

**LINGUISTIC FALLACIES IN
ARGUMENTATIVE WRITINGS OF
UNDERGRADUATE STUDENTS AT NUML:
A CASE STUDY**

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Linguistic Fallacies in Argumentative Writings of Undergraduate Students at NUML: A Case Study

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The undersigned certify that they have read the following thesis, examined the defense, are satisfied with the overall exam performance, and recommend the thesis to the Faculty of Arts & Humanities for acceptance.

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ABSTRACT

Title: Linguistic Fallacies in Argumentative Writings of Undergraduate Students at NUML: A Case Study

Linguistic fallacies are common errors in reasoning that can make an argument seem less logical. When writing an argument, these fallacies show that the arguments are not valid or are not important. Therefore, the purpose of this case study is to identify and analyze different types of linguistic fallacies used in the argumentative writings of students enrolled in the third semester of the English Department at the National University of Modern Languages (NUML), Islamabad. This case study employs a descriptive exploratory methodology. One hundred and twenty argumentative essays are collected from students who take an academic writing course as a subject. Mayfield's (2014) model of inductive and deductive fallacies is used to determine the informal fallacies. The findings of the study demonstrate that students made a number of linguistic fallacies (inductive and deductive) in their work. Some of these fallacies were so basic that they could really be prevented with the use of clear and explicit instruction. The results also show that students came to a conclusion without presenting sufficient evidence to support it in their writing. The findings provide a contribution to improving the effectiveness of writing materials and courses by focusing on the unique characteristics of students and also provide strategies for students to avoid fallacies in argumentative writing in future.

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LIST OF ABBREVIATIONS

NUML	National University of Modern Languages
AW	Academic Writing

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DEDICATION

I dedicate this thesis to my beloved parents.

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Communication is essential to the survival of all humans, and it is impossible to communicate outside of a social context. To communicate effectively, it is essential to understand the relationships between language and individuals. These links include sophisticated information, such as advice on whether you should speak in an informal or official manner with a friend or employer, as well as advice on whether you should shorten an email. All of these demand skills not just in language but also in culture and society (Amberg & Vause, 2010). Languages are studied because of their practicality, adaptability, and capacity to be taught to others. Communicating with other people involves sharing one's ideas, feelings, and thoughts with others in a process known as interpersonal communication (Overmyer, 2021a). The words might be of a personal, theoretical, or philosophical character. The essence of man is that of a social animal. We share our opinions with one another since doing so is required by most aspects of modern society. Communication strategies that involve providing individuals with feedback can help them improve their behaviour and establish stronger connections. These approaches enable people to better understand each other and build closer relationships. For successful communication, the communicator needs to be skilled at expressing themselves in a clear, simple, and honest manner, while also being adaptable. The dissemination of ideas and the growth of people, communities, and civilizations all depend critically on one another's ability to form social relationships. During this phase of the process, we are able to provide feedback and get initiations. Therefore, interaction is an inherent part of communication (Overmyer, 2021b).

Learning English is viewed as a gateway to further education and greater employment opportunities. English is considered a second language in any country where it is not the main language used for communication (Rao, 2019). If you want to speak clearly, it is important to prioritise the acquisition of everyday vocabulary when learning a language. Nowadays, the need for training in multiple languages has expanded beyond political reasons to include scientific and technological reasons as

well. The English language of Great Britain is no longer just a national symbol; it has become the most important language in the world because it is necessary to understand the rest of the world. It is known as the 'Lingua Franca' of the modern world since it is the language used in new sciences, information technology, as well as in all types of competitive tests (Ahmad, 2016). English language is considered one of the most difficult languages to master due to its odd spelling and syntax. Due to the fact that the English language is both fluid and dynamic, it may be rather difficult to learn for those who are attempting to acquire English as a second language or as a language from another country (ESL or EFL) (Alizadeh, 2016). An example of this is the consistent challenge that comes with writing; both groups of learners experience it in distinctively different ways. It is possible that the challenges arose during a certain time period. Instead of translating, which is another solution that is frequently stated, this problem is approached in a different way by students of English as a second language (ESL) and English as a foreign language (EFL). It is challenging for ESL students to choose a single word, and they also struggle while choosing between many alternative wordings. In addition, students learning English as a second language tend to fall behind their counterparts who speak their original language in vocabulary, and they have difficulty expressing uncertainty in their written work (Fedrick, Beck, & Llosa, 2013).

Writing is one of the skills that students obtain when studying English. The ability to write well is essential for effective written communication. As stated by Cole and Feng (2015), even for the most intelligent student, producing quality writing is not always simple and might be a difficult task. Mastering writing can be challenging because English language learners often think in their native language before trying to translate their thoughts or ideas into English. Furthermore, the ability to master vocabulary and correctly use grammatical tenses have become the most crucial factor in producing writing of high quality (Shauda, 2019). An important genre of writing includes argumentative essay. It is a piece of writing in which students are supposed to defend their ideas or opinions with solid evidence to convince readers to accept their argument. By engaging in argumentative writing, students gain the ability to articulate their points of view, ideas, and arguments (Defazio et al., 2010). When students talk about a topic, they need to understand adequate information about it to back up what they say. They are encouraged to construct and generate arguments to support their

explanations. When students write argumentative essays, they sometimes use words or sentences in ways that are not quite right, this results in making their argument weak in structure. For instance, they might say something is true or everyone when it might not be, or they might try to persuade using feelings instead of good reasons, resulting in fallacies (Edhah, 2019). Fallacies are error in reasoning that can make an argument seem persuasive but actually weaken its validity. The fallacies sidetrack the actual discussion and weaken the overall strength of an argument. Another reason student tends to make fallacious statements is because when students write argument essays, they rely on emotions instead of facts to prove their points. They focus on making the readers feel something strong rather than showing real proof for what they are saying (Armstrong & Fogelin, 2010). This notion is also stated by Blair and Johnson (2009) in their work that rhetorical strategies for convincing readers cannot be isolated from arguments. The occurrence of fallacies in students' arguments is frequently linked to critical thinking issues. Existing research offered solid evidence that critical thinking abilities remained an issue in educational settings (Palavan, 2020). Significant effort has been devoted to training students to think critically about the information they receive. In a study by Sherman (2013), for instance, it was shown that the usage of internet media helped for the development of higher-order skills by evaluating the authenticity of information sources. The incorporation of critical thinking skills into the teaching and learning process was destined to encourage students to think more critically about the information they received, evaluate the reliability of the source, and assess the evidence (Nejmaoui, 2018). In this regard, Dowden (2020) underlined that the most essential part of critical thinking is the ability to draw conclusions that require thorough reasoning. Moreover, he stated that critical thinking abilities were also known as logical reasoning. Students in argumentative writing are expected to utilize logic and reasoning to back up their claims. Students' critical thinking abilities allowed them to give solid evidence and coherent reasoning in their argumentative writing (Putri, 2018). It is important for students to be aware of linguistic fallacies. This awareness helps them avoid making the same errors and become more conscious of defects in both other people's arguments and their own work. Considering the matter, this case study is employed to investigate the problems and provide strategies for avoiding fallacies in argumentative writings. It is going to assist students in developing an awareness of the various types of linguistic fallacies and, as a result, assist them in avoiding making the same mistakes in their own writing. This case study has analyzed

a sample of argumentative essays that were collected from students of the National University of Modern Languages (Department of English UGS), Islamabad, to see how their arguments are formed and the way linguistic fallacies are integrated into language patterns. Since NUML is so well known for its language courses and because it grants a bachelor's degree in English, the researcher believed it was appropriate to obtain a sample and conduct the research on this educational institution. The proposed case study research has offered valuable insights into the challenges students encounter when expressing valid arguments. Moreover, a thorough analysis, evaluation and interpretation were conducted. Additionally, research demonstrated that teaching basic writing skills along with giving strategies might provide positive outcomes, such as producing valid arguments incorporating good statements that are based on valid reasoning. In order to accomplish this goal, the fallacy classification model proposed by Mayfield (2014) has been implemented. This model makes an attempt to place common linguistic fallacies into one of two main categories: inductive reasoning fallacies and deductive reasoning fallacies. Both of these types of fallacies manipulate through language, emotions, and biases or prejudices.

1.2 Thesis Statement

In writing, students frequently have difficulty articulating a logical topic and presenting a distinct point of view. They have a tough time making rational arguments by offering accurate evidence that supports their opinions, which makes it difficult for others to agree with them. Because of the lack of strong relationship development, arguments might fail in a variety of different ways. Students frequently make the mistake of jumping to hasty generalized conclusions when attempting to draw inferences from data, which leads to errors that call into question the authenticity of the entire text. They are uncertain about what to write and lack confidence in their claims, which leads to linguistic errors that cause low credibility. Since their writing is flawed, it is unable to affect the audience or the readers. As a result, the purpose of this study was to investigate and identify the presence of linguistic fallacies in the writing patterns of undergraduate students studying English, to measure the frequency of recurring fallacies, to analyze the effect on writings due, and to provide strategies for avoiding making fallacies in writings.

1.3 Research Objectives

- To explore the presence of linguistic fallacies in the argumentative writing of BS English students
- To determine the frequency of the frequently used fallacies
- To study the effect of these fallacies on the writing of the students
- To provide the strategies for avoiding fallacies in argumentative writing

1.4 Research Questions

Q1. What are the commonly used linguistic fallacies in the argumentative writings of the Undergraduate students of English at NUML?

Q2. How often do students use the fallacies in their writings?

Q3. What effect do these fallacies have on students' writing?

Q4. What strategies can be implemented to overcome the linguistic fallacies in argumentative writing?

1.5 Significance of Research

This research is significant primarily for language students in terms of making their arguments valid and powerful. It is done by giving them a basis for analyzing their work critically in order to avoid creating weak claims and baseless ideas. In practice, this research is beneficial to professors in the classroom since it gives information on the linguistic fallacies that are present in students' argumentative writings. It is possible that this proves to be helpful for linguistic academics in the process of mapping out a clear link between language and cognition.

1.6 Rationale of the Study

Studies by Kaya et al. (2013) have shown that incorporating argumentation into scientific education can aid students in understanding complex concepts. The two main steps are making a choice and presenting facts to support it. This is often opposed by opponents who use counter arguments. Newton, Driver, and Osborne (1999) stated that

while students are able to come up with new ideas and evidence to support their arguments, they tend to make fallacious errors in the process. When premises lack logical support, the arguments that result from them are weak and unverified. Hence, the aim of this research is to identify fallacious errors and show how they affect the overall quality of writing.

