CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

The research design for this study is summarized under the following topics: data sources (both primary and secondary), the population and sample examined, sampling techniques, and the instrument used for collecting data. These and related issues are discussed under this topic.

3.1. The Research Methodology

The purpose of this study is to investigate instructional leadership roles of principals and examine the relationship of these roles with school improvement in secondary schools of Gedeo and Sidama Zones, SNNPR. To this end, the study assessed the extent to which secondary school principals of the two zones were practicing instructional leadership roles in their schools and the degree of the relationship of this practice to the current school improvement program underway in those schools.

To serve this purpose, a descriptive survey method was employed considering that it could help to get reliable and authentic information on the topic studied. Further, this method is preferred by many researchers for its convenience to gather the opinion of people on current issues. As to the experience of the investigator, the descriptive survey method is commonly used in studying educational problems. Saxena and Mishra (2007) who say, “Surveys are the most widely used techniques in education and behavioral sciences for the collection of data”, also support this statement (p. 214).

Even though it is quantitative dominated, the approach employed by this study also involves some degree of qualitative approach. Hence, a mixed research of a sequential explanatory type was employed in order to support the results of the quantitative data
with qualitative data obtained through interview and FGD. The qualitative approach was used to strengthen or triangulate data gathered through the quantitative approach. It includes study of selected issues in depth and in detail, while the quantitative approach permits statistical compilation, which produces hard data from numerical values.

The value of supporting the quantitative approach by the qualitative is to balance the different biases, which might be observed when employing one approach. The information obtained through survey and document sources (presented in tables) were preferred methods of quantitative data collection while interview and focus group discussions, were used to collect qualitative data.

This study attempted to address seven interrelated but distinct research questions. The research questions focused on investigating whether school principals emphasized promoting teachers’ continuous professional development. Further, the effectiveness of supervisory services, the extent to which school principals communicate school goals to stakeholders, principals’ resource allotment practices, efforts to promote school climate, activities done so far in the area of school improvement, and the association of the school principals’ instructional leadership roles with school improvement were all attempted to be addressed to by the key research questions.

3.2. Data Sources

Both primary and secondary sources of data were used for the study. The primary sources of data for this study were senior teachers and preparatory students, from which information was solicited through questionnaires. The investigator intended to select senior teachers (having teaching experience of nine or more years) and preparatory students to get reliable data pertaining to the activities done so far in the area of
instructional leadership and school improvement. Because of their maturity and experience or long stay in their schools, these sources were considered to give adequate and reliable information. The other primary sources of data were school principals, zone educational Department staff members, and PTA members.

Secondary sources of information were documents, books, journals, and information obtained from other published and unpublished sources. Finally, the quantitative data were analyzed using appropriate statistical methods, and validated by qualitative data. The findings of the analysis of both data were summarized and recommendations were given.

3.3. Population and Sample

As far as study population is concerned, there are 12 secondary schools (four in Gedeo zone and eight in Sidama zone), of which five were selected for this study. There were population of 275 senior teachers and 2326 preparatory (grades 11th and 12th) students in the five selected secondary schools the two study zones. Accordingly, all the 275 senior teachers, 365 (15%) preparatory students were selected for the study. As it was done during the time of pilot-test, orientation regarding as how to fill out the questionnaire was given to both teachers and students, in order to minimize errors.

Further, school principals of the five sampled schools, two zonal education Department staff members, and two groups of PTA from the sampled schools constituting six members each were also targeted to solicit qualitative data. Table 4 (below) summarizes the sources for quantitative data:
Out of 275 questionnaires distributed to teachers, 231 (84%) were correctly filled and retrieved. Likewise, out of the total of 365 questionnaires distributed to students, 317 (87%) were properly filled and collected back. Overall, out of 640 questionnaires distributed to respondents, 548 (86%) were appropriately collected and used for data analysis. The details of the questionnaires distributed to each respondent of the five schools and their rate of return are presented in table 5.

