obtained in their research, rather than relying solely on prior measurement studies (e.g., Yin & Fan, 2000; Lakes, 2012).

*d) Implications for Practice*

When using the SDQ for a preschool, Spanish-speaking, Mexican-American population, the current findings indicate that a conservative decision rule should be used. This recommendation is based on the TD score being lower on average, and the reliability and validity evidence being poorer, compared to the evidence for the English form. Collectively, these results indicate that scores from the Spanish form will be lower, and that error will be contributing to more of their variance. Therefore, difficulties will be harder to detect (i.e., less likely to be manifested in high scores). If the Spanish form of the SDQ is used for a low stakes purpose (e.g., identification for a group behavioral program), a lower cut score might be considered. However, it is always preferable to use a measure that yields more reliable scores from which more valid inferences can be made, and the current study provides no support for using the Spanish form of the SDQ for high stakes decisions.

Depending on the specific type of behavior problem for which one is screening, other measures such as the SAS-A and CBCL have been shown to produce scores with acceptable psychometric properties in their Spanish versions. Compared to the SDQ, the SAS-A when translated still produces scores that demonstrate good reliability and internal structural validity. However, it is not as similar to the SDQ as one would like because it can only be used in an adolescent population with self-raters.

The CBCL is another measure that can be used for many of the same purposes as the SDQ (Goodman & Scott, 1999). The CBCL is widely used in schools and has good psychometric properties in its Spanish translated version. Furthermore, as mentioned earlier, studies have found that the SDQ and CBCL are comparable in many ways. The two measures correlate highly, address similar behaviors, and discriminate between low and high-risk populations (Goodman & Scott, 1999). Therefore, the CBCL in Spanish may be preferred to the SDQ in Spanish, for preschool Mexican-American children.

*e) Limitations*

The generalizability of these findings is limited in several ways. The SDQ has forms for children up to age 16; however this study is limited in that only children 3 through 5 were rated. Mean ratings may have differed if the sample represented a larger age range of students, and prior research has demonstrated that restriction of range in a study sample can reduce the observed reliability of scores (Henson, Kogan, & Vacha-Haase, 2001; Lakes, 2012). Also, there was an unequal distribution of ethnicities represented in this sample, with Mexican-American children being the most highly represented. It is unknown how generalizable the results of this study would be in communities where the Mexican-American population is not as high. The most conservative interpretation would be that the results are only generalizable to the Spanish-speaking population of southern California. While it is likely that results would be similar for many surrounding areas in California, less is known about the generalizability of the findings to Spanish speaking populations from cultures and geographical regions not represented in this sample. Lastly, the current study did not include any measure of acculturation, which could be a confounding variable when looking at the psychometrics of an instrument across forms defined by language.

*f) Future Research*

Future studies regarding the SDQ could analyze changes in mean ratings as children grow older. In this study, SDQ ratings were only taken at the point of entry into the CUIDAR program. It would be helpful to examine how ratings may change over time as children develop.

Similarly, it would be interesting to interpret what similar ratings over time may indicate about the stability of problems or areas of strength that youth possess.

Another area of research could involve examining mean parent ratings of the English and

Spanish forms of the SDQ, using groups of parents born in Mexico and born in the United States, in order to analyze whether country of origin impacts the relationship between language and psychometrics of the SDQ. This design could also be expanded to other counties.

Research could also be focused on improving the SDQ at the item level. One might consider comparing the standard version of the measure which has three-point item level response choices with versions that have four or five levels of response. It is possible that the latter would have better psychometric properties.

Finally, the factor structure of the SDQ should be evaluated in all of the languages into which the measure has been translated. Doing so would indicate whether the translation of the SDQ items into different languages has resulted in changes in psychometric properties.

## IX. Conclusions

As part of their entrance into CUIDAR, parent raters assessed their preschool age children's behaviors using the SDQ. Data was collected over a four-year period, from 2004-2008. In this study, the psychometric properties of scores were assessed in order to explore mean rating differences between the English and Spanish versions of the SDQ, along with coefficient alpha indicators of reliability at the scale and composite level, and factor structure differences. Results indicated that mean ratings of the individual scales and the TD scales were very similar across both forms of the SDQ. Reliability coefficients indicated alphas were higher for the English form compared to the Spanish form at the scale and composite levels. On the TD composite, there was good reliability when the form was completed in English. Finally, the 5F Model was the best-fit and most valid representation of the 25 items of the SDQ, despite the language of the form. The 5F1S model was also a good fit for the English form, but not for the Spanish form. The English form yielded data that fit better, compared to that yielded by the Spanish form, regardless of model. Thus, it is important for practitioners to utilize caution when using the SDQ in a Spanish-speaking, Mexican-American population of preschool children.

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# Social-Emotional Learning: Modifications to a Social Skills Training Program for Adolescents with Moderate to Severe Communication Disorders

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*Abstract-* For social success, a student must not only demonstrate social competence, but have the ability tointegrate emotional intelligence (EI) and executive functioning (EF) as well (January, Casey, & Paulson, 2011). Communicative effectiveness is often hindered in students with deficits in these areas. To address these challenges, it is not uncommon for this population to participate in a myriad of interventions collectively referred to as social skills training (SST). These types of interventions are frequently provided within the context of a one-on-one setting or a small group referred to as a "social skills group" (SSG)(Moore & Montgomery, 2007). To date, SST provided through a SSG service delivery format has been conceptually viewed as a modelfor younger students and/or students with proficient language skills and limited interfering behaviors (Cook et al., 2008). The purpose of the current study was to determine if modifications to an SST curriculum teaching emotional learning through self-regulation and self-awareness as well as the development of EF skills provided in SSG service delivery format could be effective for students with moderate to severe communication deficits.

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# Social-Emotional Learning: Modifications to a Social Skills Training Program for Adolescents with Moderate to Severe Communication Disorders

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*Keywords: social skills intervention, emotional intelligence, executive functioning.*

## I. Introduction

Academic and social success is not only reliant on social competence but also requires the integration of emotional intelligence (EI) and executive functioning (EF) (January, Casey, & Paulson, 2011).Students with deficits in these areas often experience extreme difficulty achieving communicative effectiveness in school. They are challenged daily in social interactions, often due to issues with self-regulating inappropriate behaviors and recognizing others' emotional states. These students often participate in a myriad of interventionscollectively referred to as social skills training (SST). These SST interventionsare often provided either in a one-on-one session or in a small group setting commonly referred to as a "social skills group" (SSG) (Moore & Montgomery, 2008). SSGs can be comprised of children with similar deficits or include typically developing peers as models or facilitators.

Although found to be effective for younger children and those with proficient language skills (Cook et al., 2008), SST remainsdebatable for older students with significant language impairments (SLI) (Forness, 2005), or high-incidence disabilities (i.e., disabilities that are identified frequently in the school setting)(Gresham, Sugai, & Horner. 2001). The challenges of students with deficits in social competence, EF, and Elare often compounded by the presence of significant interfering behaviors (De Roiser, Swick, Orstein-Davis, Sturtz-McMillen,& Matthew, 2011; Reid & Nelson, 2002).

## II. A Review of the Literature

It is without question that the ability to interact with peers is one of the most important aspects in a student's development. Social competence has significant predictive value for a student's long-term psychosocial adjustment (Greshamet al., 2001). The ability to initiate and maintain successful interactions, collectively referred to as *social competence*, has been one of the distinguishing characteristics of children diagnosed with high-incidence disabilities (Gresham et al.). Autism spectrum disorders (ASD), intellectual disability (ID), and other health impairment (OHI), are among some of the diagnoses characterized by deficits in social competence. It has been suggested in recent literature that these students often struggle to develop and maintain positive peer relationships in school, often failing to initiate interactions with others, maintain reciprocity during conversation, share enjoyment, take others' perspectives, or infer the interests of peers (Flynn & Healy, 2012). For these students impairments

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in social competence are often compounded by impaired skills related to EI and EF.

Of particular interest to this study is the influence EI plays in being a socially competent person. Emotional intelligence has been described as one's ability to recognize emotions in one's self or in others, facilitate thought relating to those emotions, comprehend the meaning of these emotions, and manage and integrate this emotional information (Mayer & Salovey, 1997; Rieck & Callahan, 2013). Development of EI may be further impacted secondary to concomitant cognitive deficits, particularly those related to EF skills. EF skills encompass those higher-order cognitive thinking skills one utilizes to reason through problems, formulate plans, self-regulate emotions, and inhibit sociallyinappropriate behavior to optimize success in unfamiliar situations (Gilbert & Burgess, 2008).These skills typicallyemerge by approximately eight years of age (Diamond, Kirkham, & Amso, 2002). Students who fail to develop EF skills are often faced with a combination of poor impulse control, cognitive inflexibility, poor planning, and poor self-regulation of emotion and behavior (Stichter et al., 2010). Proficiency in EI and EF skills is dependent on how well these skills can be integrated by the individual. Without the foundation of EF skills, a student's EI is impacted as the yare faced with immense difficulty understanding their own internal states, even more so formulating an understanding of what information is being presented externally from others.

Executive functioning requires the integration and processing of information from a wide range of internal and external sources (Stichter et al., 2010). Integrating external emotional information of others (i.e., facial expressions/emotions, body language) might not be accomplished when EF skills are impaired. For example, if a peer is angry, his face may be frowning, his body tensed, and his tone of voice higher or lower than usual. External information such as these can be integrated and perceived as anger and/or aggression. For students with deficits in EF, receiving, integrating, and comprehending the varying emotional cues is difficult to accomplish and EI then remains impaired as well. In addition to problems recognizing external information, recognition of internal emotionsis also challenged. Understanding and managing internal states is a critical first step toward demonstrating appropriate behavior during interactions with others (Stichter et al., 2010).Thus, impairment in EF and, therefore EI, placesstudents at risk for losing opportunities to develop and maintain relationships with peers throughout the duration of their childhood and adolescent years in school.

A particularly stressful period in any student's life is adolescence (Stichter et al., 2010). For students with various diagnoses, this is when self-awareness of social imperfections emerges and they begin to recognize how they differ from their peers (Stichter et al.). It is in early adolescence when the development and refinement of social skills occur; thus, interventions should be implemented, not only with adolescents who have average to above average intellect, but also with those students who have intellectual impairments (Stichter et al.).

As previously mentioned, a popular approach to promote skill remediation is *social skills training* (SST). In this approach, clinicians utilize strategies to promote skill acquisition, generalization, and maintenance by teaching target skills in naturalistic environments through modeling and coaching appropriate behaviors, and reinforcing the target behaviors consistently (Greshamet al., 2001). Delivery of SST may be provided individually to a child in a one-on-one setting; however, a group setting, known as a social skills group (SSG), may better develop social skills by allowing adolescents to interact with peers while receiving guidance from clinicians or facilitators (Tse, Strulovitch, Tagalakis, Meng, & Frombonne, 2007).In order to increase a student's motivation to spend time with their peers and subsequently develop friendship skills it is important that these SSGs be fun and engaging (Tseet al., 2007).

