CHAPTER II  
REVIEW OF RELATED LITERATURE

In this chapter, the writer discussed about the review of related literature which consisted of the previous study, the nature of vocabulary, the importance of vocabulary, the factors influence vocabulary mastery, vocabulary mastery, kinds of vocabulary, vocabulary assessment, the nature of speaking, micro and macro skills of speaking, the aims of speaking, types of speaking performance, speaking assessment, teaching english at SMA/MA level and correlation study.

A. Previous Study

1. Supriadi (2011), found that the students have positive respons that wordlist in boarding school is effective and supporting the learning process especially in English learning, where the students can find new vocabulary about English, solve their English problems and improve their English speaking skills.\textsuperscript{14}

2. Yunita Puspita Sari (2012), found that the more students practice in speaking the more vocabulary will be got, it shown that there is a positive correlation between vocabulary mastery and speaking skill.\textsuperscript{15}

\textsuperscript{14} Supriadi, The Use of Wordlist in Improving Students’ Speaking Ability at Pondok Pesantren Modern Al-Istigomah, Biromaru, 2011.

3. Afif Fauzi (2007), found that when students’ vocabulary increase at the same time there is improvement in their speaking ability and when students’ vocabulary decreases at the same time their speaking ability become weak.  

B. The Nature of Vocabulary

In order to live in the world, we must named the thing in and on it. Names were essential for the construction of reality. Without a name, it was absolutely difficult to accept the existence of an object, an event, a feeling, an emotion and etc. By assigning names, we imposed a pattern and a meaning which allowed us to manipulate the world.

Vocabulary played an important role in improving our skills in English. It was a core component of language as well as source or base when students spoke English. Without an extensive vocabulary and strategies for acquiring new vocabulary, learners often achieved less than their potential.

When students recognized much names whether the names of noun, adjective, adverb, pronoun, verb, and so on, it meant they were familiar with or know many words.

Visnja stated that a set of words known to a person or other entity is usually defined as vocabulary.

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16 Afif Fauzi, The Correlation Between Students’ Vocabulary Achievement and Speaking Ability at First grade Of SMAN 1 Ciputat, Jakarta: Syarif Hidayatullah State Islamic University, 2007.

According to Richards, vocabulary was one of the most obvious components of language and one of the first thing applied linguists turned their attention to.\textsuperscript{18}

Another definition, vocabulary defined as a list of words and, often phrases, abbreviation, inflectional forms, etc., usually arranged in alphabetical order and defined or otherwise identified as in a dictionary or glossary.\textsuperscript{19}

Based on the description above, the writer defined the vocabulary as a collection of words, terms and phrases which is arranged and explained to make up the meaningful language used by a person in expressing ideas, delivering a speech and describing thing or people.

1. The Importance of Vocabulary

Students used vocabulary which is arranged into sentence to express their ideas, opinions, thinkings, feelings and etc.

According to Alexander that stated vocabulary is important to students, it is more important than grammar for communication purposes, particularly in the early stage when students are motivated to learn the basic words they need to get by in language. Also, as the lexical system is ‘open’, there is always something new to learn when students have ‘done’ the grammar. So more advanced students are motivated to add to their vocabulary stock, to understand nuance of meaning, to become more proficient in their own choice of words and expressions.\textsuperscript{20}

\textsuperscript{18} Jack C Richards, \textit{Curriculum Development}, p. 4.
\textsuperscript{19} Meriam-Webster, \textit{Webster’s New World College Dictionary}, 4\textsuperscript{th} ed, Cleveland: Wiley Publishing Inc, 2002, p. 1600.
Alderson also stated that the size of one’s vocabulary is relevant to one’s performances on any language test, in other words, that language ability is to quite a large extent a function of vocabulary size.\(^{21}\)

The writer then stated that students should be given the vocabulary which was intimately related to the environment and the pupils early learn. So that, they became more proficient in choosing and expressing the words.

### 2. The Factors Influence Vocabulary Mastery

There were six factors influenced the vocabulary item was easy or difficult to learn, they were similiarity to mother tongue language, similiarity to English words already known, spelling and pronunciation, multi-word items, collocation and appropriate use.

- a. Similiarity to mother tongue language.\(^{22}\)
  
  The difficulty of a vocabulary item often depends on how similar the item is in form and meaning to the students’ first language.