Table 5: Questionnaires Distributed and Rate of Return

<table>
<thead>
<tr>
<th>No</th>
<th>Secondary School</th>
<th>Teachers Questionnaire Dispatched</th>
<th>Rate of return</th>
<th>%</th>
<th>Students Questionnaire Dispatched</th>
<th>Rate of return</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dilla</td>
<td>60</td>
<td>49</td>
<td>82</td>
<td>94</td>
<td>86</td>
<td>92</td>
</tr>
<tr>
<td>2</td>
<td>Yirgachefe</td>
<td>35</td>
<td>28</td>
<td>80</td>
<td>35</td>
<td>32</td>
<td>91.42</td>
</tr>
<tr>
<td>3</td>
<td>Aletawondo</td>
<td>59</td>
<td>55</td>
<td>93</td>
<td>76</td>
<td>75</td>
<td>99</td>
</tr>
<tr>
<td>4</td>
<td>Leku</td>
<td>61</td>
<td>49</td>
<td>80</td>
<td>48</td>
<td>39</td>
<td>81.25</td>
</tr>
<tr>
<td>5</td>
<td>Yirgalem</td>
<td>60</td>
<td>50</td>
<td>83</td>
<td>112</td>
<td>85</td>
<td>76</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>275</td>
<td>231</td>
<td>84</td>
<td>365</td>
<td>317</td>
<td>87</td>
</tr>
</tbody>
</table>
3.4. Sampling Techniques
As mentioned earlier, pre-contact was made with the principals of the five study schools and the two zonal education Departments. Accordingly, the exact population of teachers, students, and PTA members was obtained from the schools before the selection of the required sample.

The study comprises of the principals of the five sampled schools, senior teachers (having teaching experience of nine or more years), preparatory students, PTA members, and coordinators of Teachers’ Educational Leadership Development Process (TELDP) in the selected zonal education Departments. The investigator employed multistage sampling technique in the selection of the study zones, schools and subjects of the study (see figure 5).

Accordingly, at the first stage, the two study zones (Gedeo and Sidama) and two zonal education Department staff members (one from each zone) were selected purposefully. This was based on the investigator’s experience of lecturing for more than five years in a university hosting the two zones, Dilla University. He has been training school principals and supervisors and has exposure to educational officials at different levels and common educational issues in secondary schools under the selected zones.

At the second stage, the investigator selected five schools out of the 12 secondary schools in the zones, and two members of PTA from each school using random sampling techniques. This was to allow all schools have an equal chance of being included in the sample.
At the third stage, school principals were included using deliberate/purposive sampling technique. Since principals are the major target in this study, the investigator purposefully selected and included them in the samples.

All senior teachers (having teaching experience of nine or more years) were chosen at the fourth stage. This group was selected using the criterion sampling technique. That is, the investigator set seniority of teachers as a criterion for selection. Teachers at this level have nine or above years of experience in teaching and can provide reliable data compared to the less experienced ones.

Finally, the selection of preparatory students was made based on stratified random sampling (a part of probability sampling) technique. To this end, the students were categorized into two different groups in each school (11th and 12th grades). Following this, the investigator calculated 15% of the student population from each stratum. Selection of the sample was then made using a systematic random sampling technique. That is, every \( n \)th number of students was selected from each stratum, using the list of students provided by vice principals and homeroom teachers. This procedure is useful when sampling frame is available in the form of a list (Kothari, 2004). Since they are non-overlapping homogenous groups, the investigator selected 15% samples from each group, considering that they are adequately represented.

During the selection process, the investigator was assisted by the vice principals and homeroom teachers of each school, who cooperated by providing the hard and soft copies of students’ lists and participating in the whole sample selection process. If it were not for them, the selection of the sample would have taken more time than
expected. Overall, 193 11th grade and 172 12th grade students were selected using systematic random sampling techniques from the total population of 1285 and 1148 students respectively (see table 4).

Figure 5: Sampling Techniques for the Current Study

Note:
- **SRS**- refers to Simple Random Sampling technique
- **PTA**- Parent Teacher Association
- **STRS**- Stratified Random Sampling

This was to give equal opportunity for each individual so that there is probability for him/her to be included in the sample. This ensures the sample to be representative of the population (Keppel, 1991). The selection of PTA members was also made using random sampling techniques. Except the documentary sources, (i.e. The three consecutive years
of students’ entrance exam results), all the data sources for this study focus on the information obtained during the year 2011/2012.