Review of the literature indicates that many types of SST interventions uses Gas a model of service delivery. Lerner and Mikami (2012) conducted a randomized control trial with students with proficient language skills comparing the SSTs Skill streaming (Goldstein & McGinnis, 1997) and Sociodramatic Affective Relational Intervention (SDARI) (Lerner & Levine, 2007). Skill streaming involves teaching the discrete behavior steps and rules of a successful social interaction. SDARI indirectly trains social skills through games and naturalistic interaction with students who have deficits in EF, EI, and overall social competence. Results of this study indicated that both groups improved in their ability to develop friendships with peers and staff members reported improvement in social skills (Lerner & Mikami), providing support for the use of SSGs for implementing SST interventions.

A similar population of students participated in Tseet al.'s (2007) study examining the effectiveness of SST provided within an SSG composed of adolescents with diagnoses of Asperger's syndrome and high-functioning autism. Tse et al. specifically indicated that SSGs could be an effective model of service delivery for verbal adolescents with deficits in EF, EI, and social competence. There has been growing interest in this model of service delivery for students with varying speech and language deficits. Flynn and Healy (2012) concluded that SSGs were effective across various age groups and diagnoses; however, there were limitations to their conclusions with application to students with more significant language impairments. SSGs are most beneficial for students who have more developed foundations in language(Flynn & Healy).Also, there is

little evidence that SST has long-term effects when used with students who have significant deficits in cognitive or emotional functioning (Gresham et al., 2001).

There is a preponderance of evidence of research related to the use of SSG for students with proficient language abilities. However, there is minimal research available on SSGs that includes the participation of students with high-incidence disabilities and SLI. With what little research is available for this population within an SSG, a clinician may be discouraged from using this service delivery model to implement intervention. The question remains: if appropriate modifications were made to a social skills intervention, could this population of students acquire, generalize, and maintain learned strategies?

The purpose of this study was to discover if modifications to an intervention curriculum addressing emotional learning through self-regulation and self-awareness and EF skills delivered in an SSG could be effective for students with moderate to severe communication deficits. The following research questions were considered prior to implementation of the intervention:

1. Will social skills training intervention be effective for students who present with significant language impairment secondary to other diagnoses (e.g., autism spectrum disorders)?
2. What types of modifications would be necessary to make the curriculum accessible and comprehensible?

## III. Methods

### a) Participants

Participants in this cohort study were nine students between the ages of 10:8 and 16:0with diagnoses of autism spectrum disorder (ASD), intellectual disability (ID),other health impairment (OHI), and multiple disabilities (MD)all with concomitant behavioral challenges including inappropriate vocalizations, task avoidance, inattention, playing with materials, tantrums, negative verbal statements, and inappropriate peer interactions(Reid& Nelson, 2002). A chart review of each participant was conducted to determine the severity of language impairment, all varying from moderate to significant. All participants attended an after-school SSG that targeted skills to support social competence through the development of EI and EF skills (DeRoiser et al., 2011). Of these participants, seven attended a non-public school (NPS), an institution dedicated to educating and providing therapy to children and adults with developmental and acquired disabilities, and two were home schooled. Five of the seven students who attended the NPS concurrently received weekly speech and language services focusing on social skills training in addition to the after-school SSGs. The speech and language services of the other two students addressed weaknesses in the areas of expressive and receptive language functioning only. The two students who were homeschooled did not receive any additional speech and language services outside of the after-school SSG. Table 1 provides participants' ages and eligibility for services.

*Table 1 :* Participant information

| Participant | Age | Grade | Primary Eligibility | Secondary Eligibility | Social Profile |
|---|---|---|---|---|---|
| 1 | 13:4 | 7 | OHI[1] | None | Active but odd |
| 2 | 11:3 | 5 | ASD[2] | None | Active but odd & aloof |
| 3 | 13:11 | 7 | MD[4] | OHI | Active but odd |
| 4 | 11:11 | 6 | ASD | None | Passive and aloof |
| 5 | 12:1 | 5 | ASD | SLI | Passive |
| 6 | 10:8 | 4 | ASD | None | Active but odd and aloof |
| 7 | 10:9 | 4 | ASD | None | Active but odd |
| 8 | 12:11 | NS[6] | ASD | None | Passive |
| 9 | 15:11 | 10 | ID | None | Active but odd |

*Abbreviations included in this chart defined: [1]OHI, Other Health Impairment; [2]ASD, Autism Spectrum Disorders; [3]ID, Intellectual Disability; [4]MD, Multiple Disabilities; and [5]SLI, Specific Language Impairment.*

Six out of nine of the participants introduced in Table 1presented with a diagnosis of ASD; however, participants with varying diagnoses were included in this study because they shared common intervention needs. Regardless of diagnoses, each participant demonstrated characteristics consistent with one of Wing's (1996) social profile descriptions of the children on the autism spectrum (i.e., *aloof, passive,* and *active but odd children*). Three of the participants were considered "aloof," and appeared withdrawn or indifferent to others in the group and were often difficult to comfort when distressed. Several participants were "passive" and often reluctant to participate in the group voluntarily, but if approached would cooperate on most occasions. A clinician or support staff member was often required to sit with these individuals and use encouraging language, such as "You will do great," or "Show your classmates how to do this," to elicit

participation. There were also the "active but odd" individuals who spontaneously participated but often in an odd or inappropriate manner. They paid little attention to the responses of others in the group and exhibited tangential speech that was monitored by clinicians. They were encouraged to become active listeners and allow for others to take turns during the session. Participants often varied between the three profiles and clinicians managed the behaviors accordingly. Table 1 lists the most salient social profile description of each participant.

*b) Procedures*

Prior to implementation of the Kimochis™ curriculum, each student participated in assessments to determine baseline competence in the areas of emotion identification, social skills, and higher-level language pertinent to successful social interactions in various environments. The students then completed the twenty-two-week intervention targeting these skills. To determine the impact of intervention on the students' social competence, the measures used to determine baseline information were then administered post-intervention.

*c) Baseline and Post-Intervention Measures*

Baseline and post-intervention measures were obtained to determine participants' response to the intervention. The following measures were used: Social Emotional Evaluation (SEE), identifying emotions in photograph cards, and the Social-Emotional Behavior Scale.

i. *Social Emotional Evaluation (SEE)*

The SEE is a norm-referenced test that evaluates social skills and higher-level language necessary for students to be successful in daily situations within multiple environments (i.e., school, home, community). Subtests target the recall of facial expressions, identification of common emotions, recognition of emotional reactions, understanding social gaffes, and understanding conflicting messages. Administration of the SEE is intended for students who are between the ages of 6:0 through 12:11 with scores representing typically developing students, students diagnosed with autism, and students with severe language deficits. Because the participants' ages fell outside the range of standardization, the researchers recorded the raw scores to represent pre- and post-intervention skill levels.

ii. *Emotion Identification*

Emotional Identification was an informal assessment administered by researchers using thirty culturally diverse photograph cards portraying the emotions of *happy, mad, sad, afraid, thoughtful, and surprised.* The six emotion words were printed separately from the photographs. Participants were required to match the printed emotion to the photograph shown. A total of 30 photographs were shown to each student (5 photographs of each emotion).

iii. *Social-Emotional Behavior Scale (SEBS)*

SEBS is a Likert-style observational checklist to rate a child's behaviors in multiple areas using a scale from 1 through 5 (a rating of "1" indicates "Almost Never" and a rating of "5" indicates "Almost Always"). The checklist provides information regarding issues of personal space, tone of voice, the use of positive and negative comments toward others, attention seeking behaviors, etc.

*d) Intervention and Curriculum*

Intervention occurred after school in a large classroom one time per week for sessionsforty-five minutes in length for a total of twenty-two weeks. The Kimochis™ curriculum was implemented; however, modifications were made to meet the learning styles exhibited by the students. The students sat in a semi-circle configuration as researchers demonstrated the lessons. At the end of the demonstration, participants were given the opportunity to practice the new social techniques with guidance and support of the researchers. An overview of the Kimochis™ curriculum has been provided along with a timeline of a typical forty-five-minute session.

Kimochis™ is a school-based social-emotional learning program designed to help students gain knowledge and skills to recognize while interacting with others and how to manage their own emotions during heightened emotional states. The curriculum is comprised of the following elements:

1. Introductory Lesson: Meet the Kimochis™
2. Keys to Communication
3. Feelings Lessons

*Table 2 :* Timeline of a forty-five-minute lesson

| Timeline | Description |
|---|---|
| 1 to 5 minutes | Review previous lesson's target skills. |
| 15 minutes | Teach and model new skills. |
| 15 minutes | All students practice the new skill in front of the group, with a student or adult partner, as a small group. |
| 10 minutes | Practice integrating previously learned skills with new skills. |

i. *Introductory Lesson*

In the introductory lesson, children were introduced to each of the Kimochis™ characters. Each character helps children learn about different emotions that represent aspects of their individual personality. The following is a brief description of each character, their personality, and the emotions associated with their personality:

- Cloud—Cloud is unpredictable and moody. He has a hard time controlling his emotions but does not mean to be hurtful. Cloud teaches children about the emotions happy, mad, and sad.
- Bug—Bug is a caterpillar that fears change. He is very thoughtful and considerate to all his friends but is afraid to try new things. Bug teaches children about the emotions happy, brave, and left out.
- Huggtopus—Huggs (short for Huggtopus) is very affectionate, strong, and easily excited. She is very well intentioned but sometimes has difficulty respecting others' boundaries. Huggs teaches children about the emotions happy, silly, and frustrated.
- Cat—The leader of the Kimochis™ is Cat. She is persuasive and determined but can be a bit bossy sometimes. Her bossy behavior can sometimes hurt others' feelings. Cat teaches children about the emotions happy, curious, and cranky.
- Lovey Dove—Considered the mothering figure of the group, Lovey Dove is sweet and nurturing. Lovey Dove tries very hard to make everyone happy and maintain harmony in the group. She sometimes feels sad when one of her friends feels let down. Lovey Dove teaches children about the emotions happy, proud, and hopeful.

ii. *Kimochis™ Keys to Communication*

The keys to communication represent communicative behaviors that need to be mastered to achieve successful communication interactions and to build positive relationships (Dodge, Rice, & Grimm, 2010). The keys are as follows:

1. Call someone's name, wait for eye contact, and give a communication tap, if necessary, before you speak.
2. Use a talking tone of voice instead of a fighting tone of voice.
3. Use a talking face and relaxed body language instead of a fighting face and tense body language.
4. Choose words that help instead of hurt.
5. Be brave and redo hurtful moments.
6. Be kind and let people try again.
7. Assume the best.

Each key was taught through multiple activities that all owed the students to practice specific behaviors that were vital under each key. Children discussed the feelings associated with correctly using the keys versus when someone does not (ex. How do you feel when someone uses a talking voice versus when they use a fighting voice?). Each activity taught a skill that needed to be grasped for successful performance of the key. For example, Key 1 (i.e., call someone's name, wait for eye contact, and give a communication tap before you speak)was broken down into 5 different activities in order to teach all the necessary skills for execution of the key . Activities focused on each skill individually and concluded with the students practicing all of the skills under the key in predictable situations.

iii. *The Feelings Lessons*

The keys of communication were reinforced in Feeling Lessons. Each Feeling Lesson focused on a single emotion and contained activities on how to recognize and manage the target intrinsically and in others. Emphasis was placed on self-awareness, self-regulation, and "re-doing" or correcting one's actions. Participants discussed what situations provoke certain emotions and discussed how they often react and how they could react differently the next time they feel a certain way. Lessons had activities and tips specific to early childhood and elementary age students. Each lesson contained multiple activities that allow the students to practice multiple aspects of the emotion or communication behavior being taught. The program included multiple learning activities and encouraged the instructor to choose activities that catered to the needs of his/her students.