- b. Similiarity to English words already known.\(^{23}\)
  
  Students have some English then a word which is related to an English word they are already familiar with easier than one which is not.

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c. Spelling and pronunciation.\textsuperscript{24}

The spelling of many English words can cause problems for students who speak language with very regular systems. Particular spelling patterns can also cause confuse where the pronunciation is concerned.

d. Multi-word items.\textsuperscript{25}

A lexical item may consist of more than one word, as in compound nouns or a phrasal verbs and idioms.

e. Collocation.

The way some grammatical structures are formed depends on knowing which words go with others and which do not. Taylor stated that knowing syntactic behavior associated with the word and also knowing the network of associations between that word and other words in the language.\textsuperscript{26}

f. Appropriate use.

Gower points some words and expressions are restricted to use in particular contexts. Also it is important that the students know whether the word or phrases has a marked style-informal or formal. Students have to take care with the use of colloquial and slang expressions.\textsuperscript{27}

\textsuperscript{25} Visnja Pavicic, ed David Singleton, \textit{Vocabulary Learning}, p. 6.
\textsuperscript{27} Roger Gower, Diana Philips & Steve Walters, \textit{Teaching Practice}, p. 144.
3. Vocabulary Mastery

Mastery was defined as a comprehensive knowledge or skill in a particular subject or activity. Vocabulary mastery was defined as the power to control, command, decide, and rule the vocabulary as an useful and fundamental tool for communication and acquiring knowledge.

Vocabulary mastery was one of components that needed to master English as foreign language. In learning four skills of language (listening, speaking, reading, and writing), students ought to master the vocabulary because without mastering the knowledge of words or vocabulary, the learners got noting in learning the four skills of language.

Students tried to practice their English skills to get wide range of vocabulary. By having wider range of vocabulary in their mind, it can help them to communicate in English better.

Teaching vocabulary is directly related to some other language activities. If learners need to cover the whole range of language skills, a productive vocabulary of around 3000 base words and large receptive vocabulary are needed. However, teaching vocabulary to young learner was not just simply presenting some words, but it has significant influence to the four language skills. Scott Thornbury stated that they were seventh level of vocabulary such as:

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Table 2.1 Level of vocabulary.

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>WORDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy starts</td>
<td>200 Words</td>
</tr>
<tr>
<td>Level One Beginner</td>
<td>300 Words</td>
</tr>
<tr>
<td>Level Two Elementary</td>
<td>600 Words</td>
</tr>
<tr>
<td>Level Three Pre-Intermediate</td>
<td>1,200 Words</td>
</tr>
<tr>
<td>Level Four Intermediate</td>
<td>1,700 Words</td>
</tr>
<tr>
<td>Level Five Upper-Intermediate</td>
<td>2,300 Words</td>
</tr>
<tr>
<td>Level Six Advanced</td>
<td>3,000 Words</td>
</tr>
</tbody>
</table>

Bachman defined the vocabulary ability includes both knowledge of language and the ability to put language in context. Thus, its three components are as follows:

a. The context of vocabulary use

b. Vocabulary knowledge and fundamental processes
c. Metacognitive strategies for vocabulary use.\(^{30}\)

In the correlation between vocabulary and speaking, according to Robert Lado, a 2000-word vocabulary represented the opinion of these leaders as to the size of minimum vocabulary for speaking.\(^{31}\)

In same line with Lado, Norbert stated that vocabulary of 2000 words would be realistic goal as found people regularly use about this many different words in


their daily conversation. Of course, this will not enable a conversation on every topic, and certainly not an in-depth conversation on most topics. But it should still allow satisfying interaction with native speakers on topic focusing on everyday events and activities.\(^\text{32}\)

According to McCarthy, conversation also contains a large amount of vocabulary whose function is mainly relational and interactional.\(^\text{33}\)

Also James Milton stated that the volume of vocabulary a learner knows is diverging the acquisition of other aspects of language and overall proficiency, then a much closer association might be expected. Learners with small or poorly developed vocabularies could not be as proficient nor as fluent in performing through the foreign language.\(^\text{34}\)

In fact, 2000 words seemed to be the most commonly cited initial goal for learners. In addition, to allow basic conversation this number of words is seen as providing a solid basis for moving into more advanced study.