3.5. Instruments for Data Collection

The survey used in this study was constructed to collect data relevant to each of the seven research questions. The questionnaires were designed to solicit data from teachers and students on the five dimensions/variables of instructional leadership and the four domains of school improvement. Generally, the instruments, which were used to gather the required information are questionnaire, interview, Focus Group Discussion (FGD), and document sources. Each of them is discussed below:

3.5.1. Questionnaire

Two sets of questionnaires (more of structured) were prepared, commented by experts, pilot-tested, and were distributed to the subjects of the study (senior teachers and preparatory students). The questionnaires included Likert-scale items measuring school principal’s instructional leadership roles and school improvement issues. They were designed in such a way that they allow the respondents to express their opinion on several items categorized under respondents’ background, the five dimensions of instructional leadership (Promoting CPD, supervising instruction, communicating goals, allocating resources, and promoting school climate) and the four domains of school improvement (teaching-learning, school leadership and management, safe and healthy school environment, and community involvement). The items in the interview and FGD also address these issues.
3.5.1.1. Preliminary review

Besides the constructive comment given by his guide, the investigator consulted with several experts throughout the development of the instrument; beginning with asking for suggestions on the domains of literature that might assist him in item selection and development. Content validity of the instruments was approached using different strategies. The survey items were shaped from a review of literature on instructional leadership and school improvement and from the development of the new conceptual framework after going through similar models developed by others. The model of instructional leadership used in the current study was a synthesis of Murphy (1990), Weber model (1996), Michelle (2003) and Lineburg’s (2010) with some modifications by the investigator.

Before field-testing them with samples of respondents, the instruments were reviewed by a panel of researchers, which included four experts (two doctors at the Department of educational planning and management, and two experienced researchers at the faculty of education) currently working at Adama, Hawassa and Dilla Universities in Ethiopia. The reason is that these individuals have rich experience and knowledge of the topic being studied. Content validity, according to Thorndike (1997), requires a set of reviewers who have knowledge of the subject matter. The review panel scrutinized the instruments for syntax or grammar usage, the objectivity of the items, format, and item clarity and instruction coherency.
Following the experts’ comment, three items, which were thought to be irrelevant and one table were omitted, while five new items were included in the instruments (questionnaire) prepared for teachers. Similarly, three items were omitted from the students’ questionnaire based on the comments of the experts. Generally, review of the instruments was made before conducting pilot-test and modifications were also made following the pilot test.

3.5.1.2. Pilot Testing
The preliminary instrument was pilot tested by 34 teachers in an adjacent school (Tabor secondary and preparatory school), which was not included in the main study. The same questionnaire was prepared for teachers and students. Just before administration of the questionnaires, short orientation (35 to 40 minutes) was given to respondents regarding as how to fill the questionnaires and clarifications of some terms or expressions. Three returned surveys were omitted for they were not fully completed by the respondents. Hence, the analysis of the pilot-tested instrument was made using 31 survey results. Reliability of the instruments was checked using Cronbach’s Alpha. Respondents were asked to rate each item based on a five-point Likert scale of 1= Strongly Disagree to 5= Strongly Agree/ 1=Not effective to 5=Most effective/, 1=Very minimal to 5=Very high.

The check for reliability was done by categorizing the items into two. The first category items comprise 31 instructional leadership issues, while the second part focused on 45 school improvement issues. Alpha reliability coefficients were computed for the five leadership dimensions and for the four school
improvement domains. Table 6 indicates the reliability analyses result for instructional leadership dimensions (variables) and school improvement domains (variables) hereunder:

**Reliability Statistics**

*Table 6: Reliability Analysis for Instructional Leadership Dimensions and School Improvement Domains*

<table>
<thead>
<tr>
<th>No</th>
<th>Variables</th>
<th>Cronbach’s alpha</th>
<th>Cronbach’s alpha based on standardized items</th>
<th>No of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Instructional leadership dimensions</td>
<td>.934</td>
<td>.934</td>
<td>31</td>
</tr>
<tr>
<td>2</td>
<td>School improvement domains</td>
<td>.932</td>
<td>.933</td>
<td>45</td>
</tr>
</tbody>
</table>