Case study research is a type of qualitative/subjective educational research. It focuses on comprehending and interpreting complicated social occurrences from the participants' points of view (Starman, 2013). This approach contrasts with the scientific paradigm, which seeks to develop theoretical models that can be evaluated through systematic experimentation. A case study is carefully observing a specific, clearly defined group of people (such as a group, a class, etc.) in a realistic situation (Fessakis, Gouli, & Mavroudi, 2013). The rationale behind conducting a case study was on NUML is significant to mention. NUML is committed to promoting inclusive communication, creative learning, and innovative research. Currently, it offers courses in 27 oriental and occidental languages, as well as several emerging fields of study. Secondly, the English programme offered by NUML facilitates students in developing a comprehensive understanding of the subject matter and techniques employed in the fields of literary studies, English teaching, academic, professional, and especially creative writing. Additionally, it also offers general education courses in communication. The Department's principles and its curriculum, which emphasises reading and writing, clearly illustrate their dedication to the liberal arts. Hence, the researcher finds it a significant initiative that makes it an interesting case worth studying. Moreover, as a student at this university, the university provided easy access to gather the data and required resources. Students and faculty staff showed willingness to cooperate during data collection, making it a practical choice for conducting an in-depth research. Lastly, NUML being famous for its languages courses, no prior studies have been conducted on the writings, especially on argumentative essays of students enrolled in Bachelor program of English. There has been a lack of comprehensive studies or literature about this particular topic, indicating the need for an in-depth case study to fill this gap in the academic discourse. Hence, the proposed case study focuses on the linguistic fallacies found in argumentative essays written by BS English students of the third semester at NUML, Islamabad. The research is organised in the following manner: first, an overview of studies on fallacies in writings is provided. Then, the results of the case

study are presented. Finally, the interpretations of the findings and potential future directions for further study are discussed.

1.7 Delimitations

The proposed study focused only on the identification of linguistic fallacies in the argumentative essays written by students of BS English third semester (morning and evening sessions) at National University of Modern Languages (NUML), Islamabad.

1.8 Organization of the Study

The current study focused on the following chapters, each of which includes its own unique set of specifics:

1. Introduction

This chapter of the study provides a comprehensive background, a statement of the problem, the objectives of the study, research questions, the rationale of the study, and the delimitations.

2. Literature Review

In this chapter, the variables that are relevant to the study are discussed in a hierarchical sequence, and a connection is made between each of those variables. It provides a more in-depth examination of the work that has previously been done in the field of linguistic fallacy.

3. Research Methodology

This chapter offers a comprehensive look at the theoretical and analytical framework of the research, as well as the data analysis tools and the data analysis process.

4. Data Analysis

This section contains an identification and evaluation of the sample taken in light of the selected theoretical framework.

5. Conclusion

This chapter comprises the research findings, discussion and suggestions for future research.

CHAPTER 2

LITERATURE REVIEW

This chapter provides an overview of the literature present in the respective field of study. It links the major components of the study to previous work done in the relevant field. The following variables are critical to the present study. They have been placed in a hierarchical order to help the readers maintain a flow between the variables and draw a better relationship between them.

2.1 Fallacy

The word “fallacy” is derived from the Latin “fallacia,” which means deception, deceit, trick, or artifice. However, a more precise meaning in logic dates back to the 1550s, meaning “wrong syllogism and flawed arguments” (Bennett, 2012, p. 120). A fallacy is an error in reasoning. Some fallacies are classified as formal fallacies because they can be identified by “the examination of the argument’s form,” while all other fallacies are classified as informal because they can be identified “by the examination of the content rather than the form of the argument” (Johnson, 1999, p. 251). Similarly, Tindale (2007, p. 42) defined a fallacy as “a specific category of egregious inaccuracy.” He also stated that it weakens the argument’s credibility. Moreover, according to D.N. Walton (1991, p. 341), a fallacy is a “deliberate” and “misleading” argumentation tactic that one side in a conversation will employ to “slip up” another party. One reason an argument may be incorrect is due to a lack of awareness on both sides of the debate, as well as deliberate misdirection and manipulation of the language used to influence the audience’s perception of the situation (Budden, 2007).

Apart from that, there is no denying that fallacies may take on a psychological component in the form of deceit and delusion. Fallacies violate norms of reasoning or argumentation. To describe arguments that are both emotionally persuasive and logically wrong, the phrase ‘logical reasoning error’ is sometimes employed. Although it is not intended to, it has the effect of persuading people, which is exactly what argumentative writing is all about: persuading people (Walton, 2010).

2.1.1 The concept of fallacies

Arguments that contain fallacies are flawed in a way that makes them less persuasive. Arguments that are not valid are quite prevalent and may be very effective in certain circumstances. They could even be unsubstantiated statements offered with a zeal that makes them sound as if they are verifiable truths (McMullin, 2000). Incorrect reasoning can also be done in an incorrect manner through the use of linguistic fallacies. The arguments put forth by someone are also flawed because this thinking process is inaccurate and lacking in precision (Murawski, 2014). There are two paths that can lead to the failure of an argument. The first problem arises when the premises that make up an argument are incorrect; as a result, the conclusions that follow are equally wrong, despite the fact that the foundation of the reasoning created is based on true premises. Second, if someone comes to the conclusion that the argument's conclusion is correct despite the fact that the premises that are used to form the argument do not describe the conclusion that is being sought, then the argument is invalid (Dewi, 2021). To provide a brief overview, fallacies are flawed lines of reasoning that are based on the substance of the arguments.

2.1.2 Linguistic fallacy

The subject of fallacy is one of the complicated issues investigated by argumentation theorists. Logic, dialectic, pragmatic, and pragma-dialectic viewpoints are all used to deal with fallacies (Al-Haboobi & Al-Rikabi, 2022). Aristotle defined fallacies as 'dishonest' strategies used by the arguer to attack his opponent in a debate (Walton, 1995). Hamblin (1970, p. 254) critiques the usual treatment of fallacies as "seemingly valid" and suggests a dialectical approach to fallacies in dialectical circumstances. Some scholars take a pragmatic approach to fallacies. Walton (1995) proposes that fallacies should be dealt with pragmatically in talks. He further defines a fallacy as the misuse of an argumentation scheme and theme, which subverts the dialogue's purpose.

Similarly, according to Johnson (2000), a fallacy results from breaching the standards of a sound argument, which include 'acceptability,' 'sufficiency,' 'truth,' 'relevance,' 'criticism,' and 'dealing with objections.' Furthermore, according to Dewi (2021), linguistic fallacies refer to mistakes in thinking that are founded on flawed or inadequate logic. When used in a more formal argument, they have the potential to undermine the credibility of the writer. It is not uncommon for authors to employ

fallacies on purpose with the aim of making an argument appear more convincing or legitimate than it actually is. Different definitions of linguistic fallacies are found in contemporary works of literature. These definitions are offered in a variety of settings. The notion of fallacy categorization has been put forward by a few academics. Diversionary and structural fallacies are among the most common. There are five different varieties in each of the two categories. Two kinds of fallacies have been identified by Walton (2008) and Mayfield (2014); each of these two categories has less than 20 different forms of fallacies in it. There are a further four categories introduced by Copi *et al.* (2014): fallacies of relevance, imperfect induction, presumptions, and fallacies of ambiguity.

2.1.3 The classification of fallacies

The theory of fallacies may be viewed as a more relevant contribution to the examination of reasoning than other methods (Ramasamy, 2011a). To some extent, this is true, but not in the same way that theories of fallacies are concerned. It is possible to categorize fallacies just according to their 'structures' or 'contents.' For instance, fallacies might be categorized as formal or informal based solely on these criteria. A formal fallacy is classified according to its structure (logical form), while an informal fallacy is classified according to the content of the argument (Bennett, 2012). Informal fallacies, on the other hand, appear to deal more directly with the judgment of resonance, making them more promising in the long term (Finocchiaro, 1981).

In other words, formal fallacies are arguments or logical mistakes that are considered incorrect due to the fact that the conclusion does not support the premises. They were deductions or conclusions that were manifestly wrong or unjustifiable, but informal fallacies were arguments that were flawed because they pertained to the substance of the assertion. In order to have sound reasoning, there must be precise diction and a proper form. Errors in form are what are referred to as formal fallacies. The use of ambiguous language is what distinguishes formal fallacies from their informal counterparts.

Informal fallacies deal with logical issues pertaining to the meaning of language, whereas formal fallacies deal with logical issues relevant to the structure of technical discourse. The word informal does not symbolize any sort of inferiority, casualness, or impropriety by itself. It only indicates that we are putting more

emphasis on the content of the argument than its structure. Misuse of language, such as vocabulary or syntax; misstatements of fact or opinion, misunderstandings due to underlying presuppositions; or just simple faulty thinking processes are all instances of informal fallacies. In conclusion, informal fallacies are logical flaws that can only be identified by analyzing the substance of the argument (Rohmani, Nur Indah & Kusuma, 2016).

2.1.4 The definition of writing

When it comes to writing, we think of it as translating a word or phrase into an arrangement of letters that corresponds to the sounds we make. According to Sokolik (2003), the activity of writing may be characterized by three primary contrasts. Writing is both a cerebral and a physical act; its goals are to express and impress others, and it focuses on both the process of writing and the finished output. In the first key comparison, writing is described as the action of manually committing symbols to paper or a computer screen by moving a pen or keyboard. Writing is contrasted with typing, which is defined as the act of typing. On the other hand, it is a cerebral activity that involves coming up with ideas and considering how to convey those thoughts through the medium of the written word. In the second major contrast, the purpose of the writing is to convey to the readers or audience a particular thought or emotion in a particular way. In the third important contrast, writing refers to the procedural stages that a writer goes through in order to generate a piece of written work.

Nurhalimah (2021) argues that not only is writing an instrument for communication, but it is also an instrument for intellectual growth and development. It is a tool. Writing is to arrange the graphic symbols in accordance with certain conventions, which are responsible for word formation. Just like the arrangement of sentences linked to each other, the arrangement of words in a coherent text is the result of these conventions (Byrne, 1988). Vygotsky (2012), on the other hand, argued that writing is a conscious activity that demands a high degree of abstraction. Consequently, it may be concluded that writing is more than merely putting words together; rather, it is a complex process that requires plenty of thought and effort to generate a well-written piece of work.

2.1.5 Academic writing

Academic Writing (AW) is the style of writing required for academic assignments such as dissertations, articles, essays, and research papers. Most university writing assignments require students to take a position on a topic, which necessitates the use of convincing evidence to persuade the reader and defend their point of view (Trident University International [TUI], 2014, as cited by Hamrit, 2021). Moreover, Hood (2010) states that academic writing is concerned with the ways in which individuals place themselves in relation to knowledge. Where specific direction is offered in the management of interpersonal meaning, which means that AW is written in a way that minimizes subjectivity to a large extent and promotes objectivity. Also, as stated by Oshima (2006), the purpose of AW is distinct from writing for other purposes, such as personal writing, journalistic writing, or business writing. The specific audience, tone, and purpose of it are what differentiate it from similar works. Hence, certain skills are necessary for academic writing, including sentence structure, or how to organize words in a sentence; organization, or how to arrange ideas inside a paragraph; grammar, and punctuation (Hogue, 2008).