4. Kinds of Vocabulary

According to the basic of frequency, vocabulary can be divided into two kinds, namely high frequency vocabulary and low frequency vocabulary.\(^\text{35}\)

a. High frequency vocabulary consist of words that are used very often in normal language use in all four skills and across the full range of situation of use. It consists of most of the function words of English and


the most of content words. High frequency vocabulary consists of 2000 words families, which are about 87% of the running words in formal written text and more that 95% of the words in informal spoken text.

b. Low frequency vocabulary on the other hand, covers only small proportion of the running words of a continuous text, it means that low frequency vocabulary is rarely used in a common activity of English language. This group includes well over 100,000 words families.

Besides, Evelyn Hatch also divided the vocabulary into two kinds, active and passive vocabulary.36

a. Active vocabulary is words which the students understand, can pronounce correctly, and uses constructively in speaking and writing.

b. Passive vocabulary is word that students recognize and understand when they occur in a context, but which he can not produce correctly himself.

According to Elfrida and Michael, there were two kinds of vocabulary, namely productive vocabulary and receptive vocabulary. Productive vocabulary is the set of words that an individual can use when speaking and writing. They are words that are well-known, familiar, and used frequently. Receptive vocabulary is the set of words for which an individual can assign meanings when listening or reading. These are words that are often less well known to students and less frequent in use.37

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To develop the whole range of language skills, the productive vocabulary and the receptive vocabulary are required for the learners. The productive learning was important for using vocabulary in speaking and writing. And the receptive learning was important for using vocabulary in listening and reading. The techniques which gave familiarity with a target of words are needed.

5. Vocabulary Assessment

Testing vocabulary provided a form of feedback, both learners and teachers. Testing also had a useful backwash effect, if the learners knew they were going to be tested on their vocabulary learning, they may take vocabulary learning more seriously. Testing motivated learners to review vocabulary in preparation for a test.  

Vocabulary assessment seemed straightforward in the sense that word lists were readily available to provide a basis for selecting a set of words to be tested. In addition, there was a range of well-known item types that were convenient to use for vocabulary testing. Here were some examples: 

a. Multiple-choice (choose the correct answer) 

b. Completion (write the missing word) 

c. Translation (give the L1 equivalent of the underlined word) 

d. Matching (match each word with its meaning) 

These test items were easy to write and to score, and they made efficient use of testing time. Multiple-choice items in particular had been commonly used in standardised tests. A professionally produced multiple-choice vocabulary test was

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38 Scott Thornbury, ed Jeremy Harmer, How to Teach Vocabulary, p. 129.
highly reliable and distinguishes learners effectively according to their level of vocabulary knowledge.

In this study, the writer used multiple-choice questions to check students’ vocabulary mastery. The questions consisted of 45 items. In order to find out the description of the individual student’s vocabulary mastery, the final scores are related to the following qualification:

**Table 2.2 Scoring rubric of vocabulary multiple choices questions.**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>True</td>
<td>1</td>
</tr>
<tr>
<td>False</td>
<td>0</td>
</tr>
</tbody>
</table>

C. The Nature of Speaking

When a student learned English language, it can not be perfect without learning speaking skill. To get the ability in speaking, it was not as simple as learning other skills in English. It took a long period and needed consistency to practice it.

Speaking was dealing with many things, it was thinking of what one wishes to say, choosing the right word from our vocabulary, putting the words in the proper grammatical framework, communicating the feeling we have, and so on. Speaking was not just about making sounds, birds, animals, babies, made sound and, though it may be communication of sorts, it was not speaking.

According to Donn Byrne, oral communication is a two-way process between speaker and listener or listeners and involves the productive skill of
speaking and the receptive skill of understanding (or listening with understanding).\textsuperscript{40}

Another definition, speaking is making use of language in an ordinary, not singing, voice.\textsuperscript{41}

Besides, speaking is also to tell or say, to declare or announce, to address, to make known or as by speaking.\textsuperscript{42}

From the description above, the writer defined speaking as meaningful utterance which is expressed to express ideas, deliver speech, make social contact and describe things or people.