## IV. Results

The overall purpose of this study was to determine if modifications to an intervention curriculum specifically addressing emotional learning through self-regulation, self-awareness, and EF skills provided in a SSG setting could be effective for students with moderate to severe communication deficits. Two research questions were posed prior to implementation of the intervention: 1) Will social skills training intervention be effective for students who present with significant language impairment secondary to other diagnoses (e.g. autism spectrum disorders); and 2) What modifications would be necessary to make this curriculum accessible and comprehensible? This preliminary investigation found that SST provided in the context of a SSG model is effective for students with SLI secondary to other diagnoses. At the beginning of the intervention program, the first lesson was presented to the group with the original language and format provided in the curriculum. As the various needs of the students became more apparent, modifications to the curriculum were made (e.g., repetition of key concepts, sharing of examples, demonstrations, etc.) and consistently used throughout each lesson to maximize

learning. Table 3 provides a description of the modification simple mented throughout the course of the study.

*Table 3 :* Modifications

| Modification | Description |
|---|---|
| Repetition | Frequent repetition of key concepts in each lesson. The clinicians repeated the concept 2-3 times with a demonstration of a typical social situation in which the concept would occur. |
| Sharing Examples | Students shared personal experiences related to the key concept being demonstrated. Some students readily volunteered, whereas others required more encouragement to participate (i.e., allowing students to choose a friend to provide the next example, allowing students to choose a partner for the example to reduce anxiety, verbal and tactile prompts to encourage device use). |
| Demonstration& Practice | Clinicians provide 1-2 demonstrations of typical social situations in which a key concept occurs. Each student then demonstrated a similar situation individually, with a partner, or with a small group of students under guidance of the clinicians. |
| Comprehension Checks | Checks for comprehension were frequently employed to confirm students' understanding of the information. Students were asked questions such as "What did he just say?" or "How did that make him feel?" to keep them engaged in the lesson. |
| External Motivators | Some sessions required external motivators, such as being able to hold a favorite Kimochis™ character, as a way to maintain engagement and interest in the lesson. Eventually, these motivators were faded out. |
| Dividing the lesson into two lessons | Some concepts considered more difficult to grasp were divided into two lessons. This extended the overall length of the 18-weekintervention but was necessary for the students to best comprehend the lesson. |
| Review of the previous lesson | Before the introduction of a new lesson/concept, the clinicians deliberately asked if the students could remember and demonstrate what was taught previous session. These newly learned concepts were integrated into each new lesson for further reinforcement. |

The participants' baseline performance was measured prior to implementation of the Kimochis™ intervention utilizing the Social Emotional Evaluation (SEE), Emotion Identification, and the Social Emotional Behavior Scale. Response to the intervention was similarly evaluated upon completion of the twenty-two-week intervention. Based on the results of testing and qualitative accounts of skill improvement from teachers, therapists, and other staff members, the modifications were successful in allowing the students to comprehend and use the skills taught in a SSG. For several participants in particular, gains were noted in the comprehension and practical use of learned social skills, pragmatics, and emotion identification. Also of importance, improvement in behavior regulation, that is, the individual's ability to maintain low-reactivity to an emotion-inducing stimuli (Blair, 2002), was also reported. Participants who typically cried, yelled, ran away, or became physically aggressive at the presentation of undesired stimuli (e.g., sounds, activities) upon completion of the intervention, were capable of recognizing that the stimuli was unfavorable and either asked to take a break or continued with the activity until its completion.

Excluded from the results is participant 7, who did not return to the After School Club after the sixteenth week, and participant 8, who was unable to complete post-intervention evaluations due to inconsistent attendance during the final evaluation period in addition to failed return of pre- and post-intervention behavior scales. Quantitative results for the remaining participants are represented in Figures 1 through 3, followed by qualitative information gathered from faculty and staff who worked closely with the participants.

*a) Social Emotional Evaluation*

All participants improved in their performance on the Social Emotional Evaluation as seen in Figure1. Participants 4 and 6 were only able to complete half of the Social Emotional Evaluation prior to implementation

of the intervention due to difficulty with behavior regulation; however, both participants were able to complete all post-intervention evaluation procedures.

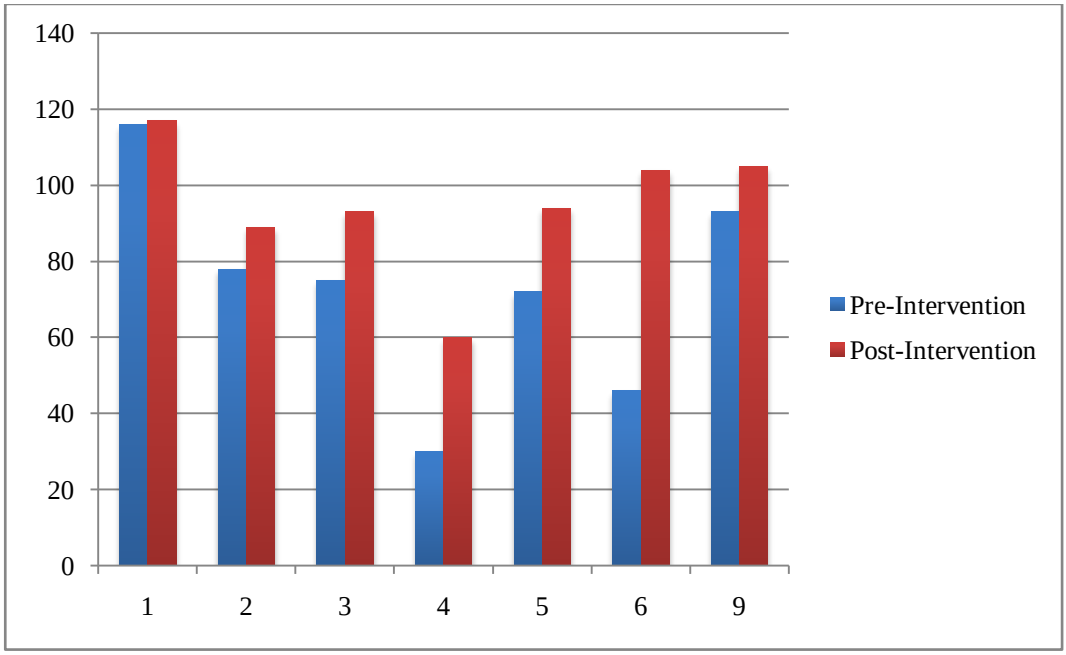


*Figure 1 : Social Emotional Evaluation*

*b) Emotion Identification*

Of the seven participants, five improved in their identification of emotions from photographs as shown in Figure2. Participant 6 was considered untestable during the pretest phase due to difficulty with behavior regulation. Two participants 1 and 2did not display improved emotion identification from photographs.

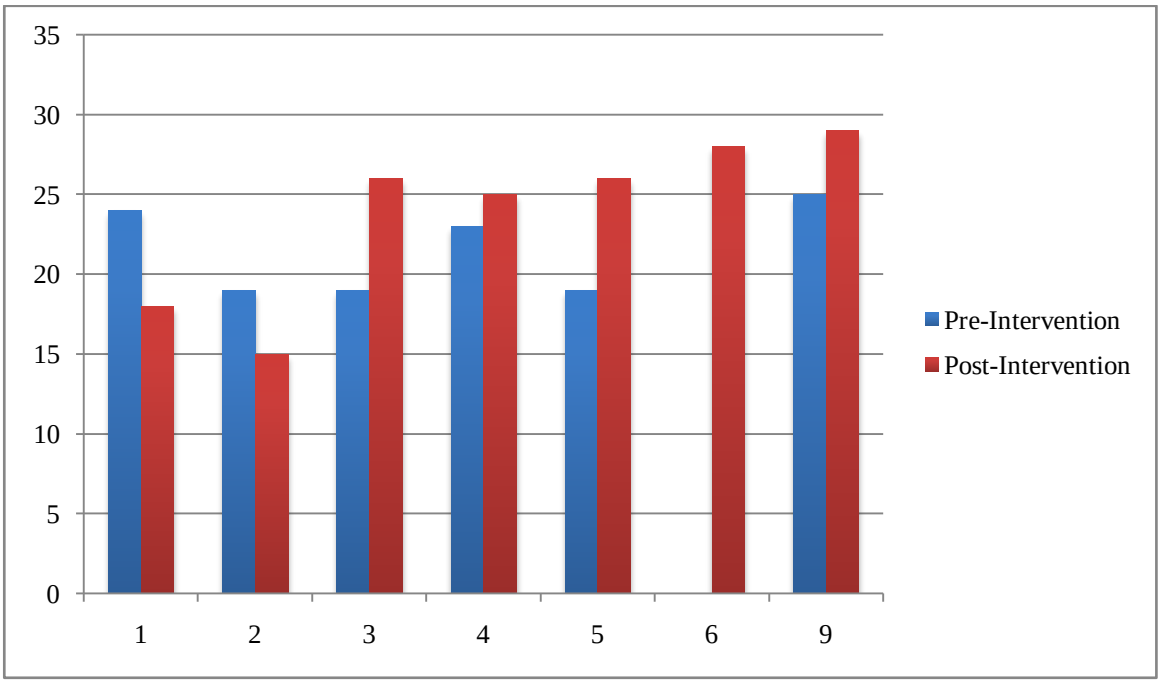


*Figure 2 : Emotion Identification*

*c) Social Emotional Behavior Scale*

Five participants were given higher scores by their classroom teachers on the Social Emotional Behavior Scale when compared to their scores prior to intervention. Participant 9 pre-intervention data was not returned, but post-intervention data was collected. Two participants received lower scores upon post-testing from their classroom teacher. Factors that may have contributed to the lower scores could have been that the scales were completed under different circumstances. For participant 2, the follow-up scale was completed quickly (i.e., <5minutes) and indicated that there was no improvement made after intervention and reflected worsening of behaviors within the classroom.