2.1.6 Types of Academic writing

There are four primary types of academic writing. The first one is descriptive; it establishes the facts and information that give the context of the utilized arguments. The second kind is analytical, which entails reorganizing the provided material into categories, groups, components, types, or connections. Third, persuasive; the researcher identifies what he or she has studied with a personal perspective that can include an argument, recommendation, interpretation of findings, or evaluation of the work of others, and finally, critical; common for research, postgraduate, and advanced undergraduate writing. It necessitates that the writer explains a researcher's interpretation or argument and then assesses the merits of that assertion or presents his or her own alternative interpretation (University of Sydney, 2021).

2.1.7 Relation of linguistic fallacy with writing

Identifying and eliminating linguistic fallacies, both in others' arguments and one's own, is an important part of effective writing when taught in conjunction with argument and critical thinking. Linguistic fallacies, also known as reasoning errors or faults, are errors or flaws in reasoning that prevent a writer or reader from grasping the

full reality of a situation. If a writer's ideas are solidly grounded in logic, they can be examined without the taint of fallacies. Also, fallacies prevent a writer or reader from grasping the full reality of a situation (Ball & Loewe, 2017). Additionally, arguments that contain faults in logic might possibly weaken the logic of their arguments in the light of critical thinking skills or logical reasoning as a required ability in argumentative writing to carefully assess facts and supporting arguments. By evaluating the content of the argument, one might identify faults in thinking, known as informal fallacies (Ramasamy, 2011b). Students who used informal fallacies in their argumentative writing took the risk of failing to give sufficient evidence to back up their claims.

Furthermore, according to Lismay (2020), writers benefit when they know fallacies are subjective and people only look for them when they dislike an argument. Fallacy searching reveals more about the researcher than the argument. Second, writers should avoid using fallacies as argument conclusions. Too often, errors spark confrontational debates focused on winning rather than understanding. Fallacies might be an indication of something wrong that needs research. Third, authors benefit when they acknowledge that fallacies are part of the real world, where partial knowledge and logical leaps are necessary. When authors view communication as chaotic, fallacies become the reason we keep communicating. Errors in reasoning are known as fallacies. If a speaker or writer utilizes it as a trick of reasoning in order to deceive or influence his audience, it can happen by accident. Formal and informal fallacies undermine the validity and soundness of any argument when they are used. Because of this, fallacies can harm the credibility of the speaker or writer and mislead the audience's or reader's feelings. Hence, Oktavia (2014) urged writers to avoid fallacies that might undermine their claims. When these three traditional appeals-emotional, logical, and ethical-are utilized correctly, they may be used to improve arguments. But they can be used to manipulate readers, leading to arguments that are unconvincing when they are used incorrectly. This assumption is made in reaction to this.

2.1.8 The definition of Argumentation

Over the course of its 2500-year history, the term argumentation has taken on many different connotations. People's reasoning has been typically referred to as argument since the seventeenth century (Toulmin, 2001). In reality, arguments have a wide range of practical applications that are not limited to their formal characteristics

(Walton, 1992). Arguments are used to persuade, negotiate, consult, argue, and resolve differences of opinion in the context of a discussion. It is crucial to make these distinctions since these types of discussions involve speech acts with communicative obligations for the participants (Van Eemeren & Grootendorst, 1992). Van Eemeren, Grootendorst, and Henkemans (1996, p. 5) defined argument as:

Argumentation is a verbal and social action of reason designed to increase (or decrease) the acceptability of a challenging position for the listener or reader by presenting a cluster of propositions intended to validate (or reject) the position before a rational judge.

This definition emphasizes two different facets of the reasoning process. To begin, the presentation of a constellation of premises suggests that the arguments themselves have a structure and organization that, when taken as a whole, have an effect on whether or not a stance is acceptable. Second, arguments are acts of reason, and persons who are reasonable utilize critical norms to determine whether or not a particular position is acceptable. These requirements ought to be guided by normative concerns regarding the qualities that distinguish persuasive arguments. The arguments for consequences have historically been seen as a flawed line of reasoning due to the fact that they are based on speculation about what could take place and the lack of precise evidence regarding what will take place. As a result, linguistic fallacies can occur when there is a mismatch between the position and the justification that supports it (Walton, 1992, as cited in Ferretti, Weckerly, & Lewis, 2007).

2.1.9 Argumentative Writing

According to Van Eemeren and Grootendorst (2004, p. 1), argumentation is a “verbal,” “social,” and “rational” activity intended to persuade a reasonable critic of the acceptability of a perspective by putting forward a constellation of assertions justifying or disputing the proposition contained in the stance. Examining the “internal order” of the arguments has always been a subject for argumentation theorists. They ultimately adhered to argumentation schemes, which they defined as “forms of argument (structures of inference) that enable one to identify and evaluate frequent types of reasoning in everyday language” (Walton *et al.*, 2010, p. 11).

Deductive, inductive, and defeasible (also known as presumptive or abductive) kinds of argument are included in these schemes, which, according to Walton and Reed

(2005), depict “stereotypical patterns of reasoning” (Walton *et al.*, p. 1, 2010). The third group of argument types fell under the category of fallacies (Walton, 2006). A fallacy is referred to as “error in reasoning” (Johnson 1998, p. 251), which includes both formal fallacies that can be found by looking at the form and informal ones that can be found by looking at the substance of the argument. A particular type of egregious error is covered by both formal and informal fallacies, which weaken the force of an argument (Tindale, 2007, p.1). Moreover, evidence and logic are required in order for something to be deemed an argument (Boghossian, 2002). To further explain this, Hasibuan and Manurung (2020), citing Quinn (2009), state that an argument should start with a label, then an explanation, and finally examples. In his opinion, explanation is evidence supporting the previous explanation; tie-back serves to validate complete argument structures with a brief and simple remark. When evaluating an argument, one of the most important things to do is recognize the necessity of utilizing evidence to support one’s claim in a satisfying, appropriate, and sufficient manner (Stucki, 2018).

Argumentation schemes have been proposed as a useful method of defining aspects of human reasoning that have proven challenging to view deductively, such as the argument from expert opinion. Numerous schemes share a connection with particular informal fallacies that illustrate the kinds of mistakes that might occur when a scheme is applied incorrectly. These models show how sound processes of reasoning can be used incorrectly in specific situations where an argument is considered weak. The majority of studies on fallacies in informal logic and argumentation have adopted a normative approach, viewing fallacies as arguments that do not follow the rules for how an argument should be employed in rational thinking (Walton, 2011). In fact, in one of the studies, Kakandee (2015) revealed that students’ challenges in argumentative writing included not just grammatical structures and lexical characteristics but also logical reasoning in the argumentative features. Producing strong evidence to create a well-organized essay remained one of the key challenges among EFL students in terms of argumentative characteristics.

Furthermore, the findings revealed that strong argumentation tactics were essential for argumentative writing, with logical reasoning serving as the primary basis. Specifically, argumentative writing is a form of writing that allows writers to convey their perspective on a topic and defend it with solid reasoning and facts. In today’s society, the ability to construct a convincing argument is crucial. EFL students’

intellectual aptitude for critical thinking is crucial to their argumentative writing skills (Husna & Kurniawati, 2021). Hence, in order to persuade readers to accept the arguments made in an argumentative essay, students need to back up their ideas and opinions with solid proof. As stated by Blair and Johnson (2009), rhetorical strategies for persuasion cannot be used to distinguish between opposing viewpoints. Three traditional arguments to persuade readers, as outlined by Crowley (2004), are logos, or logical appeal; ethics, or moral appeal; and pathos, or emotional appeal, all of which are based on Aristotle, the Greek philosopher and scientist. Conversely, Pharr (2005a) argued that the three basic appeals may also be abused, which results in arguments that are not trustworthy and fallacies that might possibly undercut the validity of the arguments.

2.1.10 The purpose of argumentative writing

According to research done on argumentative writing, the goal of argumentative writing is to convince the reader of something. In this respect, Pharr (2005b) emphasized that persuasion was considered an argument in the context that persuasion was one of the purposes of the argument. Aside from shifting people's views or convincing them to accept new viewpoints, argumentative writing is also aimed at convincing people to do certain acts or new actions, presenting an argument, and influencing an audience to follow or at the very least examine the argument of the writer. Similarly, the primary goal of argumentation and an argumentative essay is to advocate a stance on an issue or topic. The best authors, however, wrote for an audience and hoped that the people who read their work would understand why they did it in such a powerful manner (Moore & Parker, 2007).

2.1.11 Importance of arguments

Students can accomplish a variety of learning objectives through argumentative debate when viewed from the perspective of a classroom activity. One of the most significant benefits of argumentative writing is that it encourages students to go deeper into the concepts they are learning (Bransford & Brown, 1999). A second benefit of getting learners involved in debates is that they learn about different types of argument structures (Kuhn, 2001).

When students participate in argumentative discussions, they learn to work together and build a sense of social awareness and overall collaborative abilities

(Vygotsky, 1980; Wertsch, 1985). Students' participation in social groups needs to include being able to argue effectively, as people in a wide range of social contexts typically engage in arguing (Billig, 1996; Koschmann, 2003). An argument requires students to examine and synthesize information from numerous sources, according to Warren (2010), who believes this is a necessary ability for students to learn. As a result of this, he believes that students who are good at putting together arguments are better able to master academic material because the processes they go through allow them to conduct research, make claims based on their findings, provide evidence to back up those claims and persuade their peers to back up those claims. If students are concerned about issues that impact them or their communities, they should be prepared with arguments backed up by facts and evidence, as well as alternative opinions, in order to convince their intended audiences. Arguments are used to support viewpoints and include premises, assumptions, and conclusions. It is important to understand that one negative premise results in a false conclusion (Daeli, 2020).

Moreover, it is important for students to state good arguments, as according to Crusius, Timothy, and Carolyn (2003), good arguments involve proof in the form of facts and instances rather than just an assertion of an opinion and the grounds for the assertion of that belief. Using this definition of argument, mature thinking is characterized by careful evaluation of all the possible outcomes. An argumentative piece of writing enables authors to express their views from both sides of the issue with an attitude in which each side's advantages and disadvantages are fully understood.

2.1.12 Relation between critical thinking and writing

In addition to linguistic fallacies, critical thinking capacity affects students' ability to compose argumentative writing. Critical thinking may be viewed as both a component of writing skill and a distinct aspect of writing (Dewi, 2021). Similarly, according to Ennis (2001), critical thinking is categorized as both a talent and a disposition. When it comes to ability, it falls under the cognitive domain, whereas disposition falls under the affective domain. Writing requires the capacity to comprehend information and extract knowledge, which requires the ability to think critically. Arman (2014, as cited in Dewi, 2021) acknowledged that writing is impossible without rationality and logical thought. By employing critical thinking, writing will be more meaningful, and misinterpretation of logical fallacies may be

avoided. Critical thinking is seen as a valuable educational goal, yet it remains elusive, which is understandable given the lack of agreement on what defines critical thinking. There is little understanding of what it means to reason, judge, make decisions, and solve problems, let alone how these abilities might be improved through intervention. Although there is no agreement on the specific skills that make up a critical thinking range of skills, there is broad agreement that recognizing linguistic fallacies is an essential and crucial skill, as detecting weak arguments is a major component of the most widely accepted consensus meanings of critical thinking (Ong, Normond, & Schenk, 2017).