1. Micro and Macro Skills of Speaking

Brown differentiated between microskills and macroskills of speaking, the microskills referred to producing the smaller chunks of language such as phonemes, morphemes, words, collocations, and phrasal unit. The macroskills implied the speaker’s focus on the larger elements, in example fluency, discourse, function, style, cohesion, nonverbal communication, and strategic options.

a. Microskills of Speaking\textsuperscript{43}

1) Produce chunks of language of different lengths.

2) Orally produce differences among the English phonemes and allophonic variants.

\textsuperscript{40} Donn Byrne, \textit{Teaching Oral English}, New York: Longman, 1979, p. 8.


3) Produce English stress patterns, word in stressed and unstressed positions, rhythmic structure, and intonational contours.
4) Produce reduced forms of words and phrases.
5) Use an adequate number of lexical units (words) in order to accomplish pragmatic purposes.
6) Produce fluent speech at different rates of delivery.
7) Monitor your own oral production and use various strategic devices—pauses, fillers, self-corrections, backtracking—to enhance the clarity of the message.
8) Use grammatical word classes (nouns, verbs, etc.), systems (e.g., tense, agreement, pluralization), word order, patterns, rules, and elliptical forms.
9) Produce speech in natural constituents—in appropriate phrases, pause groups, breath groups, and sentences.
10) Express a particular meaning in different grammatical forms.
11) Use cohesive devices in spoken discourse.

b. Macroskills of Speaking

1) Accomplish appropriately communicative functions according to situations, participants, and goals.
2) Use appropriate registers, implicature, pragmatic conventions, and other sociolinguistic features in face-to-face conversations.

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3) Convey links and connections between events and communicate such relations as main idea, supporting idea, new information, given information, generalization, and exemplification.

4) Use facial features, kinesics, body language, and other nonverbal cues along with verbal language to convey meanings.

5) Develop and use a battery of speaking strategies, such as emphasizing key words, rephrasing, providing a context for interpreting the meaning of words, appealing for help, and accurately assessing how well your interlocutor is understanding you.

2. The Aims of Speaking

In our real life, we easily saw that everybody moved to do their activities, to get what they wanted and needed. Some of them went to office to work and finally got their salary, students went to school to study hard because they wanted to pass the examination, mother treated her child mercifully because she wanted him to grow up and became a wise man. In short, everybody had some purposes when he or she did an activity or when people did something, they had some aims with it.

It is also happened when someone spoke to others. He or she had aims. These aims relatively intended to get easy in communication because the easiest way of communication was by speaking.

Richards stated that speaking is used for many different purposes. When we use casual conversation our purposes may be to make social contact with people, to establish rapport, to engage in the harmless chitchat that occupies much of the
time we spend with friends. When we engage in discussion with someone, on the other hand, the purpose may be to seek or express opinions, to persuade someone about something, or to clarify information. We use speaking also to describe things, to complain of people’s behavior, to make polite request, or to entertain people with jokes and anecdotes.\(^4^5\)

In addition, numerous attempts had been made to classify the functions of speaking in human interaction. They were:

a. As Interaction

This refers to what we normally mean by “conversation” and which describes interaction which serves a primarily social function. When people meet, they exchange greeting, engage in small talk and chitchat, recount recent experiences and so on because they wish to be friendly and to establish a comfortable zone of interaction with other. The focus is more on speakers and how they wish to present themselves to each other than on the message.\(^4^6\)

Mastering the art of talk as interaction is difficult and may not be a priority for learners. However, students who do need such skills and find them lacking report that they sometimes feel awkward and as loss for words when they find themselves in situation that requires talk for interaction. They feel difficulty in presenting a good image of themselves and sometimes avoid situations which call for this kind of talk. This can be disadvantage for some learners where the ability to use talk for conversation can be important.

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b. As Transaction

Talk as transaction refers to situation where the focus is on what is said or done. The message is the central focus here and making oneself understood clearly and accurately, rather than the participants and how they interact socially with each other.\(^{47}\)

As Richards stated, Anne Burns distinguishes talk as transaction into two different types. One is a situation where the focus is on giving and receiving information and where the participants focus primarily on what is said or achieved. Accuracy may not be a priority as long as information is successfully communicated or understood. The second type is transaction which focus on obtaining goods or services, such as checking into a hotel.\(^{48}\)

c. As Performance

The third type of talk which can usefully be distinguished has been called talk as performance. This refers to public talk, that is, talk which transmits information before an audience such as morning talks, public announcement, and speeches.