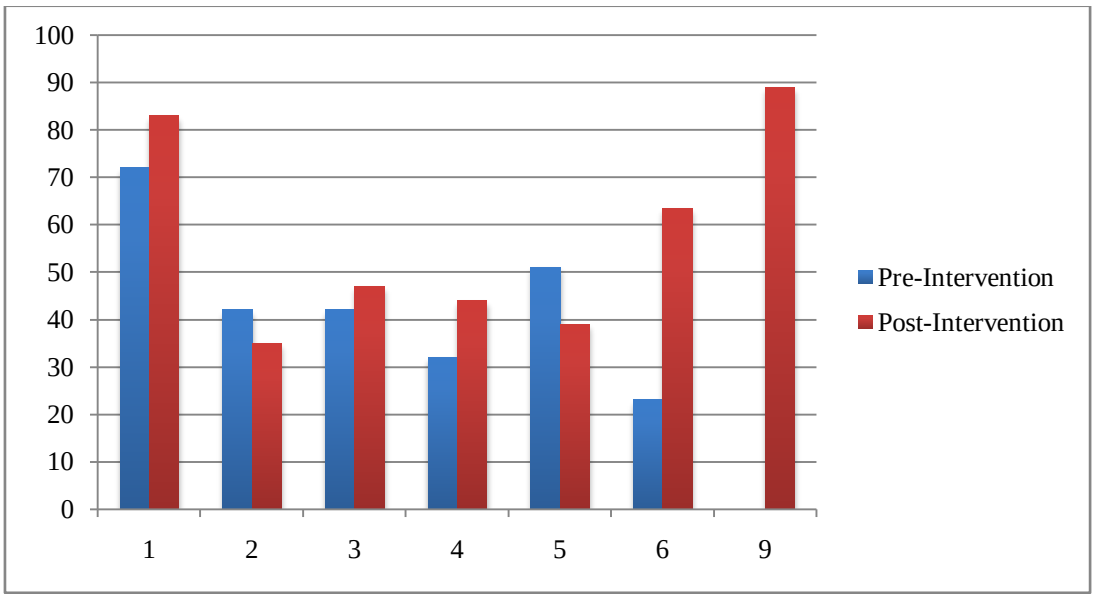


*Figure 3 :* Social Emotional Behavior Scale

The results of the post-testing measures indicate increased social competence on the part of each participant, which subsequently resulted in gains in the areas of EI and EF. This particular group of participants was deemed difficult to assess in a formal manner by the faculty and staff. Care was taken to gather qualitative data on each participant's growth with such methods as observations within the classroom, playground, and group settings, in addition to parent and teacher interviews. The following descriptions provide a brief summary of the information collected:

- Participant 1, an adolescent male with a diagnosis of OHI, was best described as "active but odd" (Wing, 1996). His classroom teacher shared that he often experienced difficulty recognizing when a joke was no longer funny or was hurting a peer's feelings. Upon completion of the twenty-two-week intervention his classroom teachers noted improvement in his ability to recognize when he had unintentionally offended another person and he was beginning to resolve conflicts without the guidance of an adult.
- Participant 2, an adolescent male with a diagnosis of ASD, was best described as a combination of "aloof" and "active but odd" individual. Heoften appeared uninterested in social interactions. He would join in an interaction by shifting the topic to one of his choosing, often times ignoring the topic of the interaction. In an attempt to blend into the conversation he often engaged in self-talk about an unrelated topic. Upon completion of the intervention program hedemonstrated improvement in the areas of topic maintenance and emotional understanding.
- Participant 3, a preadolescent male with the diagnosis of MD, was described as an "active but odd child". Although non-verbal, heenjoyed participating in social interactions and showed a great desire to interact with others. In an attempt to engage with another student he would impulsively grab the student by the arm or around the neck and hug them tightly. A reduction in this impulsive behavior was noted throughout the course of intervention as he consistently used the communication tap to gain attention rather than his previously aberrant behaviors. He also began to match his facial expression with emotional statements made on his communication device (e.g. "I am sad").
- Participant 4, an adolescent female diagnosed with ASD, was categorized as both passive and aloof. She frequently appeared uninterested in others and engaged in self-talk about a preferred topic.

Occasionally, given verbal and physical prompting, she would interact for a brief period of time. Improvement was noted in the areas of gaining another's attention (using the communication tap), maintaining a social interaction, and behavior regulation. Deemed untestable at the beginning of the study, she was able to complete all aspects of post-testing.

- Participant 5, an adolescent male with the diagnosis of ASD, was described as passive. He would only participate in group activities given adult prompting and verbal encouragement. He demonstrated displayed improvement initiating interactions and many staff members reported a general increase in confidence.
- Participant 6, an adolescent male with the diagnosis of ASD, was categorized as both aloof and active but odd. He appeared withdrawn from social interactions and uninterested in others, often engaging in videogame-related self-talk. When asked to engage in an undesirable activity, heresponded with escape behaviors such as eloping, covering his ears, singing, and yelling. He was unable to complete pre-testing procedures due to difficulty with behavior regulation. A reduction in escape behaviors was noted, as well as overall improvements in topic maintenance and emotion recognition and regulation. He was able to complete all post-testing measures with minimal opposition.
- Participant 9 is an adolescent female with the diagnosis of ID, and fit the active but odd profile. Difficulties with emotional regulation were noted prior to the onset of the study. She was described as somewhat rigid in her thinking, over-reactive, and displaying a tendency of dominating social interactions with peers. Improvements were noted in her reactions to challenging situations and her regulation of the emotions that accompanied those situations.

As the results indicated, students with SLI do benefit from SST provided in SSGs. Accessibility to the curriculum was dependent on the consistent implementation of specific modifications.

## V. Discussion

As the results of this preliminary investigation suggest, SST provided through an SSG model can be effective for students who present with significant language impairment secondary to other diagnoses (e.g. autism spectrum disorders). The modifications used throughout the intervention period allowed the students access to material and skills previously deemed only accessible to students with higher-level language skills. The results of this study indicate the modifications made to the Kimochis™ curriculum assisted in fostering the development of self-regulation, self-awareness, and emotional learning in the context of a SSG for several participants. This study, to our knowledge, is the first addressing SST for adolescents with moderate to severe communication deficits. Improvements made on the SEE indicate overall increased understanding and/or use of social skills and higher-level language functioning, potentially impacting the participants' social competence. Success in social competence has positive implications for overall EI and EF skills (Gresham et al., 2001). It is suggested that the gains participants made in Emotional Identification also contributed to their development of EI and EF skills. Teacher responses on the Social Emotional Behavior Scale indicated improvements in the area of social competence as seen in the classroom for five of the seven participants. These improvements included increased independent problem solving, increased emotional awareness and regulation, and observed generalization of targeted intervention skills (i.e. communication tap, stop hands, talking and fighting voice).

Monitoring progress with students who present with communication disorders of varying degrees can be challenging. Students with higher-level language skills may perform better on standardized tests with a stronger language base than those who have SLI (Adams, Lloyd, Aldred, & Baxendale, 2006). Standardized tests and some informal measures are a method of measuring change of specific skills; however, qualitative data regarding behavior, classroom engagement, and generalization of skills is an essential supplement to progress monitoring with a population as diverse as the one included in this study.

The modifications used during intervention can be easily applied to any SSG to allow accessibility of the curriculum for students with a broad spectrum of communication disorders. Modifications such as repetition, comprehension checks, review of the previous lesson, sharing examples, dividing one lesson into two lessons, and demonstration are supported by the literature surrounding this population. Leaf, Dotson, Oppenheim, Sheldon, and Sherman (2010) found that the use of demonstration, repetition, and comprehension checks embedded within an SST procedure was effective in the acquisition of social skills in children with communication deficits secondary to a diagnosis of ASD. Strain and Odom (1986) encouraged review of targeted social skills prior to the demonstration and practice of the target skills during therapy. By combining demonstration, role-play, comprehension checks, and review of students' performance during an SST program, Bass and Mulick (2007) found improvement in the basic communication of their participants. These modifications can be utilized in any SST or SSG to allow students with language difficulties to participate and reap the benefits of the intervention. Clinicians should consider the various presentations of

the students' communication disorders in determining the most effective modifications to be made.

There were several limitations noted during this study. One participant completed only sixteen of the twenty-two weeks and was unavailable for post-testing procedures. Two participants exhibited difficulties with attendance and were unavailable for pre- and/or post-testing procedures. Participant 1 and 2 did not show improvement on the Emotional Identification, however did improve on the SEE that targets emotional identification. Factors that may have contributed to this discrepancy might be fatigue from having been in class that morning, excitement because the school-wide awards ceremony was taking place, and/or quality of images depicting emotions on the SEE versus those on the Emotional Identification photographs. Several inconsistencies exhibited on the Social Emotional Behavior Scale by a classroom teacher of two participants (i.e., utilizing staff to assist in scale completion for one participant, inconsistent interpretation of ranking). This classroom teacher had also required multiple reminders to complete the behavior scale in a timely manner, and in two instances, required additional copies of the behavior scale due to having lost the original completed copies. There is no evidence of the consistencies between the lost scales and those that were submitted for the study. The parent of the home-schooled participant 8 failed to return both behavior scales despite multiple attempts by clinicians to retrieve the data. Using observational behavior scales, in general, has its limitations for progress monitoring. As seen in this study, the issue of guaranteed submission of the scales was a concern. To ensure submission of the scales by those involved with the participants, multiple reminders and additional replacement copies were provided; one remained unreturned by a parent for post-testing procedures. In addition to the concern of submission is the issue of reliability and validity of the scores given to each student. The scales are to be completed as objectively as possible; however, in some cases, this is not so. Factors such as evaluator's emotional state at the time of rating the student, time constraints, and use of other staff's opinion affect the accuracy of the scale. If students' behaviors are rated at moments that are not impacted by such factors, the observational behavior scales can provide useful information of how the student is generalizing learned skills into various environments.

## VI. Conclusion

This study of SST implementation in an SSG for adolescents who have moderate to severe communication deficits secondary to varying diagnoses is valuable to educators and clinicians working closely with this population. Many professionals have veered away from utilizing SSTs with students who exhibit these deficits because it has often been thought that successful SSTs require the students to have higher-level language skills. Modifications made to an intervention targeting social-emotional recognition and regulation allow students the opportunity to practice key skills necessary for development of social competence, EI, and EF skills. The results of this study indicate that modifications made to one curriculum led to gains in these areas; however, further investigation of modified interventions with this population is necessary to achieve consistent evidentiary support.

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# CAT Field-Test Item Calibration Sample Size: how Large is Large under the Rasch Model?

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*Abstract-* This study was conducted in an attempt to provide guidelines for practitioners regarding the optimal minimum calibration sample size for pretest item estimation in the computerized adaptive test (CAT) under WINSTEPS when the fixed-person-parameter estimation method is applied to derive pretest item parameter estimates. The field-testing design discussed in this study is a form of seeding design commonly used in the large-scale CAT programs. Under such as seeding design, field-test (FT) items are stored in an FT item pool and a predetermined number of them are randomly chosen from the FT item pool and administered to each individual examinee. This study recommends focusing on the valid cases (VCs) that each item may end up with given a certain calibration sample size, when the FT response data are sparse, and introduces a simple strategy to identify the relationship between VCs and calibration sample size. From a practical viewpoint, when the minimum number of valid cases reaches 250, items parameters are recovered quite well across a wide range of the scale. Implications of the results are also discussed.

*Keywords: field-test item calibration, calibration sample size, computerized adaptive test, pretest item calibration, WINSTEPS.*

*GJHSS-G Classification : FOR Code: 139999, 200499*

*Strictly as per the compliance and regulations of:*

# CAT Field-Test Item Calibration Sample Size: how Large is Large under the Rasch Model?

## Calibration Sample Size for CAT Field-Test Items

Wei He

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*Keywords: field-test item calibration, calibration sample size, computerized adaptive test, pretest item calibration, WINSTEPS.*

## I. Introduction

Unlike conventional paper-and-pencil tests (PPT), computerized adaptive tests (CATs) operate on the availability of a large pool of calibrated items (Glas, 2010). In order for items to be calibrated, they need to go through a field-testing procedure which aims at assigning test items to examinees so that responses can be available for item parameter estimation (Gage, 2009). In CAT, one popular field-testing procedure is to seed field-test (FT) items, also called pretest items, in among the operational items. Often, in a seeding design, FT items are stored in an FT item pool, and a predetermined number of them are randomly chosen from the FT item pool and administered to each individual examinee (Buyske, 1998). This seeding approach has several advantages, such as preserving the testing mode, obtaining response data in an efficient manner, and reducing the impact of motivation and representativeness concerns related to administration of pretest items to volunteers (Par shall, 1998).