Equally important, academic writing is not an easy endeavor, especially for students who are taking English as a Foreign Language (EFL) in tertiary education. It demands familiarity with the various forms of academic writing, each of which has its own set of linguistic characteristics. In short, critical thinking plays a significant role in academic education since it is essential for students' success in both academic and real-world contexts. Learning a new language is one of the academic applications that make use of critical thinking. As stated by Atac (2015), methods of critical thinking require a more inclusive understanding of language. By altering their critical thinking, students can become more conscious of how to acquire a language rather than what to learn.

2.1.13 Deductive and Inductive reasoning

Deductive and inductive reasoning are two of the most common forms. Throughout history, people have relied on deductive and inductive reasoning in their thinking and writing (Pharr, 2005). For example, deductive and inductive reasoning were used to describe the process of drawing a conclusion and the reasoning behind that conclusion. A position that takes into account the advantages and disadvantages of both sides. As stated by Pharr (2005), when it comes to deductive and inductive reasoning, the former relies on broad principles, and applies them to specific circumstances, while the latter relies on specific examples. In addition, drawing an inference from presuppositions that are usually accepted to be true in order to reach an inference is known as deductive reasoning, which is also known as deductive logic. Deductive reasoning appeared to be popular among students, but there were some drawbacks, such as the risk that the author would produce an essay based on false premises (Pharr, 2005). Whereas, inductive reasoning refers to the process where

individuals use inductive reasoning to derive generalizations from more specific examples. The key distinction between deductive and inductive reasoning is that the former is used to provide evidence for a conclusion, while the latter is used to speculate on what that conclusion may be (Pharr, 2005). In short, while deductive arguments are used to establish a conclusion, the purpose of inductive arguments is to foretell the outcome of a situation. In inductive reasoning, a clear response is not provided for the premises, but an attempt is made to illustrate that the conclusion is the most likely one given the facts.

2.2 Previous Studies

The concept of a fallacy as a linguistic error is used to cover a wide range of fallacies. Logic faults are sometimes misinterpreted as reasoning errors. If a flawed argument is accompanied by poor (illogical) thinking, argumentation theory appears to be the one that provides the most important and general answers to concerns about right reasoning (Koszowy, 2003). Numerous studies have been done on the subject of linguistic fallacies. Analytical exposition and fallacies are examined for the first time by Selpia (2021). Eighty students from a well-known Bandung high school in the 12th grade were involved in this case. For the second part of her research, she looked for and examined students' thinking processes in relation to the linguistic errors made in writing expositions. Distraction, emotional manipulation, and the inductive fallacy are some of the techniques used in these presentations. Rationalistic thinking was shown to be the most common in the research. The fallacy of uncertain causation, rapid generalization, and appeal to fear predominate in student expositions, with 12 different sorts of fallacies being detected in each one of them. It is interesting to note that, despite the fact that the students tended to follow rationalist patterns in their thinking, mistakes still happened. Students' statements were not devoid of errors despite their use of rationalistic thinking patterns. Students' thinking styles and all sorts of frequent fallacies were examined in great detail. Students' linguistic fallacies are the topic of this study as was the prior one. As a result, the researcher found logical and linguistic errors in analytical essay writing at the level of high school students.

Similarly, when it comes to creating argumentative essays, linguistic fallacies have been examined. Shauda (2019), in his studies, demonstrates that in writing, students make a variety of logical errors, including word ambiguity, deceptive

euphemism, appeal to fear, excessive generalization, false causation, and slippery slopes. Some of the fallacies are just so basic that they could be avoided by following simple rules. Students reach their findings without consulting professionals, and the sample size of their conclusions is inadequate. In argumentative writing, he discovered that the majority of participants employed informal linguistic fallacies to reach conclusions.

Indah and Kusuma (2015) did their research on the fallacies identified in the claims of fact, value, and policy made by English department students at UIN Maulana Malik Ibrahim Malang. They leverage qualitative design as the focus of their analysis. Students at UIN Maulana Malik Ibrahim Malang who took a critical writing course provided the data in the form of claims. Factual claims can be tainted by fallacies such as oversimplification, begging the question, and irrelevancy. Pathos fallacies include *ad populum*, *emotional premises*, and *red herrings*, to name just a few. According to the findings of the study, students are increasingly interested in claiming value in their work, which requires a model for students to follow when inferring conclusions. It is not enough to use emotion and irrelevant information to persuade readers of the same value rationale. Due to the fact that these two ethos fallacies have been found to be the most prevalent in students' claims of value. They also suggested that when attempting to persuade your audience to believe in the same value justification, do not just use your emotions and criticize your opponents. More advice and modeling from teachers is needed so that students can avoid making unwarranted false assertions when presenting the proposed policy. Students should be taught how to avoid certain types of fallacies in argumentative writing as part of their course material.

This study's findings on various *logos*, *ethos*, and *pathos* fallacies in statements of fact, value, and policy need to be supported by more empirical evidence from other situations. Hence, students are supposed to be made aware of fallacious elements that result in making their overall reasoning and statements flexible and weak. If students understand the correct rationale, they will see an improvement in their grades. They must be aware of logic and fallacies in order to avoid making mistakes and to be aware of the power of someone else's arguments. In fact, they should be taught reasoning abilities from an early age; they do not need to be mature to begin making strong, precise, and factual arguments (Brookhart, 2010).

Additionally, Atai and Nasser (2010) conducted their research to investigate the most common types of informal fallacies in the argumentative essays of Iranian EFL learners. In addition to detecting fallacies, they sought to evaluate whether there was a pattern in the use and selection of fallacies in their publications. They discovered that the most common informal fallacy utilized by Iranian EFL students in their argumentative essays was ‘violation of RSA’ and that the participants’ gender, age, and academic discipline had no bearing on how frequently and what kinds of informal fallacies they used. However, one of the most common errors—the violation of RSA (relevance, sufficiency, and acceptability)—was found in language learners’ writings in the humanities, social sciences, languages, and arts disciplines.

Another study conducted by Oaksford and Chater (2020) discovered and discussed fallacies in the argumentative writing of EFL learners in their study titled *Logical Fallacies in EFL Learners’ Argumentative Writing: Students’ Perspectives*. Forty argumentative essays prepared by students in the State University of Malang’s English Department were examined for this purpose. The identification of fallacies in their writing led to the organization of a Focus Group Discussion (FGD) debate with students who took part in the essay-writing process. The study’s findings revealed that students continued to commit a variety of language errors in their writing, some of which were extremely elementary and could have been avoided with straightforward, unambiguous training.

Moreover, Oktavia (2014) did research on “English Department students of UNP” and found that one of the difficulties faced by English students when writing an argumentative essay was the difficulty of presenting convincing arguments to support a position. An effective argument is one that does not break any of the important discourse norms. If it breaks, the argument becomes fallacious in nature. The study aimed to identify common fallacies students use in their argumentative essays. Students were supposed to pay closer attention to the strength of the defense and reduce any weak arguments after learning about these linguistic fallacies. The students’ infractions of critical discussion guidelines were primarily due to their inability to give sufficient evidence and facts to back their positions, according to the study’s findings.

Critical thinking abilities include the capacity to examine assertions and arguments, and linguistic fallacies are often associated with problems with critical thinking in the classroom. Elkhoiri and Widiati (2017) carried out yet another study that

was connected to argumentative writing; this study investigated fallacies that were present in the argumentative writing of Indonesian EFL Learners. The findings of this study revealed that students' written work had a number of logical fallacies, some of which were quite fundamental, and could have been avoided by providing them with teaching that was straightforward and plain.

Davarpanah, Izadpanah, and Fasih (2021) conducted a study to determine the connection between the argumentative writing skills of EFL learners and the frequency, types, and informal fallacies they encountered. 130 students who tested as upper-intermediate took part in this correlational study out of the 356 second-grade female senior state high school students from four Zanzan schools who were chosen for this purpose using the multistage cluster random sampling (MCRS) method and the Cambridge placement test (2010). The primary data collection phase lasted for a month. The final results showed a strong inverse relationship between the participants' critical thinking and the frequency of informal fallacies in their written reasoning. Also, a significant and strong connection was found between the participants' critical thinking and how frequently they used informal fallacies.

In addition to this, academic writing requires a high level of critical thinking. Hence, a study was conducted by Aunurrahman, Hamied, and Emilia (2017) to investigate the academic writing abilities of the students, with a particular emphasis on critical thinking. A total of thirty-six first-year tertiary English as a Foreign Language (EFL) students from a normal class at a private institution in Pontianak, West Kalimantan, Indonesia, participated in the research. There were three different pieces of literature that were chosen, and the students were ranked according to their levels of writing achievement: low, medium, and high. For the purpose of the text analysis, a functional grammar that was founded on systemic functional linguistics was applied (Emilia, 2014). According to the findings of the investigation, students have very little control over the schematic structure and linguistic characteristics of argumentative writing, and this is true independent of the students' levels of writing achievement. The results of the text analysis also demonstrate that the students' writing has some limits with regard to their capacity for critical thinking. Based on the findings, it suggests that the lecturer should implement activities that involve both explicit instruction and cooperative learning in order to help students overcome their challenges and enhance their ability for academic writing and critical thinking. Apart from that, Aqeel, Shah,

and Bilal (2020) conducted their research to examine MPhil theses in order to support the claim that fallacies and critical thinking are common in “academic writing”. The study examined the use of fallacies in research and the reasons for and against abandoning logical thinking. The six processes outlined in Cohen, including organizing information, considering evidence, structuring reasoning, evaluating arguments, identifying assumptions, and conveying conclusions, were applied to analyze the data using a mixed method (qualitative and quantitative). A common sort of error committed by researchers is known as a heuristic fallacy, which is a shortcut to solving a problem. Despite the fact that they are fair to utilize, jumping to conclusions is not always warranted. It is common for researchers to make mistakes in their haste. To sum up their findings, most of the researchers’ argumentation falls flat. A lack of critical thinking is evident in the arguments, which are based primarily on conventional ideas. Deceptive fallacious arguments can look better than they actually are. In addition, teachers and students alike find it difficult to write argumentative essays for a variety of reasons. One of them focuses on the development of critical thinking abilities, such as the ability to recognize and avoid logical errors.