Table 6 (item 1) indicates the average correlation among all of the instructional leadership items that make up the scale. The reliability coefficient for the five leadership dimensions is above .7 (i.e. .934 here). While different levels of reliability are required, depending on the nature and purpose of the scale, Nunnally (1978) recommends a minimum level .7. Hence, Cronbach’s Alpha value of .934 computed here is an indication of greater reliability. Concerning school improvement, the Cronbach’s Alpha value of .933 (see table 6, item 2) also indicates a high reliability coefficient, while the overall average reliability result for the two groups of items was also .933. The high alpha reliability of each scale leads to the conclusion that the survey designed for this study was a very reliable measure.
3.5.2. Interview questions:

The other data gathering instrument for this study was interview. It was considered valuable to support the data gathered through questionnaire. So two sets of interview questions were prepared. The first set of questions was prepared for school principals. This comprises 11 questions that were related to the objectives of the study. The second one was the one prepared for zonal education Department teachers’ educational leadership development process coordinators (TELDP). This category of interview comprises nine questions, of which the two were background related.

The two sets of interviews, which are different in approach but of the same content, were prepared by the investigator and commented by the research guide and the two experienced researchers from educational planning and management Department. Each of the interviews were audio recorded and transcribed later. Respondents were given opportunity to review and correct the content of the interview after transcribing it. In order for the instruments being valid, summary of the major ideas and restatement of the questions was made by the interviewer during interview session. To make the smooth relationship and to avoid confusion during the interview sessions, the investigator already made pre-contact with interviewees. Establishing rapport is, according to Best and Kahn (2009), the key to effective interviewing.

3.5.3. Focus group discussion (FGD)

This source was also preferred by the investigator as an important tool to get people’s impression. According to Marczyk, Dematto, and Festinger (2005), like surveys, focus groups can be an extremely useful technique for obtaining
individuals’ impressions and concerns about certain issues, services, or products. Krueger and Marry (2000) also discuss the advantage of FGD over the other tools. According to their explanation, the focus group presents a more natural environment than that of an individual interview, because participants are influencing and influenced by others just as they are in life. They also ensure that an investigator can observe the behavior of individuals involved interacting in a focus group. During the FGD, the investigator serves several functions in the focus group. To mention some, he/she can act as moderator, listener, observer, and eventually analyst using an inductive process (Krueger & Marry, 2000).

To conduct the FGD, ten unstructured items in the area of key research questions were prepared and thoroughly discussed with the participants. As per the objective of the study, eleven questions were prepared and experienced experts gave constructive comments. Following the comment, the investigator omitted two items and made some modifications with the rest. The discussion was planned in such a way that each group comprises 6 members. This is in agreement with Marczyk, et.al (2005). As to these authors, focus groups are typically composed of several participants (usually 6 to 10 individuals). Nevertheless, like most other qualitative research methods, there is no one definitive way to design or conduct a focus group (Marczyk et.al, 2005).

Two focus group discussions were conducted (one in each zone) with the Parent Teacher Association (PTA) members of the sampled secondary schools of the two zones. To do so, two to three members of the PTA were randomly selected from each school. Hence, six PTA members from Gedeo and six from Sidama were selected for the study. Then the investigator arranged the date and time for the discussion program.
in the school, which is central to the rest of the schools. Accordingly, center secondary school for Dilla and Yirgachefe was dilla, while the center for Aletawondo, Leku, and Yirgalem was Yirgalem secondary school. The two centers comprised PTA members constituting six members each.

The discussion was held in the two zones at different times based on the arranged schedule. The participants attended the discussion in the center (nearby schools). The transportation cost was covered by the investigator, while the two center schools showed their cooperativeness by covering refreshment expenses for the participants.

3.5.4. Document sources

Document sources were also assessed to strengthen information obtained through the other instruments. Accordingly, a one-year (2012) action plans of the five sampled schools, which also included budget allocated to the instructional activities for the year 2012, and instructional and non-instructional activities to be achieved in the given academic year was one part of the document. In addition, the three consecutive years of 12th grade students’ entrance exam results (2010-2012) were also the other sources of data. The reason for including the students’ results was simply to weigh the status of school improvement in those schools based on students’ results. Because, generally speaking, the main target of school improvement is to bring about student achievement.