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Once responses to FT items are collected, items can be calibrated using an estimation method. Today, a number of software packages do this quite well. Examples are the joint maximum likelihood (JML) method implemented by WINSTEPS (Linacre, 2001) and the marginal maximum likelihood (MML) method using BILOG-MG (Zimowski, Muraki, Mislevy, & Bock, 1999). As a key issue in FT calibration is to make sure FT items are on the same scale as the operational items, a linking/scaling strategy needs to be considered as a part of the scope of the FT item calibration process. In general, any linking/scaling procedures available for PPT can be applied to CAT, and choice of a linking strategy can be predetermined for most CAT testing programs given such factors as FT strategy. Meng and Steinkamp (2009), comparing several pretest item linking designs for a live CAT program by using both simulated and empirical data, suggested that the fixed-person-parameter (FP) estimation method outperforms both Fixed-item-parameter (FI) and Common-item linking with Stocking and Lord Transformation (CI) when pretest item response data are sparse. The FP method investigated by Meng and Steinkamp (2009) and in this study is commonly documented in the literature as Stocking's A method (Stocking, 1988), in which pretest items are estimated by fixing the examinee's final ability estimates. As examinees' final abilities are on the same scale as the operational item parameter estimates, the FT items are automatically on the same scale as the operational items. This approach has been widely applied by programs administering CAT exams under the Rasch model to derive pretest item parameter estimates (Meng & Steinkamp, 2009).

As each individual examinee typically responds only to a subset of FT items in an FT item pool, it is expected that FT item response data will be sparse—a challenge to the accuracy of CAT FT item parameter estimates (Ban et al., 2001).The sparseness rate may vary upon the proportion of the number of pretest items that an individual examinee is administered over the total pretest item pool size—the smaller the proportion, the higher the sparseness rate. What's more, a phenomenon called restricted range of ability (Haynie & Way, 1995; Hsu, Thompson, & Chen, 1998; Stocking, 1990) further complicates FT item calibration because item selection in CAT is customized to the examinee's

abilities—high-ability examinees tend to get harder items and vice versa for low-ability examinees. If the examinees used for the calibration sample do not vary enough in ability, item calibration results will be adversely impacted (Stocking, 1990). Fortunately, the seeding design which administers FT items at random regardless of the provisional ability estimates largely alleviates this concern.

One practice that alleviates the effects of sparseness of response data on item parameter estimation accuracy is increasing calibration sample size so that only when an item has been administered to a sufficient number of test-takers are its parameters estimated. However, the literature on CAT does not seem to provide a general guideline about how large a calibration sample size needs to be to be deemed sufficient. In the absence of specific recommendations for CAT, it may be helpful to consult equivalent guidelines for PPT. For example, Wright and Stone (1979) recommended using a sample size of approximately 200 when item parameters are calibrated under the Rasch model. Hambleton, Swamina than, and Rogers (1991) suggested that sample sizes of at least 1,000, 500, and 300 are needed to accurately estimate the item parameters of the three-, two-, and one-parameter item response models respectively. In a situation in which CAT FT item response data are sparse and sparseness rates vary as the result of different factors, such as the one discussed above, more studies are needed. What's more, in light of the fact that the Rasch model is widely used in the large-scale statewide assessments (e.g., The Delaware Comprehensive Assessment System, The Oregon's Assessment of Knowledge & Skills) delivered in the form of CAT, this issue merits a thorough investigation.

For this study, CAT pretest items were randomly selected out of a pretest item pool for administration and calibrated under the Rasch model (Rasch, 1960) by using the WINSTEPS and FP linking method. Specifically, this study endeavored to achieve three goals: 1) introducing a simple strategy to identify the calibration sample size; 2) examining how different calibration sample sizes affect pretest item parameter estimate accuracy; and 3) making recommendations regarding the minimal calibration sample needed to achieve reasonable item parameter estimate accuracy.

## II. Method and Research Design

A Monte Carlo simulation study was conducted to address the above research questions.

### *a) CAT Model*

The CAT model employed in this study mimicked a large-scale operational CAT program. The item response model used was the Rasch model. The item selection algorithm involved maximum information selection and content balancing, which involved balancing the content of items administered to match a pre-specified desired percentage of content categories. To control the item exposure rate, one out of a set of items that could provide the most information at the current ability estimate was randomly administered to the examinee. The Bayesian estimation method (Owen, 1973) was used initially, with a prior having a certain mean and standard deviation. The maximum likelihood estimation (MLE) method took over when both correct and incorrect responses were available. To pass the test, examinees needed to answer a minimum of 60 items, with content constraints placed on the set of the items. When 95% of the confidence interval around the candidate's current ability did not encompass the cut score, then the pass/fail decision was returned to the candidate. When the confidence interval included the cut score, candidates continued to take the test with the same content constraints until the current ability estimate was over or below the 95% confidence interval on the cut score or a maximum test length of 250 items was reached.

Field test items, seeded into the operational test, were selected for administration at slots randomly decided regardless of provisional ability estimate and content balancing. Each examinee was administered 15 pretest items, and they were randomly chosen out of 150 pretest items. Responses to field test items were not scored.

### *b) Item Pool Characteristics*

#### i. *Scoreableitem pool*

The scoreable item pool used in this study was simulated by mimicking the distribution of a real item pool used by a large-scale computerized adaptive test. The simulated item pool contained 1602 Rasch items distributed in eight content strands with a mean of -0.266 and a standard deviation of 1.76. By "scoreable", it means the responses to these items were counted toward the final ability estimates. Table 1 and Figure 1 present the descriptive statistics and distribution of item difficulties of this scoreable item pool.

#### ii. *FT item pool*

The FT item pool consisted of 150 items randomly selected from the scoreable item pool described above. Table 2 and Figure 2 present the descriptive statistics and distribution of item difficulties of this FT item pool. These FT items spanned a wide range of the ability scale.

*Table 1 :* Descriptive Statistics for the Scoreable Items

| | Total Number | Mean | Std. Deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| *b* | 1602 | -0.266 | 1.760 | -4.418 | 3.301 |

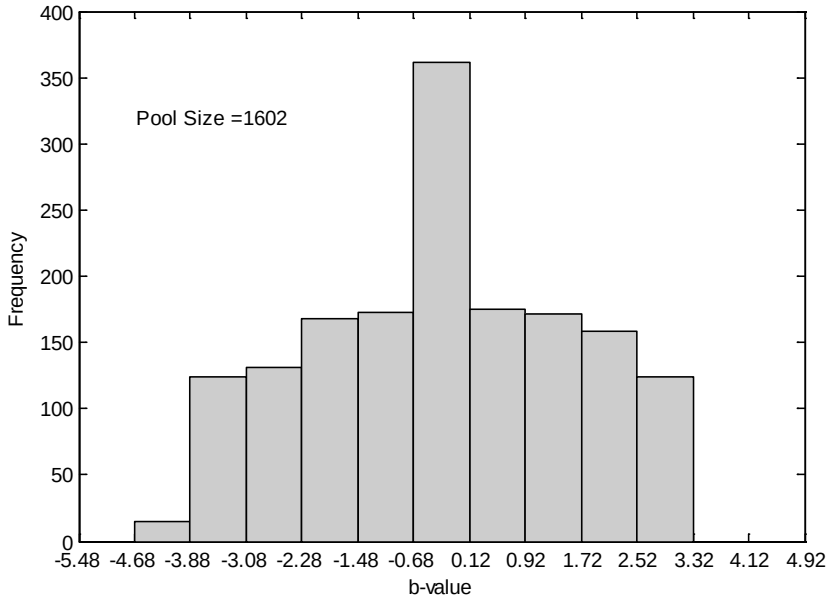



*Figure 1 :* Scoreable item difficulty distribution

*Table 2 :* Descriptive Statistics for the Field Test Items

| | Total Number | Mean | Std. Deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| *b* | 150 | -0.340 | 1.817 | -4 | 3.19 |

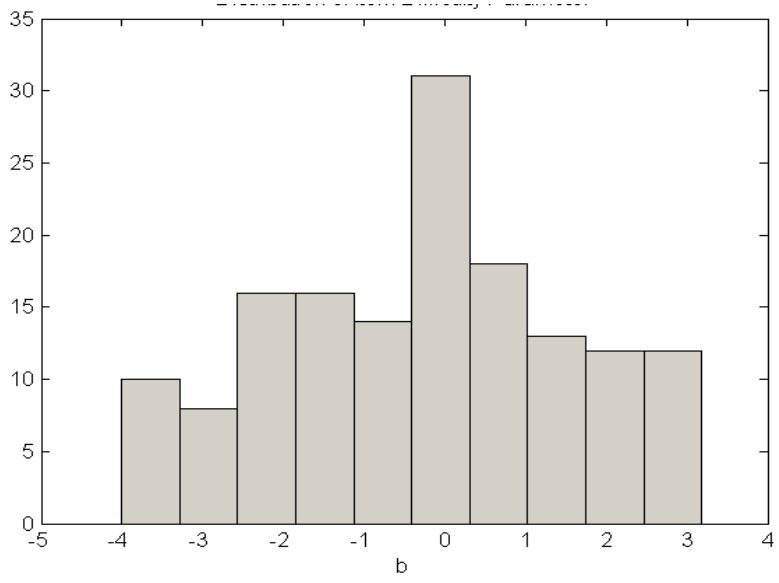



*Figure 2 : Field item difficulty distribution*

*c) Determine Calibration Sample Size*

As mentioned previously, the response data for the FT items was sparse because only a subset of items was selected out of the FT item pool. Although randomly assigning FT items to examinees could theoretically ensure that FT items—regardless of their difficulty

levels—get a similar level of exposure, it was observed that some items were exposed considerably more than others. Thus, the calibration sample size used in this study was decided by the minimum number of valid cases (denoted as VCs hereafter) that each field test item needed to contain.

To identify how different calibration sample sizes yielded different VCs, a simulation study was conducted first, in which pretest item selection procedure (i.e., random selection) was mimicked using the pretest item pool only. Specifically, the predetermined number of FT items was administered to target examinee populations of different sizes, and then the number of VCs that each pretest item contained was counted given a specific calibration sample. The simulation results revealed that, to make sure that each field test item contained at least 1000, 500, 250, 120, 60, or 30 responses respectively, the calibration sample sizes had to reach 11000, 6000, 3000, 1500, 850, or 470 correspondingly. In other words, given that 15 items were selected out of a 150-item FT pool, the approximate ratio between calibration sample size and VC was between 10 and 12. Table 3 indicates the relationship between calibration sample size and VCs for each FT item.