Students’ capacity to convey their thoughts in the form of logical arguments is a true indication of critical thinking. In order to have a strong argument, you must have convincing claims as well as precise writing that avoids fallacies. For this purpose, a study was conducted by Indah (2016) on the argumentative essay of Indonesian Islamic University students on global concerns, which has several erroneous statements and logical defects. The findings reveal that the discussion of global issues, the relationship between the audience and the individuals involved in the discussions, and the relationship between the audience and the characters are all wrong. Claim types and the logical defects they contain also come into play. Claim-based fallacies include generalizing too quickly, assuming too much without knowing enough, assuming too much without doing anything, and begging the question. Ad populum, appeals to emotion, and red herring fallacies are all examples of pathos fallacies. Since critical thinking involves creating logical and perfect reasoning, it is recommended that students develop these skills. Furthermore, Rahmah and Saminan (2020) aimed to evaluate alternative approaches to teaching argumentative writing through electronic learning in their study on the influence of logical application on developing critical thinking abilities in argumentative writing. Writing abilities will be emphasized in this

paper because they allow students to communicate their thoughts in writing. While learning, critical thinking abilities can occasionally make it challenging for students to articulate and develop their ideas in writing, leaving them stuck in the writing process without being critical. Therefore, in order to aid students in learning concepts, comprehending the structure of arguments, and refining their thinking, researchers emphasize logical applications as an e-learning medium. In order to explain how teachers use rational applications and how students think critically in their argumentative writing assignments, this research employs a qualitative descriptive methodology. The findings demonstrate that logical application helps students become more creative and motivated to create argumentative essays about structural features while also examining how to use evidence generally to support ideas. It was discovered that the fundamental structural components used by Chinese EFL students to build argumentative writing were claims and data. The results give EFL teachers insightful information about how to teach argumentative writing.

Moreover, a study by Diab (2011) and Stapleton (2015) found a correlation between the kind of argument and its quality. The importance of peer editing and self-editing in a writing job was discovered in a prior study. Self-editing and peer-editing have roughly the same power to improve a piece of writing. However, the latter demonstrated that various patterns in adequacy in the reasoning were pointing to the need for a large assumption in the reasoning quality of persuasive writing. When Paul Deane (2014) spoke about reasoning in literacy, he emphasized its importance. Teachers' instructional judgments about how to teach writing are supported by his model, which aims to assess students' growth as critical argumentation in a writing job.

Major areas of research in examining language learners' argumentative writing outputs have been inspired not only by the gender of the language learners but also by their difficulties in expressing their thoughts in writing in a foreign language (Alagozlu, 2007). Alagozlu (2007) gathered Turkish EFL students' argumentative essays and examined them in terms of critical thinking components and individual voice because she had noticed that the students had trouble coming up with their own assertions and were not given any incentive to think critically. She also identified the most common types of informal fallacies in Turkish EFL students' argumentative essays as 'straw man fallacy', 'oversimplification', 'hasty generalization', 'irrelevant conclusion', 'ad hominem' and 'begging the question', after examining the critical thinking components

and individual voice. Her study of argumentative writing samples revealed that there were fewer explanations and types of evidence than there were claims. In other words, the evidence was insufficient, which prevented their assertions from being adequately supported. Hasibuan and Manurung (2020) researched linguistic fallacies found in English education students' arguments. As a descriptive qualitative study, the focus of this research is on how students of English as a second language express themselves in their writing. A combination of observation, recording, and in-depth interviews were used to gather the information. In this study, students' ability to construct logical arguments differed depending on the dominant label in the 'non-standard argument' group, the data showed. The appeal to pity, the appeal to fear, the questionable figures, the slippery slope, the appeal to the bandwagon, the circular reasoning, the pointing to another wrong, and the personal attack are the most common logical fallacies in students' arguments. Anxiety and a lack of comprehension of reasoning and fallacies are among the likely reasons for these phenomena, according to the interview. In addition, students should be taught how to structure logical arguments and avoid linguistic fallacies, according to the authors' recommendations.

Furthermore, a case study was conducted by Stapleton and Wu (2015), where one hundred and twenty-five Hong Kong high school students used a modified Toulmin model for argumentative essays that contained claims, counterclaims, and rebuttals. Six typical essays were chosen and assessed for their perceived quality of reasoning based on the modified Toulmin model's surface structure. The 46 PhD students who completed a questionnaire and ranked the 20 most prevalent arguments in the 125 essays were able to reach this conclusion. Several patterns of inadequacies in reasoning were discovered, highlighting the need to pay more attention to students' persuasive writing's reasoning quality. Using an analytic scoring rubric and integrated assessment framework for argumentative writing, Arthus (2017) produced and proposed a general guide for classroom use, taking into consideration both argumentative structure and substance. Another study conducted by Saidi (2020) aimed to determine whether there was any connection between linguistic and logical competences and the occurrence of informal fallacies and different types of evidence in Iranian EFL learners' argumentative writings. For this purpose, 110 upper-intermediate EFL students were given the opportunity to reply to the relevant MIDAS items and to compose an argumentative essay. Using two models of argumentation, the four types of evidence

and informal fallacies were determined. The only category of informal fallacies and evidence that was missing from argumentative essays was statistical evidence. A substantial association between the participants' linguistic and logical intelligences and the frequency of informal fallacies and evidence types in their reasoning was found by the Pearson product-moment correlation coefficient. However, there was no discernible difference in the prevalence of informal fallacies and forms of evidence in the argumentative writings of male and female EFL learners. By taking into account the unique differences of the learners, the findings help to improve the effectiveness of writing resources and courses. Secondly, fallacies have been investigated in relation to the field of politics. Melakopides (2018) has completed the research project that focuses on the strategic implementation of logical fallacies against President R.T. Erdogan and his associates. The findings of this research indicate that there are multiple linguistic fallacies, including red herrings, begging the issue, and ad hominem arguments, among others. In addition, Zhou (2018) examined the use of linguistic fallacies in political discourse as part of his research on logical fallacies, which has been studied. This researcher made an attempt to investigate the logical fallacies that were committed by politicians in the United States when discussing political subjects such as abortion, immigration, and gun regulation. According to the findings of this research, out of the 18 different forms of fallacies, the post hoc fallacy, the hasty generalization fallacy, the slippery slope fallacy, and the straw man fallacy are the most common and widely utilized types.

Apart from this, many books have been written on addressing inductive reasoning fallacies to help students comprehend their mistakes and errors while making an argument sound valid. Wright (2002) provides students with a nontechnical vocabulary and analytical equipment for identifying and articulating the basic patterns inherent in reasoning and expository writing. Understanding these reasoning patterns aids students in better analyzing, evaluating, and constructing arguments, as well as comprehending the broad range of arguments. The book sets itself apart from previous texts in the field by highlighting the importance of critical reading as a talent. It also covers argument analysis, diagnostic arguments, diagnostic patterns, and fallacies in great depth. Students can determine what distinguishes reasoning from other expository tasks, and the text then gives an interrogative model of argument to help them analyze and evaluate reasoning. This model allows for a more extensive description of inference

to the best explanation and provides students with an understanding of how common this type of reasoning is. The author shows how this articulated form can be used to assess a variety of typical argument types, from correlations to sampling. He then goes on to show how the model may be used to deal with a variety of predictive and normative arguments, as well as the importance of the fallacy vocabulary. Similarly, another author, Mayfield (2014), says that students who comprehend linguistic fallacies have at least three benefits. They will first learn about correct logic; second, they will attempt not to use incorrect logic; and third, they will not be influenced by fallacious arguments. She favors an 'inside-out' approach for improving students' thinking, perceiving, writing, and awareness skills rather than teaching from the 'outside-in' of rules and limitations. In her book, a variety of applications, examples, rules, and explanations of critical thinking concepts are provided in detail. Mayfield presented a wide range of errors and mistakes that students should avoid in their writings to make them more accurate and authentic based on proper evidence and premises.

All the above-mentioned research is based on the impact of linguistic fallacies on spoken and written discourse by making them plausible or claiming the false evidence to be true. My research has filled the gap in how students of BS English at NUML state their opinions and ideas regarding a given topic and how their statements are embedded with fallacious stances.

CHAPTER 3

RESEARCH METHODOLOGY

This section described the methods chosen to carry out the study and offered rationale for each step. This chapter proceeded methodically, beginning with an explanation of the study paradigm and research methodology and concluding with the data collection and analysis procedure. Before exploring the specifics of the research component, however, the chapter outlines the theoretical and analytic framework employed for the study.

3.1 Research Design

The present research aimed at conducting a case study focusing on argumentative essays to identify and analyse the use of linguistic fallacies. A collection of argumentative essay documents was selected as a primary source of data from the students of the BS English third semester, aiming to provide comprehensive insights. In this case study, content analysis served as a primary methodological approach as it allowed a systematic review of the argumentative essays, enabling a structured approach to identify and categorise different types of fallacies. It also offered an objective way to identify and quantify fallacies, minimising subjectivity and ensuring consistency and reliability in the analysis process. The expected outcomes included the examination of various persuasive strategies employed within the essays, gaining insights into authors' viewpoints, and revealing patterns in the development of arguments.

3.2 Research approach

The present research is mixed-method in nature. The research starts the data analysis with the exploration and identification of the linguistic fallacies used by the students in the selected sample. The study then moves on to the calculation of the frequencies of the frequently used fallacies. The frequency of each respective fallacy is then presented in the data analysis chapter in tabular form. This makes the present study quantitative in nature. On the other hand, the effect produced by the use of fallacies in the argumentative essays has been analysed and further interpreted. Also, strategies are

provided for avoiding fallacies in the argumentative essays. This is done using the inductive and deductive fallacy models given by Mayfield (2014). This in-depth analysis of the selected sample makes the present study qualitative in nature. Since the current study has both qualitative and quantitative data on board, it is mixed-method research.

3.3 Theoretical Framework

English language is filled with shades of meaning, ambiguous expressions, and vague terminology. Its use evolves, sometimes unpredictably, depending on the collective mood of the individuals using them. Languages are difficult to comprehend. A smart debater can use this state of affairs to make false but convincing arguments by exploiting the ambiguities of language. The exploitation of language involves highlighting facts and claims that support one's argument while diminishing others (Knachel, 2021).