Further, the investigator also consulted some document sources from the Regional Education Bureau and zonal Education Departments. This part of the document was used to obtain statistics of students and staff members and to write descriptions of the study region and zones.
3.6. Procedures of Data Administration and Data Collection

Following the selection of the sample schools, five data collectors were employed. These individuals, whose residences are near to the sampled schools, were selected based on their experience in doing similar jobs in the past, as per the information obtained from school principals and the surrounding community. The individuals were also in a better educational status and had a good relationship with students and teachers. Those data collectors helped the investigator by collecting the distributed questionnaires in specific periods. Among the challenges faced by the investigator during this time was respondents’ reluctance to fill out and return the questionnaires on time. As a result, the data collectors had to sometimes go as far as the residence of some respondents to get the questionnaires back. Prior to the data collection, they were given a brief orientation as how to approach the respondents, how to dispatch, collect, and handle the questionnaires.

To be formal and to get the cooperativeness of respondents, an official letter addressing to the concerned zones and schools was secured from Dilla University. Then, the investigator fixed the program with the school principals, PTA members, and zonal education Department staff members.

Questionnaires were distributed to the sampled teachers and students by the investigator and the data collectors, who assisted throughout the administration of the instruments. Similar to the pilot-test, here also, the investigator gave orientation to the respondents concerning how to fill and give back the questionnaires. Some instructions, which were thought to cause confusion, were made clear to the respondents. Further, the
investigator also informed the respondents that the data they provide would be confidential and used only for research purpose.

As mentioned in the “Instruments” section, the interview with school principals and zone educational Department staff members was tape-recorded and transcribed later by the investigator. The important thing here is that all the interviewees have good command of the English language and hence, the interview was conducted in English. The PTA members arrived for discussion as per the plan. The investigator would like to appreciate the cooperativeness of school principals in gathering PTA members on time and arranging some refreshments for the participants during the discussion sessions. The investigator tried to make the discussion smooth and lovely.

To this end, he introduced himself first and clarified the objective of the study and points for discussion. Further, significances of the research to the country as a whole and to the study zones and schools in particular were briefed. Participants tried to share their ideas and there was no domination of the discussion by one participant. During the discussion, the main points were jotted down, the investigator acted as a facilitator and guided cautiously in order not to interrupt the discussion. Overall, the FGD was properly conducted in each zone and the attentions were directed to addressing the selected research questions.

Finally, the data collection processes took a relatively longer period than expected due to the nature of the research design. That is, the employment of mixed sequential explanatory research design, which forced the investigator to go for data collection at two different times. Generally, the duration of data collection covered from 01 October 2011 to 25 May 2012.
3.7. Methods of Data Analysis

3.7.1. The Variables

The dependent variable of this study is the school improvement program (SIP) while the independent variable is the instructional leadership roles of principals, which comprises five dimensions- promoting continuous professional development, supervising instructional activities, defining and communicating goals, providing/allocation resources, and promoting school climate.

The association of each of the five dimensions of instructional leadership with the four domains of school improvement was computed using Pearson’s Product Moment Correlation.

3.7.2. Techniques of Data Analysis

The quantitative data for this study is more of the data obtained through questionnaire from teachers and students, while to a certain degree there are data collected through document sources. The data from document sources focus on the achievement of 10th and 12th grade students over the last three consecutive academic years. Further, percentage of instructional and non instructional activities included in the school action plans and the corresponding budget allotted to them in each school were also among the quantitative data from document sources. The qualitative data are the information obtained from school principals and zonal staff members through interview and the data collected from PTA members through FGD method. Some data are also collected qualitatively through document sources and used for writing the description of Ethiopia, SNNPR, and the study zones.
To analyze the quantitative data, different statistical techniques were employed as deemed appropriate in view of the objectives of the study and as dictated by the nature of the data. For instance, descriptive statistics such as percentages, mean, and standard deviation were used to explain the respondents’ demographic characteristics and to compare teachers and students’ responses on instructional leadership dimensions and school improvement domains.

In addition, inferential statistical techniques were employed to analyze the collected data. Accordingly, Pearson coefficient of correlation was used to see the association of each dimension of instructional leadership with school improvement domains. Likewise, the significant mean differences among schools on different issues of instructional leadership and school improvement were tested using one-way ANOVA. All the quantitative data were analyzed using statistical package for social sciences (SPSS) version -16 for windows.