Talks as performance tends to be in the form of monolog rather than dialog. Often follows a recognizable format and is closer to written language than conversational language. Similiarity it is often evaluated according to its effectiveness or impact on the listener, something which is unlikely to happen with talk as interaction or transaction. Examples of talk as performance are giving

a class report about school trip, conducting class debate, giving a speech welcome, making a sales presentation, giving a lecture.\textsuperscript{49}

3. Types of Speaking Performance

Speaking can be applied in many different ways. The difference is caused by the aim achieved. Here were six appropriate oral performances: \textsuperscript{50}

a. Imitative

A very limited portion of classroom speaking time may legitimately be spent generating “human tape recorder” speech, where, for example, learners practice an intonation contour or try to pinpoint a certain vowel sound. Imitation of this kind is carried out not for the purpose of meaningful interaction, but for focusing on some particular element of language form.

b. Intensive

Intensive speaking goes one step beyond imitative to include any speaking performance that is designed to practice some phonological or grammatical aspect of language. Intensive speaking can be self-initiated or it can even form part of some pair work activity, where learners are “going over” certain form of language.

c. Responsive

A good deal of student speech in the classroom is responsive: short replies to teacher or student-initiated questions or comments. These replies are usually sufficient and do not extend into dialogues.

\textsuperscript{49} Ibid, p. 27.
\textsuperscript{50} Brown H Douglas, \textit{Teaching by Principles}, p. 271.
d. Transactional (dialogue)

Transactional language, carried out for the purpose of conveying or exchanging specific information, is an extended form of responsive language. Conversations, for example, may have more of a negotiative nature to them than does responsive speech.

e. Interpersonal (dialogue)

The other form of conversation mentioned was interpersonal dialogue, carried out more for the purpose of maintaining social relationships than for the transmission of facts and information. These conversations are a little trickier for learners because they can involve some or all of the following factors:

1) A casual register

2) Colloquial language

3) Emotionally charged language

4) Slang

5) Ellipsis

6) Sarcasm

7) A covert “agenda”

f. Extensive (monologue)

Finally, students at intermediate to advanced levels are called on to give extended monologues in the form of oral reports, summaries, or perhaps short speeches. The monologues can be planned or impromptu.
4. Speaking Assessment

The type of criteria we use to access a speaker’s oral performance during a classroom activity will depend on which kinds of talk we are talking about and the kind of classroom activity we are using. Different speaking activities such as conversations, group discussions, and speeches make different types of demand on learners. They require different kinds and level of preparation and support, and different criteria must be used to assess how well students carry them out.\footnote{Jack Richards, \textit{Teaching Listening and Speaking}, p. 39.}

Type of spoken tests that commonly used are:\footnote{Scott Thornbury, ed Jeremy Harmer, \textit{How to Teach Speaking}, Edinburgh Gate: Person Education Limited, p. 125.}

a. Interview, the class can be set some writing or reading task, while individual are called out, one by one, for their interview.

b. Live monologues, the candidates prepare and present a short talk in a pre-selected topic.

c. Recorded monologues, learners take turns to record themselves about a favourite sport or past time, for example, in a room adjacent to the classroom, with minimal disruption to the lesson.

d. Role-plays, students will be used to doing at least simple role-play in class.

e. Collaborative task and discussion, these are similar to role-plays except that the learners are not required to assume a role but simply to be themselves.
A speaking activity that requires talk as performance would require very different assessment criteria. These may include:

a. Clarity of presentation, the extent to which the speaker organizes information in an easily comprehensible order.

b. Use of discourse marker, repetition, and stress to emphasize important points and to make the lecture structure more salient to the listeners.

In this study, the writer used an extensive (monologue) or students’ performance on giving the summaries of the text to check their speaking ability. The final score are related to the qualification based on KKM at eleventh grade students of MAN Model Palangka Raya that the minimum score criteria was 80 for English subject.