According to Rabiah (2018), language never exists without connotations is true. Even if they are not intentional or known to the writer or the speaker, a person's choice of words conveys meaning. The freedom to make linguistic choices is an illusion. The way people use language to express them is influenced by how they see themselves and others, and the ways they and others use symbols of power (Zvi, 2009). Oshima and Hogue (2005) states that writing is a progressive activity. Progressiveness in writing is when students want to start the first step of writing about a certain topic. After that, they read over their writing, and then they will make some corrections and changes. The teaching of writing skills can help students develop other language skills because writing is one of the most important parts of the language. Students can gain knowledge of grammar, idioms, and vocabulary through writing (Shauda, 2019). To write successfully, students must experience difficulty when it comes to putting their ideas and arguments on a page. This means they will find their needs fulfilled by using appropriate and relevant words that relate to the context. Other than that, writing is also recognized as a useful skill in conveying thoughts. The model of communication that takes place between an author and a reader is the real thing. The writer has a communicative purpose while the reader wants to read for any relevant article or a piece of information, and the writer chooses from the language store to express his/her ideas. The reader processes a variety of

languages to interpret the writer's ideas or minds. The existence of a linguistic fallacy, which can be characterized as an error in reasoning, can be seen in argumentative writing, either in arguments that are unsupported or irrelevant points. Despite the critical significance that the topic of linguistic fallacies plays in evaluating the validity of an argument, the subject has not been fully examined in the context of EFL, likely because other problems such as grammar, structure, and mechanics demand more immediate attention (Khoiri & Widiati, 2017).

The proposed study aimed at uncovering the existence of such linguistic fallacies in the academic writing of undergraduate students. For that purpose, Mayfield's (2014) model of inductive and deductive reasoning fallacies are used as both a theoretical and analytical framework. In research, Mayfield's framework is used especially in the context of learning in higher education. Mayfield (2014, p. 307 – 343) attempts to categorize frequent fallacies under the two main labels inductive reasoning fallacies and deductive reasoning fallacies. The fallacy taxonomy can be used as a guide to assessing the strength of the arguments given in an argumentative essay. The fallacy approach is a method of evaluating arguments using a list of fallacies. In this approach, the evaluation focuses on identifying specific errors that decrease the argument's strength. This method of argument evaluation works by determining whether or not an argument contains fallacies such as emotional, slippery, or contradictory ones.

The research aimed to identify and study the use of fallacious reasoning in argumentative essays because by developing the skill of identifying them in written materials, we can enhance our capacity to evaluate the arguments that we hear, read, and present. For this purpose, Mayfield's (2014) conceptual framework of the fallacy model is relevant to my study because the proposed classification of fallacies helps students learn how to use critical thinking skills to evaluate ideas that seem convincing. Mayfield's work is relevant for researching in written material, as she was awarded the McGuffey Longevity by the Textbook & Academic Authors Association (TAA) for her textbook 'Thinking for Yourself,' which was originally published in 1983, but then in 2013 its 9th edition was published too. In addition to that, TAA also considered Mayfield to be an innovator in the combination of writing and critical thinking. Moreover, Mayfield, as a theorist, is relevant for my study because, like a theorist who contributes significantly to a field of study by creating frameworks, explanations, and

hypotheses that help understand, analyse, and expand knowledge within that discipline, Mayfield has also contributed to mapping out fallacies and critically analysing the writings. To prove this stance, Mayfield's fallacy model has been used by many researchers, including Khoiri & Widiati (2017), Hidayat et al. (2020), Warman (2019), Hasibuan, Yusriati & Manurung (2020), and Dewi (2021), as a theoretical framework to conduct their studies on fallacies. Moreover, academically, for 29 years, educational institutes have been adding Mayfield's work to their English courses, and it has given teachers and students a unique way to teach that is based on a progression of exercises meant to make students more aware of how they think and perceive things. It has also given teachers and students a way to fully integrate critical thinking skills and standards with writing and reading skills. All things considered, it can be said that Mayfield, as a theorist, is relevant to conducting this study.

3.3.1 Inductive Reasoning Fallacy and operationalization of the model

Mayfield (2014) has provided a model of the inductive reasoning fallacy in her book titled *“Thinking for Yourself: Developing Critical Thinking Skills through Reading and Writing”*. The model, along with its definitions, is presented in tabular form below. The definition section includes examples of each inductive fallacy. Moreover, every example that is mentioned is further elaborated on to demonstrate how the arguments appear weak and insufficient in providing evidence to back up the claims.

Table 1

Mayfield's (2014) Model of Inductive Fallacies

Types of Inductive Fallacy	Definition
1. Hasty generalization	Draws conclusion from insufficient sampling. <i>“My brother-in-law is tall and skinny like all Chinese.”</i> (In this case, the sample size isn't big enough to back up the results. When we are tired, upset, or angry, we are more likely to jump to conclusions. It keeps us from having to deal with a lot of trouble. It can also lead to stereotypes.
2. Questionable statistics	The fallacy of presenting evidence in the form of incorrect, deceptive, or unknowable data.

“Illegal aliens cost American citizens \$5 billion a year.” (What exactly are we covering when we say “cost”? Secondly, the term “illegal aliens” is also deceptive. But if they’re illegal, how did anyone keep track of them to figure out how much they’re costing the American people? In what other costs did this estimate factor? Without these details, the reader may start to suspect that the \$5 billion number is completely made up.

3. Inconsistencies and contradiction Use claims that contradict one another.

“All men are equal; it is just that some are more equal than others.” (It offers logically incompatible claims or evidence).

4. Loaded question Uses a biased question.

“Do you believe we should allow TV ads aimed at toddlers to condition them to crave junk food?”

(Saying "Yes" here is uncomfortable. A "No" would make your opponent's position undefended. You may have meant to say that TV ads are First Amendment-protected. However, the inquiry is unfair because it presupposes what it is trying to prove—that television ads can train youngsters to crave junk food.).

5. False dilemma When there are other options, an either-or argument creates a dilemma of two options.

“Do you have only a few friends or a large circle of friends?” (How do you answer this question if you have many friends in some places but not others? “Not either/or, but both/and,” you wish to say. False situations are often constructed to persuade).

6. Weak analogy	<p>Drawing a comparison between two concepts/things even though the connection between the two is not strong enough to make the cause.</p> <p><i>“Well, it’s too bad that so many Indians had to die when the white men settled America. But you can’t make an omelet without breaking a few eggs.”</i> (There are not enough essential parallels to make a good ratio or good argument. In addition, significant differences can be overlooked or disregarded).</p>
7. Questionable cause	<p>Claiming about a causal relationship between events without providing reasonable and sufficient evidence to back it up.</p> <p><i>“Ever since I bought this house, I have had nothing but bad luck. I have got to sell this house.”</i> (This argument oversimplifies causality and insists on a causal link between occurrences based on insufficient evidence).</p>
8. Slippery slope	<p>Presents an unwarranted claim that one event would lead to a chain reaction.</p> <p><i>“If you offer people unemployment insurance, they will become lazy and expect the government to support them for life.”</i> (The fallacy in these arguments is supported with exaggerations of dire consequences)</p>

Table 1 has presented an overview of inductive fallacies along with their examples to give a comprehensive understanding of the way arguments are made feeble as they do not provide solid evidence to back up the claim.

Mistakes in reasoning that make an argument weak or unreliable are called inductive fallacies (Mayfield 2014). These refer to situations where there is insufficient evidence, biased sampling, or incorrect generalisation. Hasty generalisation, false

causes, and slippery slopes are among the most frequently occurring inductive fallacies. When a conclusion is drawn based on a small or unrepresentative sample of data, it is known as a hasty generalization (Mayfield, 2014, p. 307). The example “skinny, tall like all Chinese” has an insufficient sample size to support the conclusions drawn. When we feel tired, irritated, or irritable, we tend to make quick and sweeping assumptions. The argument implies that a certain action or behaviour can result in the formation of stereotypes. Whereas the fallacy of questionable cause occurs when an assumption is made that one event caused another solely based on the fact that it happened after it. This argument oversimplifies causality by insisting on a causal link between two occurrences, such as “buying a house” and “bad luck,” without sufficient evidence to support the connection. Experiencing bad luck after purchasing a house does not necessarily imply that the house is the cause of the misfortune. It is possible that other factors or coincidences are at play. Last but not least, slippery slope refers to the argument that a small or minor action can lead to a large or extreme consequence without any logical connection or evidence. An example of this would be the statement, “If you provide unemployment insurance....people will become lazy.” This statement overstates the potential effects and ignores the steps in between.

3.3.2 Deductive Reasoning Fallacy and operationalization of the model

The model of deductive reasoning fallacy given by Mayfield (2014) in her book titled *“Thinking for yourself: Developing critical thinking skills through reading and writing”* is presented below in tabular form along with the definitions. The definition section also includes examples of each deductive fallacy. The examples mentioned are further elaborated.

Table 2

Mayfield’s (2014) Model of Deductive Reasoning Fallacies

Types of Deductive Fallacy	Definition
1. Argument	One or more premises that lead to a conclusion and serve as the reasons for it. <i>“All people who flirt are showing interest in someone. She is flirting with me. She is showing interest in me.” (The argument lacks validity. The conclusion is generated based on weak premises).</i>

2. Reasoning Reasoning uses facts and premises to get at conclusions, judgments, or inferences.
- “If I flirt back, she will encourage me further. I will flirt back. She will encourage me further.”* (The reason to claim this argument is weak since there is no clarity and assurance that the conclusion would be the way it’s stated).
3. Syllogism Syllogisms are organized in a standardized way that helps make the argument’s structure visible for inspection and analysis.
- “All flirts are friendly. No flirts are mean. Some flirts are serious. Some flirts are not serious.”* (The conclusion drawn from these two premises are invalid and don’t correspond with the actual reasoning).
4. Premises and Conclusions Reasons for believing the conclusion of an argument, based on statements stated in arguments.
- “No flirts are cross and mean. (major premise) This man is cross and mean. (minor premise) This man is not a flirt (conclusion).”* (The main idea behind the last line of thinking is that none of the flirts are angry and mean. Whereas the minor assumption says that he can’t be a flirt because he is angry and rude. Between “because” and “must,” you’ll find the conclusion and the reason for it. So, the premises are not strong).
5. Validity Deductive arguments are said to be valid when their premises are totally supported by the inference.
- “All fathers are males. Jose is a father. Jose is a male.”*
 (Validity is linked to good reasoning, and both good reasoning and the truth are linked to soundness. This conclusion does not follow from the first two parts of this case. The result might be right or wrong. But this line of thought doesn’t lead us to that result. Even if we are sure that all dads are men and that Jose is a
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6. Soundness

man, that isn't enough to prove that Jose is a dad. There's a chance that the result is wrong. So, this line of thinking is wrong).

A convincing argument relies on truth and logic to arrive at a conclusion that is impossible to refute.

“All fathers are males. Jose is a male. Jose is a father.” (The following argument is flawed because, despite having correct premises, the reasoning is flawed, leading to a misleading conclusion.