*Table 3 :* Relationship Between Calibration Sample Size and Minimum Number of Valid Cases (VC) Per Item

| Calibration Sample Size | 11000 | 6000 | 3000 | 1500 | 850 | 470 |
|---|---|---|---|---|---|---|
| VC | 1000 | 500 | 250 | 120 | 60 | 30 |

*d) FT Item Calibration Procedure*

The procedures used for field test item calibration were described as follows. For each calibration sample size, the calibration procedure remained the same. One hundred replications were run for each calibration sample size.

1. The pre-specified number (denoted as N) of examinees under "Calibration Sample Size" in Table 3 was randomly drawn out of the distribution with the mean of -.029 and the standard deviationof.4852. This distribution mimicked the target examinees' ability distribution for a large-scale CAT program. Each examinee was administered 15 FT items randomly drawn out of the FT item pool. This step yielded a sparse person-by-item response dataset of size N*150.
2. The computerized adaptive testing algorithm described under the CAT Model section was run to get an estimated ability for each of N examinees. This step yielded N ability estimates.
3. WINSTEPS was used to calibrate the FT items under default settings by fixing the estimated abilities obtained in 2).
4. Steps 1), 2), and 3) were replicated 100 times, resulting in 100 sets of item parameter estimates.

*e) Analysis*

The analysis for each field test item was focused on its calibration accuracy and precision, measured by bias, absolute bias (Abias), and mean squared error (MSE). Following are the equations used to compute the above statistics. Let k=1,2,…,100 replications and j= 1,2, …,100 items. and denote the item difficulty parameter, i.e., true item difficulty parameter and item difficulty parameter estimate respectively:

- Bias $$Bias(_j) = \left( \sum_{k=1}^{100} (\hat{b}_{kj} - b_j) \right) /100$$ Eq[1]
- Abias $$Abias(_j) = \left( \sum_{k=1}^{100} | (\hat{b}_{kj} - b_j) | \right) /100$$ Eq [2]
- MSE $$MSE(_j) = \left( \sum_{k=1}^{100} (\hat{b}_{kj} - b_j)^2 \right) /100$$ Eq [3]

## III. Results

The FP method is criticized for introducing errors in calibrating the FT items because it treats ability estimates as true abilities to maintain the scales of subsequent item pools (Ban et al., 2001), but estimated abilities may be different from true abilities. To ensure this is not a concern in the current study, true and estimated abilities were reported in Table 4. What's more, average bias, average MSE, and correlation coefficient between estimated and true abilities ( ) were also computed and presented in Table 5. These statistics indicate that examinees' abilities were recovered very well with almost unbiased average ability estimates and low estimation errors. The average test length was 107 items.

*Table 4 :* Descriptive Statistics for the True ($\theta$) and Estimated ($\hat{\theta}$) Abilities

| | Mean | Std. Deviation | Maximum | Minimum |
|---|---|---|---|---|
| $\theta$ | -0.003 | 0.505 | 1.528 | 0.010 |
| $\hat{\theta}$ | 0.021 | 0.568 | 1.836 | -1.853 |

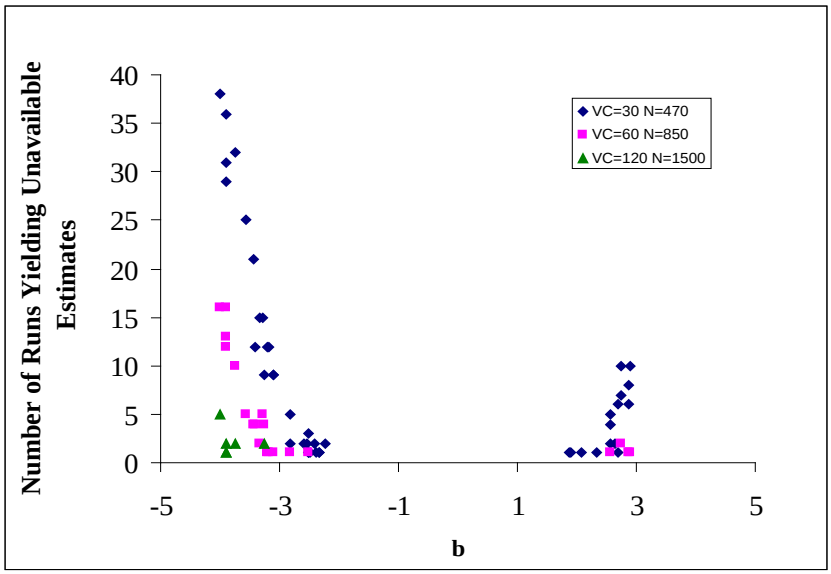
*Table 5 :* Overall Summary Statistics for Measurement Accuracy and Precision

| | Bias | MSE | $r_{\theta,\hat{\theta}}$ |
|---|---|---|---|
| $\hat{\theta}$ | 0.024 | 0.056 | 0.921 |

For some items, when the calibration sample size was small, there were some runs failing to yield valid item parameter estimates due to perfect scores, i.e., all of the responses to a certain item are either correct or incorrect. In the case of perfect scores, WINSTEPS can still report the item parameter estimates, but with very substantial standard errors. Thus, this study did not count a run as valid if the run involved estimating perfect scores.

Figure 3 demonstrates the relationship between the number of runs yielding no available item parameter estimates and the item difficulty parameter. Clearly, the situation in which item parameter estimates were unavailable was more likely to occur with those items at the tails of the scale, in particular, easy items. Increasing the calibration sample size seemed to minimize the occurrence of the above situation. For example, when the calibration sample size was 470, item parameter estimates failed to be reported for 43 items in certain runs. However, only 6 items encountered the same problem when the calibration sample size was 1500.

*Figure 3 :* Relationship between the numbers of runs yielding unavailable item parameter estimates and item difficulty




*Note . N represents calibration sample size*

Bias. The magnitudes of the bias produced by different calibration sample sizes are plotted against true item difficulty parameter in Figure 4. In general, these plots indicate that easy items tend to be underestimated and vice versa for hard items. With the increase of VCs for each item, we can see that the magnitude of the bias became less pronounced. From the practical viewpoint, when a calibration sample size allowed VCs to reach 250, the bias for item parameter estimates was negligible for items with log its between -3 and 3. When a calibration sample allowed VCs to reach 1,000, item parameter estimates were almost unbiased. Table 6 also provides summary statistics about the absolute bias of item parameter estimates given by different VCs. Clearly, absolute bias also decreased with the increase of calibration sample size.

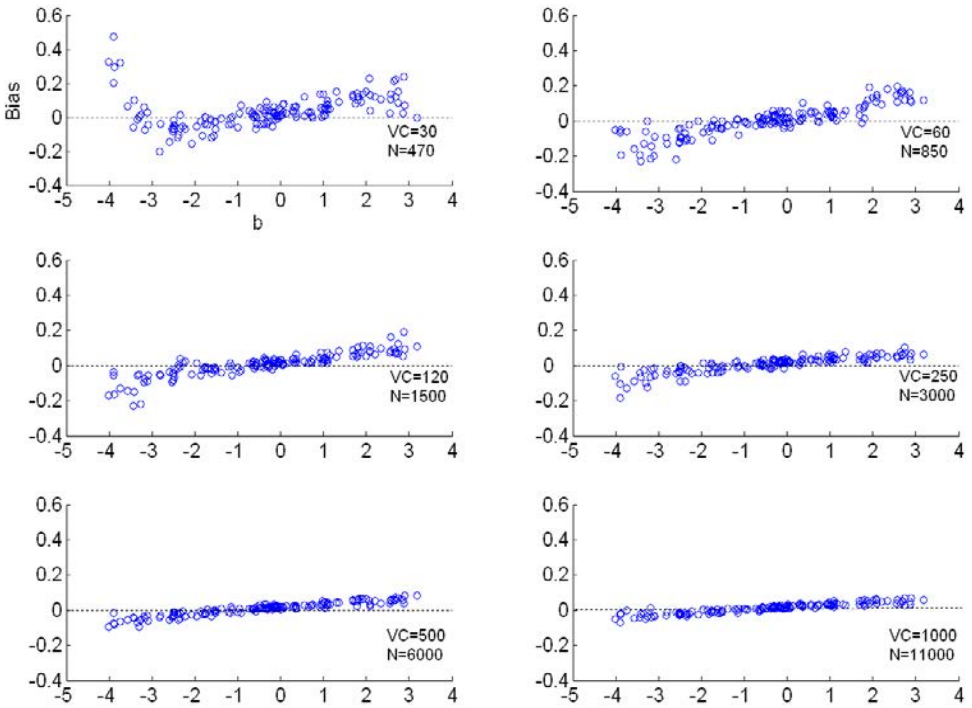



*Figure 4 :* Bias for the item parameter estimate

*Note. N represents calibration sample size.*

*Table 6 :* Maximum, Minimum, Mean, and Standard Deviation of the Abias of Item Parameter Estimates

| VC/Calibration sample | Maximum | Minimum | Mean | Std. Deviation |
|---|---|---|---|---|
| 30/470 | .472 | .000 | .069 | .071 |
| 60/850 | .196 | .001 | .062 | .057 |
| 120/1500 | .192 | .000 | .047 | .044 |
| 250/3000 | .100 | .000 | .035 | .028 |
| 500/6000 | .083 | .000 | .031 | .022 |
| 1000/11000 | .069 | .001 | .026 | .017 |

Wright and Douglas (1977) proposed a simple bias correction method that can be used to remove the bias in an item parameter estimate using the JML method. In WINSTEPS, this method is implemented by a command called STBIAS, which involves multiplying the item parameter estimate by the correction factor (L-1)/L, where L is the test length. By default, STBIAS is not invoked in WINSTEPS unless it is set as Y. Wang and Chen (2005) reported that STBIAS can significantly reduce the magnitudes of the bias in item parameter estimation. To examine how the magnitude of bias was corrected by STBIAS for sparse response data like that in this study, item estimation was conducted by implementing STBIAS, and the magnitude of the bias in the item parameter estimate when STBIAS was not used was compared with that when STBIAS was used. The results, illustrated in Table 7, indicate that STBIAS can slightly improve item parameter estimates by yielding a slightly lower average absolute bias and reducing the spread of item parameter estimates. Figure 5 compares the average bias for item parameter estimates when STBIAS is and is not used.