Table 2.3 Scoring rubric of speaking.\(^{53}\)

<table>
<thead>
<tr>
<th>No</th>
<th>Criteria</th>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Pronunciation</td>
<td>5</td>
<td>Has few traces of foreign accent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>Always intelligible, though one is conscious of a definite accent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>Pronunciation problem necessities concentrated listening and occasionally lead to misunderstanding.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Very hard to understand because of pronunciation problems, most frequently be asked to repeat.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Pronunciation problems to serve as to make speech virtually unintelligible.</td>
</tr>
<tr>
<td>2.</td>
<td>Grammar</td>
<td>5</td>
<td>Make few (if any) noticeable errors of grammar and word order.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>Occasionally makes grammatical and/or word order errors that do not, however obscure meaning.</td>
</tr>
</tbody>
</table>

| 3. Vocabulary | 5 | Use of vocabulary and idioms is virtually that of native speaker. |
|  | 4 | Sometimes uses inappropriate terms and/or must rephrases ideas because of lexical inadequacies. |
|  | 3 | Frequently uses the wrong words conversation somewhat limited because of inadequate vocabulary. |
|  | 2 | Misuse of words and very limited vocabulary make comprehension quite difficult. |
|  | 1 | Vocabulary limitation so extreme as to make conversation virtually impossible. |

| 4. Fluency | 5 | Speech as fluent and efforts less as that of a native speaker. |
|  | 4 | Speed of speech seems to be slightly affected by language problem. |
|  | 3 | Speed and fluency are rather strongly affected by language problem. |
|  | 2 | Usually hesitant, often forced into silence by language limitation. |
|  | 1 | Speech is also halting and fragmentary as to make conversation virtually impossible. |

| 5. Understanding | 5 | Appears to understand everything without difficulty. |
|  | 4 | Understand nearly everything at normal speed, although occasionally repetition may be necessary. |
|  | 3 | Understand most of what is said as slower than normal speed without repetition. |
|  | 2 | Has great difficulty following what is said, can comprehend only “social conversation” spoken slowly and with frequent repetition. |
|  | 1 | Cannot be said to understand even simple |
D. Teaching English at SMA/MA Level

Teaching English in SMA/MA level based on the syllabus that is applied in the school. This study investigated the correlation between students’ vocabulary mastery and speaking ability especially at eleventh grade students.

According to the syllabus of SMA/MA level, the objective of the teaching learning process is designed to enable the students to speak English covering various topics, activities, expression, and etc. Furthermore, the materials were talking more about asking and giving opinion and advice, declaring hopes and wishes, invitation, privated letter, procedure text, passive voice, conditional sentences, factual report, analytical exposition text, biography text, and songs.

E. Correlation Study

Correlation is a technique for determining the covariation between sets of scores; paired scores may vary directly (increase or decrease together) or vary inversely (as one increases, the other decreases). Correlational research is research that attempts to determine the extent and the direction of the relationship between two or more variables.\textsuperscript{54} There were three possible results of a correlation study:

1. Positive Correlation: the variables increase or decrease together at the same time. A correlation coefficient close to + 1.00 that indicates strong positive correlation.

\textsuperscript{54} Donald Ary, Lucy Cheser Jacob, Chris Sorensen, Asghar Razavieh, \textit{Introduction to Research in Education}, p. 639.
2. Negative Correlation: indicates that as one variable increases, the other decreases. A correlation coefficient close to –1.00 that indicates a strong negative correlation.

3. No Correlation: indicates that no relationship between the variables. A correlation coefficient indicates no correlation.

The sign (+ or -) of the coefficient indicated the direction of the relationship. If the coefficient had a positive sign, this meant that as one variable increased, the other also increased. For example, the correlation between height and weight was positive because tall people tended to be heavier and short people lighter. A negative coefficient indicated that as one variables increased, the other decreased. The correlation between outdoor air temperature during the winter months and heating bills was negative; as temperature decreased, heating bills rised.

The size of the correlation coefficient indicated the strength of the relationship between the variables. The coefficient can range in value from +1.00 (indicating a perfect positive relationship) through 0 (indicating no relationship) to -1.00 (indicating a perfect negative relationship). A perfect positive relationship means that for every z-score unit increases in one variable there is an identical z-score unite increases in the other. A perfect negative relationship indicates that for every unit increase in one variable there is an identical unit decrease in the other. Few variables ever show perfect correlation, especially in relating human characteristics.\(^{55}\)

\(^{55}\) Ibid, p. 350.