Table 2 has presented an overview of deductive fallacies along with their examples and further their interpretations. Deductive reasoning involves presenting an argument to support a particular idea. We arrive at a conclusion or make an inference by using various premises. A premise is a statement that establishes the foundation for a theory or general idea. It is typically an accepted idea, fact, or rule. Conclusions are statements that are backed up by premises. In a simple deductive logic argument, we typically start with one premise and then add another premise. Based on these two premises, it is possible to form a conclusion (Mayfield, 2014, p. 328). Deductive reasoning arguments can be examined based on two criteria: validity and soundness. The concept of validity refers to how the premises are connected to one another and to the conclusion. In addition, for an argument to be considered sound, it must be both valid and have true premises. If an argument is invalid, then it is unsound. Starting with accurate premises and using a valid argument will inevitably lead to the correct conclusion. A valid argument is one where the conclusion is logically supported and related to the premises. An argument can be valid even if the premises are not true (Mayfield, 2014, p. 334).

Hence, all of the aforementioned examples in the table provide clear depictions of informal fallacies, with the goals of discouraging students from making the errors in reasoning, equipping students with knowledge of fallacious reasoning for the purposes of generating good reasoning, and provoking teachers to reflect on certain aspects of students' argumentative writing.

3.4 Research Sample

The selected sample for the proposed research was undergraduate students of BS English third semester at NUML, Islamabad, including both morning and evening sessions. Approximately one hundred and twenty essays were collected, out of which one hundred and six were taken into consideration for exploratory and analyzing purposes.

3.5 Participants

The study included group of individuals who shared same characteristics. The total students were 106 of third semester of English bachelor program at NUML. The students were being taught Academic writing course which included argumentative essay which was taught to them before the mid tem examination. In this study, each participant was given the same chance of being chosen, so that the sample does not unfairly reflect the community as a whole.

3.6 Instrument

In the current research, the research instrument used to measure argumentative writing was an argumentative essay with 250-300 of words as the standard range. In doing so, two topics were determined for argumentative writing which administered to the respondents in this study.

3.7 Argumentative essay worksheets

An argumentative essay worksheet that had a specified minimum of 250-300 words was the research instrument that was used to test the performance of argumentative essays written by undergraduate students of BS English in the third semester.

The purpose of this essay was to evaluate the respondents' performance as argumentative writers using their responses. As a result of this, the two subjects for argumentative writing are established, and they are chosen from two different sources. Firstly, from the book *Academic Writing: A Handbook for International Students* by Stephen Bailey (4th edition), taught to the students in the third semester at NUML, and from the topic selected from the IELTS exam conducted in May/June 2022.

The two selected topics are titled:

1. *“Higher education should be free and open to all.”*
2. *“Is it better for the state to spend money on primary or university education?”*

It was up to the students to pick one of two predetermined topics and use it as the basis for an argumentative essay. Familiarity with and relevance to themes were taken into account throughout the selection process.

The researcher used content validity and expert assessments to assess the strength of argumentative essay topics before doing extensive data collection. The researcher in this study discussed potential subjects for an argumentative essay with the supervisor. In fact, all of the detected linguistic fallacies and evidence were double-checked by a second assessor as well (one of the researcher’s colleagues) to ensure the accuracy of the rating and identification process. As a consequence, the current research instrument was enhanced based on feedback, suggestions, and recommendations from subject-matter experts.

3.8 Introduction to Corpus Tool

The selected tool for the study was ‘AntConc.’ This free software was developed by Laurence Anthony, who is the director of the Center for English Language Education at Waseda University. Kübler and Zinsmeister (2015) say that the wordlist tool of AntConc software creates words in a corpus in their frequency order. It also offers the capacity to count the words according to their “stem” form. Lonfils and VanParys (2001), while reviewing this software, conveyed that the absence of pull-down menus and additional windows is a vital feature of good software. Hunston (2002) says that corpora have been used in a wide range of areas, which include areas related to translation studies, stylistics, grammar, and a dictionary. Hence, software is effective in finding and evaluating values and frequencies.

The major reason for using AntConc software was to highlight the various types of words and phrases that signal fallacies. The main focus was on identifying the corpus, linguistic patterns (specific vocabulary, word associations, sentence structure, and repetitive phrases) and frequencies of specific fallacy to understand how arguments were structured and how the ideas were conveyed. For instance, words indicating absolutes like ‘always’ or ‘never’ signal the use of an ‘absolute’ fallacy. Generalization, such as ‘everyone thinks’ or ‘nobody believes,’ can imply a ‘hasty generalization’

fallacy. Additionally, phrases like ‘studies shows,’ ‘according to recent surveys,’ etc. without specific references or citations, hint as if it is not credible. These are a few examples; fallacies can manifest through different types of language, so it is crucial to consider context and reasoning within the text. Hence using AntConc software, it was helpful in identifying potential questionable statistics fallacies in the argumentative writings. Furthermore, AntConc software provides a strong reason for examining linguistic errors in argumentative works by quickly finding and quantifying their repeated occurrences. Its specialised tools search out repeating linguistic patterns, which helps find common linguistic fallacy the text. The quantitative analysis lets researchers give a full picture of how linguistic errors are spread, which improves the accuracy and validity of the findings of thesis and makes the results more clear.

3.9 Data Collection and Data Analyzing tools

The qualitative data is analyzed through thematic analysis using Mayfield’s (2014) model of inductive and deductive reasoning fallacies, whereas the quantitative data is analyzed through descriptive analysis, where mean, mode, and frequencies will be determined.

The data were a collection of argumentative essays written by students. Students were asked to write an argumentative essay based on topics assigned to them by their subject teacher. After the completion of the task, the researcher collected the worksheets from the subject teacher. The process of writing was done in a planned way. Students were given instructions and time to think of ideas and make their outlines.

Prior to the collection of data, students were made aware of the study’s goals and confidentiality guarantees. Then, students of BS English (3rd semester; morning and evening sessions) were first instructed to include their names and class sections on a paper. They were then asked to read the test instructions. They had the option to select one of the two argumentative topics. They were asked to compose an argumentative essay with a minimum word count of 250-300. After students completed the task of writing an argumentative essay, their work was evaluated using the Mayfield fallacy model (2014).

Once all the fallacies were identified, the most frequently used fallacies were listed separately and the frequency of each fallacy was measured using AntConc (4.1.1 version, 2022). To begin analyzing text, the text was first opened in AntConc software.

The text was in plain text files rather than pdfs, word documents, web pages, or other file types. All the extra information related to names, dates, etc. was erased. The concordance table of Absolute words such as “everyone”, “always”, and “either”, “or”, “must”, “some people”, “all people”, “few”, “perhaps”, “sometimes”, “like all”, “seems”, “appears”, “suggests”, “if”, etc. were generated. The fallacies were generated and added in the appendix to analyze their frequencies and get quantitative data.

The researcher then moved on to explore the types of linguistic fallacy errors made by students by analyzing their writings using the Mayfield (2014) model of inductive and deductive reasoning fallacies elaborated in her book titled *“Thinking for yourself: Developing critical thinking skills through reading and writing”*.

Next stage of the research was to study the effect of the use of fallacies on the written essays of the students by analyzing deductive reasoning fallacies. Moreover, to ensure that the data collected for the purpose of conducting research must be reliable and accurate, my supervisor; Dr. Khurram Shahzad, aids as an inter-coder. This helped minimize the possibility of any errors that, otherwise, might have occurred while identifying the fallacies by the researcher. In last, the researcher has provided a few strategies for avoiding fallacies in the argumentative writings.

3.10 Data Analysis Procedure

After the argumentative essays were collected, the results were analyzed to determine the incorporation of linguistic fallacies and their description. The proposed study used AntConc software (4.1.1 version) as the primary research tool. Through AntConc software, each linguistic fallacy used in essays was generated by measuring the mean, mode, and frequency. Once frequency tables were formed, each fallacy was then analyzed under the theoretical framework of Mayfield (2014), based on the models of inductive and deductive reasoning fallacies.

In order to identify fallacies in students’ writing, the study opted for specific strategies and approaches. Firstly, the researcher carefully examined the text thoroughly and critically, analyzed the arguments presented, and looked for inconsistencies, flawed logic, and unsupported claims. The reasons did not seem to justify the arguments. Then, because the researcher had prior knowledge of fallacies, it was brought into use and recognised the patterns or instances in the writing by comparing the arguments presented in the writing against established principles of logic and reasoning. This

comparative assessment helped in highlighting areas where the writing deviated from logical standards. Fallacies were identified through recurring patterns within the arguments that raised doubts, indicating potential fallacies. The research's assessment was objective in nature; it focused on the structure and coherence of the arguments presented rather than personal opinions or biases. The aim of the study was not just to identify errors but also to help students improve their critical thinking skills. It further aimed to offer guidance to enhance their writing and reasoning abilities. To ensure the validity and credibility of the qualitative data, expert opinions were considered on the qualitative data and research findings to see how a researcher interprets the data. The researcher took help from her supervisor, Dr. Khurram Shehzad, to observe the analysis of the data, who further requested that one of his colleagues verify it as well. The letter of verification is attached in the appendix B to guarantee that all levels of analysis were conducted objectively.

3.11 Thematic Analysis

Thematic analysis is a form of qualitative data analysis that requires reading through a data collection and determining themes by recognizing patterns in meaning across the data. The data was collected in the form of argumentative essay worksheets. The researcher manually read the argumentative essays and noted the use of inductive and deductive fallacies. Linguistic patterns that emerged across the data were also detected. After the fallacies were identified, excerpts that showed the use of inductive fallacies were written separately in tabular form, mentioning the number of participants. Moreover, the frequency of words that represent inductive fallacies was calculated using the software AntConc (4.1.1 version) by Anthony (2021) for concordance analysis. Lastly, excerpts were analyzed through Mayfield's model (2014) of deductive reasoning fallacies to interpret the use of 'arguments', 'reasoning', 'syllogism', 'premises and conclusion', 'validity' and 'soundness' in argumentative essays writing by students.

CHAPTER 4

DATA ANALYSIS

This chapter provides an insightful analysis of the one hundred and six argumentative essays written by undergraduate students of English in both morning and evening sessions, for a total of 32,986 words. The analysis is done by applying the theoretical models of Mayfield (2014) of inductive fallacies and deductive fallacies. Furthermore, the researcher has used AntConc software as an analytical tool to measure the frequency of the fallacious words (every, almost, either-or, must, if, some, all, never, few, perhaps, sometimes, always, most, like all, everyone, no, appears, seems, etc.), and then the researcher proceeded to analyze the effect of fallacies in the argumentative essays for further analysis along with providing strategies for avoiding fallacies in argumentative essays. After calculating the frequency of the most frequently occurring fallacies, the researcher presented them in tabular form. With the help of ‘KWIC’ and ‘Explore Co-text’ features of the AntConc software, instances of fallacies were identified and analyzed under the inductive and deductive fallacy models given by Mayfield (2014). Moreover, every fallacy was separately analyzed and presented in the following chapter.

4.1 Inductive Fallacies used in argumentative essays

Inductive reasoning involves drawing a general conclusion based on a collection of specific observations. Therefore, by examining a few specific premises, we can identify a pattern that leads to a general idea that is likely to be true. However, all forms of inductive reasoning are rooted in the search for a conclusion that is most probable given the premises (Wilson, 2016). This type of reasoning is commonly employed when making predictions, forming generalisations, and analysing cause and effect relationships. Conversely, if the premises do not align with the conclusion, it results in inductive fallacy.