*Table 7 :* A Comparison of Maximum, Minimum, Mean, and Standard Deviation of the Abias of Item Parameter Estimates

| VC | Mean | | Std. Deviation | | Max | | Min | |
|---|---|---|---|---|---|---|---|---|
| | STBIAS=N | STBIAS=Y | STBIAS=N | STBIAS=Y | STBIAS=N | STBIAS=Y | STBIAS=N | STBIAS=Y |
| 30 | 0.069 | 0.065 | 0.071 | 0.074 | 0.493 | 0.493 | 0.000 | 0.000 |
| 60 | 0.062 | 0.053 | 0.057 | 0.050 | 0.177 | 0.205 | 0.000 | 0.000 |
| 120 | 0.047 | 0.039 | 0.044 | 0.037 | 0.172 | 0.205 | 0.000 | 0.000 |
| 250 | 0.035 | 0.028 | 0.028 | 0.022 | 0.081 | 0.156 | 0.000 | 0.000 |
| 500 | 0.031 | 0.023 | 0.022 | 0.015 | 0.062 | 0.075 | 0.000 | 0.000 |
| 1000 | 0.026 | 0.019 | 0.017 | 0.012 | 0.051 | 0.051 | 0.000 | 0.000 |

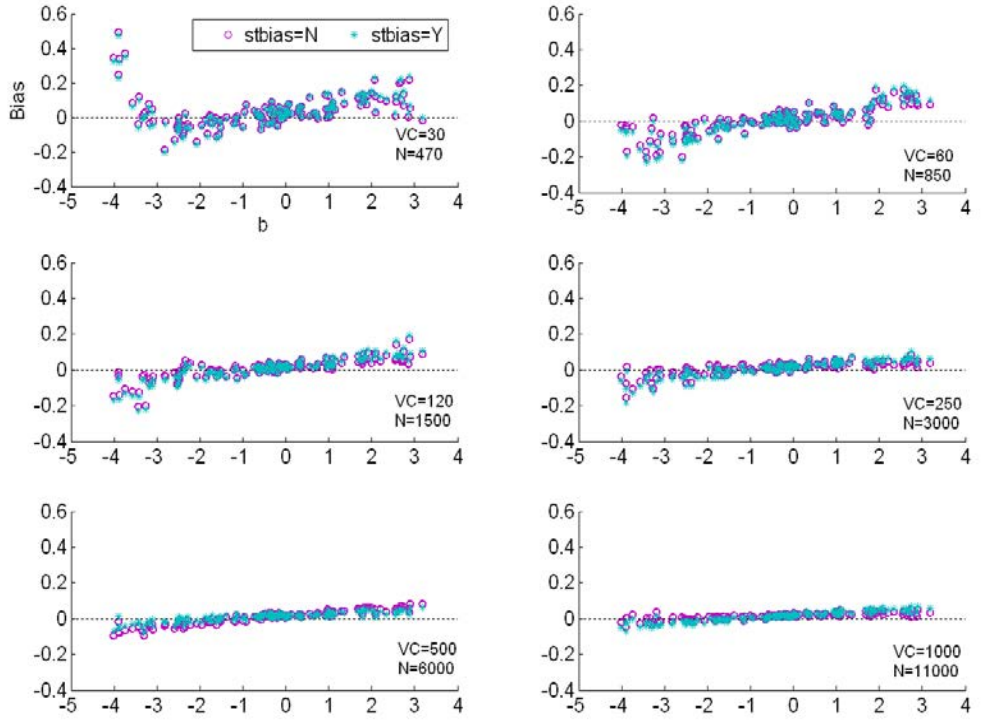



*Figure 5 :* A comparison of bias for the item parameter estimate when using and not using STBIAS

*Note. N represents calibration sample size*

Mean Squared Error (MSE). MSEs for item parameter estimates exhibited very similar patterns to those for bias. Specifically, both easy and hard items tend to be associated with larger errors than items in the middle of the scale, particularly when calibration sample size yielded VCs lower than 250. When VC reached 250 and beyond, it is clear that the magnitudes of MSEs were negligible even for items with difficulty value beyond 3 log it in absolute value. Figure 6 portrays the MSEs yielded by different calibration samples.

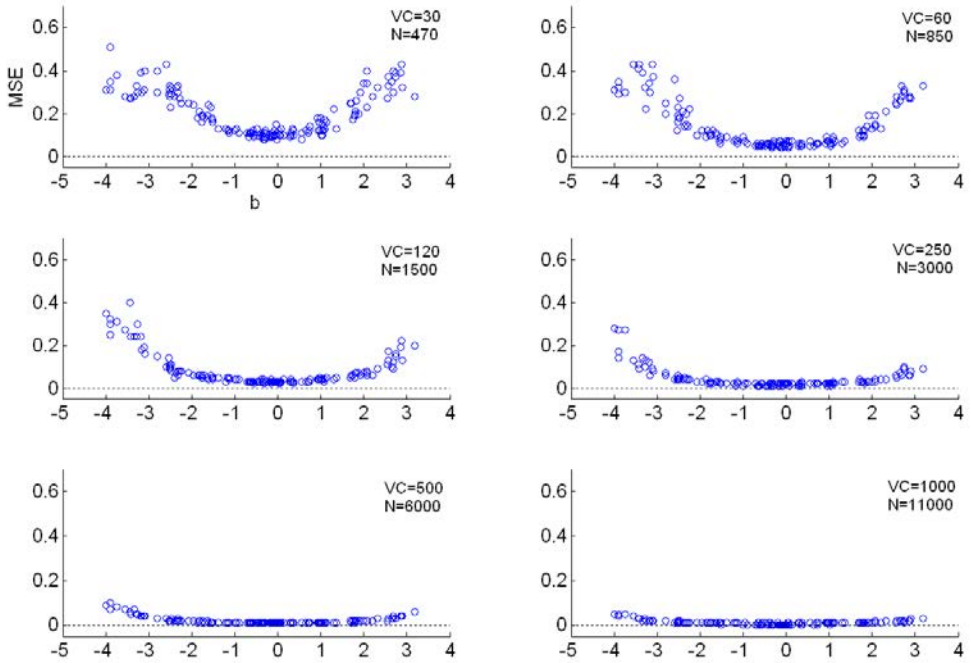



*Figure 6 :* Mean squared error of item parameter estimate

*Note. N represents calibration sample size*

## IV. Discussion and Conclusions

As mentioned previously, pretest item response data tend to be sparse under a seeding design in which only a subset of items is selected for administration in the CAT. Additionally, as FT items are likely to be exposed at different rates—some items receive more administrations than others, the question arises as to how large the calibration sample size needs to be so that item parameters are estimated accurately. This study was conducted in an attempt to provide practitioners certain guidelines about the optimal minimum calibration sample size for CAT pretest item estimation under WINSTEPS when the fixed-person-parameter estimation method is applied to derive pretest item parameter estimates.

Under such a design, as demonstrated, different calibration sample sizes lead to different average VCs given the ratio being fixed between the number of FT items administered to each examinee and the total FT item pool size. As expected, the larger the calibration sample size is, the larger the numbers of VCs are, and thus the better items are calibrated. This study recommends that, when the FT response data are sparse, focus should be placed on the valid cases that each item may end up with given a certain calibration sample size. As the methodology introduced in this study indicates, the relationship between VCs and calibration sample size can be very easily identified simply by simulating the operational FT item selection procedure using the FT item pool only. From a practical viewpoint, when the minimum number of valid cases reaches 250, item parameters are recovered quite well across a wide range of the scale. This number seems to be in agreement with, though slightly higher than, what Wright and Stone (1979) recommended—a sample size of approximately 200 for a paper-and-pencil test.

Clearly, the ratio between the number of FT items administered to each examinee and the total FT item pool size plays a key role in deciding the calibration sample size. The smaller the ratio is, the smaller the calibration sample size is needed. Collecting responses from a large sample may not be an issue for large-volume testing programs, but may be so for small-volume ones. Thus, to help item throughput, it is recommended to keep this ratio to a low number given the use of the same field-testing and calibration procedure.

Unlike what is reported in Wang and Chen (2006) in which biases of item parameter estimates are significantly corrected by the STBIAS command especially in the extreme situations, the STBIAS command only slightly improved estimate accuracy in the current study. A close look at the results revealed that L was defined as 150 (i.e., the total number of the items in the item pool) rather than the actual number of items (i.e., 15 items) administered to each examinee when STBIAS was set as Y. Clearly, if L is a large number, (L-1)/L tends to approach unity, thus playing a weaker role in bias correction. Therefore, given the situation in which a large calibration sample is unaffordable and STBIAS is in need to improve item estimate accuracy, it is not recommended to administer items out of a large FT item pool. This recommendation

is tied up with keeping a reasonable ratio as discussed above.

As mentioned in the Results section, the FP method has the potential to introduce errors in calibrating the FT items especially when ability estimates are inaccurate. The CAT model mimicked in this study is a pass/fail classification test, implying that ability estimates near the cut score may be fairly inaccurate and thus provide a poor linking. This does not seem to be a concern in this study, as Table 5 indicates that ability estimates are recovered quite well. The fact that the average test length (i.e., 107 items) is considerably long plays a key role. However, it is anticipated that poor ability estimates may produce a poor linking, thus challenging the results in this study. Future research should be conducted along this line to examine how ability estimates affect item parameter estimate accuracy in such a seeding FT item design in the CAT.

Investigation into item parameter estimation accuracy was conducted in this study by considering calibration sample size as the only affecting factor. In reality, such factors as FT item position or calibration sample distribution also exert impacts. Future research should look at how these factors interact with each other to affect estimate accuracy. Additionally, item calibration was conducted by using only one linking design and estimation method. Adding different linking designs and estimation methods, in conjunction with the factors mentioned above, also merits further research.

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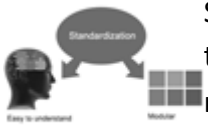


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(f) Results should be presented concisely, by well-designed tables and/or figures; the same data may not be used in both; suitable statistical data should be given. All data must be obtained with attention to numerical detail in the planning stage. As reproduced design has been recognized to be important to experiments for a considerable time, the Editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned un-refereed;

(g) Discussion should cover the implications and consequences, not just recapitulating the results; conclusions should be summarizing.

(h) Brief Acknowledgements.

(i) References in the proper form.

Authors should very cautiously consider the preparation of papers to ensure that they communicate efficiently. Papers are much more likely to be accepted, if they are cautiously designed and laid out, contain few or no errors, are summarizing, and be conventional to the approach and instructions. They will in addition, be published with much less delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and to make suggestions to improve briefness.

It is vital, that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

**Format**

*Language: The language of publication is UK English. Authors, for whom English is a second language, must have their manuscript efficiently edited by an English-speaking person before submission to make sure that, the English is of high excellence. It is preferable, that manuscripts should be professionally edited.*

Standard Usage, Abbreviations, and Units: Spelling and hyphenation should be conventional to The Concise Oxford English Dictionary. Statistics and measurements should at all times be given in figures, e.g. 16 min, except for when the number begins a sentence. When the number does not refer to a unit of measurement it should be spelt in full unless, it is 160 or greater.

Abbreviations supposed to be used carefully. The abbreviated name or expression is supposed to be cited in full at first usage, followed by the conventional abbreviation in parentheses.

Metric SI units are supposed to generally be used excluding where they conflict with current practice or are confusing. For illustration, 1.4 l rather than 1.4 × 10-3 m3, or 4 mm somewhat than 4 × 10-3 m. Chemical formula and solutions must identify the form used, e.g. anhydrous or hydrated, and the concentration must be in clearly defined units. Common species names should be followed by underlines at the first mention. For following use the generic name should be constricted to a single letter, if it is clear.

**Structure**

All manuscripts submitted to Global Journals Inc. (US), ought to include:

Title: The title page must carry an instructive title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) wherever the work was carried out. The full postal address in addition with the e-mail address of related author must be given. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining and indexing.

*Abstract, used in Original Papers and Reviews:*

Optimizing Abstract for Search Engines

Many researchers searching for information online will use search engines such as Google, Yahoo or similar. By optimizing your paper for search engines, you will amplify the chance of someone finding it. This in turn will make it more likely to be viewed and/or cited in a further work. Global Journals Inc. (US) have compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Key Words

A major linchpin in research work for the writing research paper is the keyword search, which one will employ to find both library and Internet resources.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy and planning a list of possible keywords and phrases to try.