In all the quantitative analysis, the existing differences were tested for statistical significance at the 0.05 alpha level to tolerate errors that come due to chance. The results of the quantitative data were backed or validated by the information obtained from the qualitative data. That is to say, following the analysis of data from quantitative sources, qualitative data sources were also included to support the information obtained. Hence, the study used a mixed methods design, which is a procedure for collecting, analyzing and “mixing” both quantitative and qualitative data at some stage of the research process within a single study, to understand a research problem more completely (Creswell, 2002).
In a mixed method approach, the researchers build the knowledge on pragmatic grounds (Maxcy, 2003) asserting truth is “what works” (Howe 1988, p.11). They choose approaches, as well as variables and units of analysis, which are most appropriate for finding an answer to their research question (Tashakkori & Teddlie, 1998). A major tenet of pragmatism is that quantitative and qualitative methods are compatible. Thus, both numerical and text data, collected sequentially or concurrently, can help better understand the research problem. Creswell, (2003) listed three issues that need consideration while designing a mixed methods study. These are priority, implementation and integration.

Priority refers to which method, either quantitative or qualitative, is given more emphasis in the study. As far as this research is concerned, more emphasis is given to the quantitative aspect compared to the qualitative one. Implementation refers to whether the quantitative and qualitative data collection and analysis come in sequence or in chronological stages, one following another, or in parallel or concurrently. In this regard, the investigator of this study collected the quantitative data first and then the qualitative data next.

The third issue that needs consideration while designing a mixed methods study is integration. It refers to the phase in the research process where the mixing or connecting of quantitative and qualitative data occurs. This study employed one of the most popular mixed methods designs in educational research; sequential explanatory mixed methods design. The purpose of this research design typically is to use qualitative results to assist in explaining and interpreting the findings of a primarily quantitative study. The two methods are integrated during the interpretation phase of the study (Creswell, 2007).
Sequential explanatory design is especially useful when unexpected results arise from a quantitative study (Morse, 1991). The main weakness of these designs is the length of time involved in data collection (Creswell, 2007). Accordingly, the data that were obtained through a thorough interview, FGD, and documentary review, were analyzed qualitatively using insightful interpretations and quotations, which cross-validate with the quantitatively analyzed data results.

In this regard, Creswell (2003) categorized the sequential explanatory mixed research into two distinct phases, which was also implemented by the investigator of this study. That is, in the first phase, the quantitative, numeric data were collected using questionnaires. Following this, the investigator gathered qualitative data using an interview guide and FGDs. These were also backed by some document sources.

Generally, the analysis of this research was based on the quantitative and qualitative data obtained from different sources. This helped to cross-validate the information obtained from qualitative sources with the quantitatively analyzed data.

3.8. Generalizability of the Study

Generalizability is the extent to which a researcher can generalize the account of a particular situation, context, or population to other individuals, times, settings, or context (Onwuegbuzie, & Burke 2006).

Maxwell differentiates internal generalizability from external generalizability, with the former referring to the generalizability of a conclusion within the underlying setting or group, and the latter pertaining to generalizability beyond the group, setting, time, or context. With regard to internal generalizability, the findings of this study could be
generalized to Secondary schools in Sidama and Gedeo zones, who share a common denominator. The people of the two zones share a common border and have similar social, political, cultural, economic, etc features as per the observation of the investigator.

As far as the external generalizability is concerned, it can be possible to generalize the findings of this study to all secondary schools in SNNPR. Even though there are some differences among the zones or schools in the region, the problems or issues of one school are almost similar, if not exactly the same to problems/ issues of other sister schools in the region. As the investigator tried to gather some information informally from his summer class students (secondary school principals) of the region, who have been attending training program for principalship at Dilla University, most of the issues raised in this study were prevalent in their schools, though they differ in degree. To mention a few, inactive participation of teachers in CPD program, weak activities of the SIP committee, and weak external supervision were some of the problems mentioned by the trainees to commonly exist in their secondary schools.

The findings of this study are generally said to be revealing to governments, policy makers, education providers, education bureau of the region, wereda education offices and zonal education Departments. The findings can also help school principals to give more emphasis to the instructional aspect of their job and to appropriately plan and implement the current school improvement activities in their schools. To achieve the objective of the study, the data collected from the field are treated in the following chapters.