Search engines for most searches, use Boolean searching, which is somewhat different from Internet searches. The Boolean search uses "operators," words (and, or, not, and near) that enable you to expand or narrow your affords. Tips for research paper while preparing research paper are very helpful guideline of research paper.

Choice of key words is first tool of tips to write research paper. Research paper writing is an art.A few tips for deciding as strategically as possible about keyword search:

- One should start brainstorming lists of possible keywords before even begin searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in research paper?" Then consider synonyms for the important words.
- It may take the discovery of only one relevant paper to let steer in the right keyword direction because in most databases, the keywords under which a research paper is abstracted are listed with the paper.
- One should avoid outdated words.

Keywords are the key that opens a door to research work sources. Keyword searching is an art in which researcher's skills are bound to improve with experience and time.

Numerical Methods: Numerical methods used should be clear and, where appropriate, supported by references.

*Acknowledgements: Please make these as concise as possible.*

References

References follow the Harvard scheme of referencing. References in the text should cite the authors' names followed by the time of their publication, unless there are three or more authors when simply the first author's name is quoted followed by et al. unpublished work has to only be cited where necessary, and only in the text. Copies of references in press in other journals have to be supplied with submitted typescripts. It is necessary that all citations and references be carefully checked before submission, as mistakes or omissions will cause delays.

References to information on the World Wide Web can be given, but only if the information is available without charge to readers on an official site. Wikipedia and Similar websites are not allowed where anyone can change the information. Authors will be asked to make available electronic copies of the cited information for inclusion on the Global Journals Inc. (US) homepage at the judgment of the Editorial Board.

The Editorial Board and Global Journals Inc. (US) recommend that, citation of online-published papers and other material should be done via a DOI (digital object identifier). If an author cites anything, which does not have a DOI, they run the risk of the cited material not being noticeable.

The Editorial Board and Global Journals Inc. (US) recommend the use of a tool such as Reference Manager for reference management and formatting.

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*Tables: Tables should be few in number, cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g. Table 4, a self-explanatory caption and be on a separate sheet. Vertical lines should not be used.*

*Figures: Figures are supposed to be submitted as separate files. Always take in a citation in the text for each figure using Arabic numbers, e.g. Fig. 4. Artwork must be submitted online in electronic form by e-mailing them.*

Preparation of Electronic Figures for Publication

Even though low quality images are sufficient for review purposes, print publication requires high quality images to prevent the final product being blurred or fuzzy. Submit (or e-mail) EPS (line art) or TIFF (halftone/photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Do not use pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings) in relation to the imitation size. Please give the data for figures in black and white or submit a Color Work Agreement Form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution (at final image size) ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs) : >350 dpi; figures containing both halftone and line images: >650 dpi.

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## TECHNIQUES FOR WRITING A GOOD QUALITY RESEARCH PAPER:

**1. Choosing the topic:** In most cases, the topic is searched by the interest of author but it can be also suggested by the guides. You can have several topics and then you can judge that in which topic or subject you are finding yourself most comfortable. This can be done by asking several questions to yourself, like Will I be able to carry our search in this area? Will I find all necessary recourses to accomplish the search? Will I be able to find all information in this field area? If the answer of these types of questions will be "Yes" then you can choose that topic. In most of the cases, you may have to conduct the surveys and have to visit several places because this field is related to Computer Science and Information Technology. Also, you may have to do a lot of work to find all rise and falls regarding the various data of that subject. Sometimes, detailed information plays a vital role, instead of short information.

**2. Evaluators are human:** First thing to remember that evaluators are also human being. They are not only meant for rejecting a paper. They are here to evaluate your paper. So, present your Best.

**3. Think Like Evaluators:** If you are in a confusion or getting demotivated that your paper will be accepted by evaluators or not, then think and try to evaluate your paper like an Evaluator. Try to understand that what an evaluator wants in your research paper and automatically you will have your answer.

**4. Make blueprints of paper:** The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

**5. Ask your Guides:** If you are having any difficulty in your research, then do not hesitate to share your difficulty to your guide (if you have any). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work then ask the supervisor to help you with the alternative. He might also provide you the list of essential readings.

**6. Use of computer is recommended:** As you are doing research in the field of Computer Science, then this point is quite obvious.

**7. Use right software:** Always use good quality software packages. If you are not capable to judge good software then you can lose quality of your paper unknowingly. There are various software programs available to help you, which you can get through Internet.

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**9. Use and get big pictures:** Always use encyclopedias, Wikipedia to get pictures so that you can go into the depth.

**10. Bookmarks are useful:** When you read any book or magazine, you generally use bookmarks, right! It is a good habit, which helps to not to lose your continuity. You should always use bookmarks while searching on Internet also, which will make your search easier.

**11. Revise what you wrote:** When you write anything, always read it, summarize it and then finalize it.

**12. Make all efforts:** Make all efforts to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in introduction, that what is the need of a particular research paper. Polish your work by good skill of writing and always give an evaluator, what he wants.

**13. Have backups:** When you are going to do any important thing like making research paper, you should always have backup copies of it either in your computer or in paper. This will help you to not to lose any of your important.

**14. Produce good diagrams of your own:** Always try to include good charts or diagrams in your paper to improve quality. Using several and unnecessary diagrams will degrade the quality of your paper by creating "hotchpotch." So always, try to make and include those diagrams, which are made by your own to improve readability and understandability of your paper.

**15. Use of direct quotes:** When you do research relevant to literature, history or current affairs then use of quotes become essential but if study is relevant to science then use of quotes is not preferable.

**16. Use proper verb tense:** Use proper verb tenses in your paper. Use past tense, to present those events that happened. Use present tense to indicate events that are going on. Use future tense to indicate future happening events. Use of improper and wrong tenses will confuse the evaluator. Avoid the sentences that are incomplete.

**17. Never use online paper:** If you are getting any paper on Internet, then never use it as your research paper because it might be possible that evaluator has already seen it or maybe it is outdated version.

**18. Pick a good study spot:** To do your research studies always try to pick a spot, which is quiet. Every spot is not for studies. Spot that suits you choose it and proceed further.

**19. Know what you know:** Always try to know, what you know by making objectives. Else, you will be confused and cannot achieve your target.

**20. Use good quality grammar:** Always use a good quality grammar and use words that will throw positive impact on evaluator. Use of good quality grammar does not mean to use tough words, that for each word the evaluator has to go through dictionary. Do not start sentence with a conjunction. Do not fragment sentences. Eliminate one-word sentences. Ignore passive voice. Do not ever use a big word when a diminutive one would suffice. Verbs have to be in agreement with their subjects. Prepositions are not expressions to finish sentences with. It is incorrect to ever divide an infinitive. Avoid clichés like the disease. Also, always shun irritating alliteration. Use language that is simple and straight forward. put together a neat summary.

**21. Arrangement of information:** Each section of the main body should start with an opening sentence and there should be a changeover at the end of the section. Give only valid and powerful arguments to your topic. You may also maintain your arguments with records.

**22. Never start in last minute:** Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

**23. Multitasking in research is not good:** Doing several things at the same time proves bad habit in case of research activity. Research is an area, where everything has a particular time slot. Divide your research work in parts and do particular part in particular time slot.

**24. Never copy others' work:** Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

**25. Take proper rest and food:** No matter how many hours you spend for your research activity, if you are not taking care of your health then all your efforts will be in vain. For a quality research, study is must, and this can be done by taking proper rest and food.

**26. Go for seminars:** Attend seminars if the topic is relevant to your research area. Utilize all your resources.

**27. Refresh your mind after intervals:** Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

**28. Make colleagues:** Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

**29. Think technically:** Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

**30. Think and then print:** When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

**31. Adding unnecessary information:** Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

**32. Never oversimplify everything:** To add material in your research paper, never go for oversimplification. This will definitely irritate the evaluator. Be more or less specific. Also too, by no means, ever use rhythmic redundancies. Contractions aren't essential and shouldn't be there used. Comparisons are as terrible as clichés. Give up ampersands and abbreviations, and so on. Remove commas, that are, not necessary. Parenthetical words however should be together with this in commas. Understatement is all the time the complete best way to put onward earth-shaking thoughts. Give a detailed literary review.

**33. Report concluded results:** Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

**34. After conclusion:** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

## Informal Guidelines of Research Paper Writing

**Key points to remember:**

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

**Final Points:**

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

Writing a research paper is not an easy job no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record keeping are the only means to make straightforward the progression.

**General style:**

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear

· Adhere to recommended page limits

Mistakes to evade

- Insertion a title at the foot of a page with the subsequent text on the next page
- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

· Use standard writing style including articles ("a", "the," etc.)

· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

· Align the primary line of each section

· Present your points in sound order

· Use present tense to report well accepted

· Use past tense to describe specific results

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

· Shun use of extra pictures - include only those figures essential to presenting results

**Title Page:**

Choose a revealing title. It should be short. It should not have non-standard acronyms or abbreviations. It should not exceed two printed lines. It should include the name(s) and address (es) of all authors.

**Abstract:**

The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Yet, use comprehensive sentences and do not let go readability for briefness. You can maintain it succinct by phrasing sentences so that they provide more than lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study, with the subsequent elements in any summary. Try to maintain the initial two items to no more than one ruling each.

- Reason of the study - theory, overall issue, purpose
- Fundamental goal
- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

- Single section, and succinct
- As a outline of job done, it is always written in past tense
- A conceptual should situate on its own, and not submit to any other part of the paper such as a form or table
- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
- Exact spelling, clearness of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else

**Introduction:**

The **Introduction** should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable to comprehend and calculate the purpose of your study without having to submit to other works. The basis for the study should be offered. Give most important references but shun difficult to make a comprehensive appraisal of the topic. In the introduction, describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will have no attention in your result. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here. Following approach can create a valuable beginning:

- Explain the value (significance) of the study
- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

- Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done.
- Sort out your thoughts; manufacture one key point with every section. If you make the four points listed above, you will need a least of four paragraphs.

- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
- Shape the theory/purpose specifically - do not take a broad view.
- As always, give awareness to spelling, simplicity and correctness of sentences and phrases.

**Procedures (Methods and Materials):**

This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt for the least amount of information that would permit another capable scientist to spare your outcome but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section. When a technique is used that has been well described in another object, mention the specific item describing a way but draw the basic principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

Methods:

- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

**Results:**

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

**Discussion:**

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

Please carefully note down following rules and regulation before submitting your Research Paper to Global Journals Inc. (US):

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- Do not give permission to anyone else to "PROOFREAD" your manuscript.

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|---|---|---|---|
| | **A-B** | **C-D** | **E-F** |
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| ***Introduction*** | Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited | Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter | Out of place depth and content, hazy format |
| ***Methods and Procedures*** | Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads | Difficult to comprehend with embarrassed text, too much explanation but completed | Incorrect and unorganized structure with hazy meaning |
| ***Result*** | Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake | Complete and embarrassed text, difficult to comprehend | Irregular format with wrong facts and figures |
| ***Discussion*** | Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited | Wordy, unclear conclusion, spurious | Conclusion is not cited, unorganized, difficult to comprehend |
| ***References*** | Complete and correct format, well organized | Beside the point, Incomplete | Wrong format and structuring |

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