The below table 3 shows commonly used inductive fallacies in the argumentative essays of the third-semester students of the English Department at NUML. The collective number of occurrences of all used fallacies marks 106 in total. All the selected examples of every inductive fallacy are presented in tabular form below.

On the other hand, Table 4 shows the frequently used inductive fallacies in the argumentative essays. It has been further elaborated and explained along with examples on page 54.

Table 3

Inductive Fallacies used in the Argumentative Essays

Inductive Fallacies	No. of occurrences
Hasty generalization	19
Questionable statistics	30
Inconsistencies & contradictions	11
Loaded question	1
False dilemma	9
Weak analogy	13
Questionable cause	8
Slippery slope	15

Table 4

Frequency of Each Inductive Fallacy Used in the Argumentative Essays

Inductive Fallacies	No. of frequency
Questionable statistics	44
Hasty generalization	20
Slippery slope	13
Inconsistencies & contradictions	15
False dilemma	12
Weak analogy	12
Questionable cause	10
Loaded question	1

Note. Table 3 demonstrates the number of each inductive fallacy used by the students in the sample and table 4 shows the frequency of each inductive fallacy used in the argumentative essays

As shown in Table 3, eight inductive fallacies have been used in the total number of argumentative essays written by students of BS English in the third semester. The questionable statistic fallacy has occurred 30 times, while the loaded question fallacy has occurred once. This shows that students have provided the arguments on their own without providing valid evidence that supports their claim. Secondly, hasty generalisation stood second in terms of occurrence. This shows that most of the claims are derived merely from insufficient samples. The fallacy of hasty generalisation was committed by eighteen students, making it the second highest-used fallacy among all. The following Table 5 shows the stances of the hasty generalisation fallacy used in argumentative writing.

Table 5*Examples of the Hasty Generalisation Fallacy Used in Argumentative Essays*

Participants	Hasty generalization fallacy
Student 1	“On the contrary, more funding for universities brings financial issues because highly professionals may go to other countries and work for foreign nations. Therefore the primary education or the building blocks of higher education is to be funded more for financial sustainability”
Student 4	“Money is also needed for the development of new facilities and departments. Without the development of those departments, our nation would be unable to flourish in those fields. Hence all nations should spend money on these departments”
Student 7	“Students join university to do a major in the specific field. So more qualified teachers are required in the university level as compared to primary level of education. University is time for students to apply the learned knowledge too. In this way, they will be able to enter into practical life. Therefore, it can be concluded that universities demand more money in comparison with schools”
Student 11	“As far as I have observed, only those students succeed in their lives who was known from the root of knowledge”
Student 14	“Educated people can cope with every situation effectively”
Student 23	“Lastly, people with a university degree have more experience and good credentials to earn a living as a compare (compared) to person who doesn’t have been to university”

Note: The complete table of hasty generalization fallacies is added in the appendix A.

Hasty generalisation is a type of reasoning error where a quick judgment is made about a class based on insufficient or unrepresentative evidence. This fallacy occurs when there is an exaggerated response to a single sample or event. The above-mentioned examples illustrate how using one sample to judge all other members can lead to inaccuracies.

To provide further explanation, for example, *“As far as I have observed, only those students succeed in their lives who were known from the root of knowledge”* (student 11), here an opinion is formed based on one’s assumption and observations. Opinions and personal judgements do not mean the argument is correct. Every person tends to have different perceptions and viewpoints (Likierman, 2020). But in order to make a solid claim, facts and statistics are the tools that strengthen and give credibility to one’s claim, which is clearly lacking in the example. Similarly, another example, *“Lastly, people with a university degree have more experience and good credentials to earn a living as a compare (compared) to person who doesn’t have been to university”* (student 23) commits the hasty generalization fallacy as a judgment is made about a group of people based on a sample that is too small. There could be other variables and possibilities for earning a good livelihood even if a person does not have a degree. It is a common practice to exaggerate without first qualifying the arguments by inflating one unreasonable sample over all other samples. Even if a person manages to judge something correctly, the process in general is faulty.

Qualifying our arguments using terms and phrases that restrict generalisation can help us avoid making exaggerated claims. Words like “all”, “every”, “a few”, “must,” “many,” “perhaps,” “sometimes,” “everyone,” “often,” etc., can be substituted out. A wide variety of verbs, including “appears,” “looks,” might be deleted to narrow the scope of the claim.

Table 6

Examples of the Questionable Statistics Used in Argumentative Essays

Participants	Questionable statistics fallacy
Student 1	“Furthermore, it is better government to primary education because it has a higher ratio of enrollment in institution”
Student 3	“According to the scholars, a state should spend money on university education”
Student 4	“One may argue that primary level education is also important, as it builds the foundation of child. Although there is no denying the significance of quality primary education, it is worth noting that it doesn’t actually require much money”
Student 5	“According to studies and reports, people who are educated and have been graduated from prestigious institutions

Student 6	are more likely to have a better living standard along with social validation” “Countries such as Australia and United States have the top ranking universities as per the record of 2017 because they spend money on their higher education”
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Note: The complete table of Questionable statistics fallacies is added in the appendix A.

Table 6 shows the examples of questionable statistic fallacy which was committed by twenty-six students in total, making it the most commonly used fallacy among all inductive fallacies.

Questionable statistics fallacy means presenting evidence without providing valid or credible data (Mayfield, 2014). Arguments given by students lack valid evidence that would have shown the authenticity of their claims. Again, the examples show that students have made claims solely on the basis of their own understanding and judgments. Whereas, in order to make an argument authentic, valid numerical evidence is given to strengthen one’s stance; otherwise, an argument is considered to be feeble in nature.

One of the most effective forms of argumentation is statistical argumentations. The accuracy of statistical data makes it a credible source of information. A statistic becomes questionable when the accuracy of the data provided is uncertain. Advertisements often commit the fallacy of providing unverified numbers that are difficult to measure when selling products (Ripley, 2005). In other words, advertising companies utilise a sample size that is not representative of the intended community, which could bias statistics. Hence, a questionable statistic refers to providing inaccurate data that cannot be precisely measured.

All the examples stated in the table 6 show the stance of providing statistical data (not in every example) without providing accurate data. Mostly, the data presented seems uncertain; for instance, “*It is a well-known fact that University take much more investment than setting up primary sector*” (student 51) lacks verified numbers. The word “well-known” gives a notion of unclarity. This cannot be considered a fact until and unless the authentic numeral data is provided. Hence, the fallacy of questionable statistics has been frequently used by students in their argumentative essays, where they fail to provide valid data to support their arguments.

Table 7*Examples of Inconsistency and Contradiction Fallacy Used in Argumentative Essays*

Participants	Inconsistencies and contradictions fallacy
Student 2	“Although a state should spend more money on higher education, it is not possible keeping the current economic state of Pakistan. Pakistan’s economy is not in stable condition and spending more money on higher education can lead to its decline even more”
Student 14	“Spending money on higher education will promote a sense of responsibility and ethical attitude among people.....But every coin has two sides, we cannot adopt a biased attitude towards higher education”
Student 19	“Primary education can be easily.....Primary subject don't require much sophistication and are much easy. However, we cant neglect it”
Student 29	“University education is important to obtain in a specific field. Though it is not mandatory to get this level of education... because the minimum level of education to understand basic principles of life are already learned”
Student 48	“Free education will make student tranquil. Fees and tuition burden are actual tensions that are pursuing student while in their academic career..... In my perception, free education will enable them to focus more on their academic career. To create a mental health generation....allocate special amount of budget. However, free education is not always fruitful..... Not free education is basic right. Facilities of health, modern roads and technology and many other are also the goals of government”
Student 56	“It must be provided by the state free of cost at every level but there are some economic issues for every country that it cannot provide at every level”

Note: The complete table of inconsistencies and contradiction fallacies is added in the appendix A.

Table 7 shows the examples of inconsistency and contradiction fallacies used in the argumentative essays. The presence of inconsistency and contradiction in an argument makes it fundamentally untruthful. The arguments are either false or they contain contradictory premises. The students' argumentative essays contained reasoning that did not effectively support their stance. The reasoning they provided is based on premises that are not accurate or reliable. On one hand, they did state a valid argument to support their claim, but on the other hand, the premises given by them contradict their claim in general. This fallacy was committed by eleven students in total.

A contradiction fallacy is a statement that appears to contradict itself, making it impossible to draw a coherent conclusion from it. The sentence contains conflicting conclusions, so it cannot be true to affirm one without refuting the other. These contradictory statements can be found in different situations. Frequently, people use them without realising they are being inconsistent due to their lack of knowledge. At times, it may simply be a result of being lazy in one's thinking, or people use them in an emotional context when they have lost their logical reasoning and are making an effort to prove something (Schleicher, 1999). One strategy could be intentionally using inconsistency to throw off the other person and divert their attention away from the actual conversation. At times, individuals in positions of power intentionally contradict themselves, knowing that they won't face opposition and perhaps to display their authority (Kolzow, 2014). Hence, the above-mentioned arguments used in argumentative essays show inconsistencies and contradictions that make the argument fallacious in nature.

Table 8

Examples of Loaded Questions Fallacy Used in Argumentative Essays

Participants	Loaded question fallacy
Student 75	“But which of these stages is more important, and should sectors really spend money on them?”

The fallacy of loaded questions is the least committed, as only one student has used it in an argumentative essay. Generally, as stated by Fink (2003), people do not incorporate questions in their writings as their main task is to satisfy the curiosity of the reader rather than raise a question, but sometimes loaded questions are stated to make

a reader take a side that is fruitful for the writer in every way, as loaded questions are tricky in nature.

Table 9

Examples of False Dilemma fallacy used in Argumentative Essays

The following table 9 shows the examples of the false dilemma fallacy used in the argumentative essays.

Participants	False Dilemma fallacy
Student 3	“A state shouldn’t spend money on primary education because at that very young age, there is not as much requirement of facilities and skills as higher education”
Student 6	“Primary level education can be run on private level but there is a need to spend money on university education if we want our universities in the list of top 100 universities in the world”
Student 8 (a)	“The student can only be successful in his life if his base is strong. There is no use of having university level studies if the individual’s base is weak”
Student 8 (b)	“Only through this we can give direction and shed light on all will result in development of country. If one get enough education in primary they are would have more into the progress of one’s country”
Student 15	“In conclusion either the government of any state or country should spend more on the university education which will provide the state well-trained professionals or it wont be beneficial for the state”
Student 16	“In university education, there are few subjects that require proper laboratories, equipped with modern technology. Students will only be able to have a good learning environment if they have facilities”

Note: The complete table of false dilemma fallacies is added in the appendix A.

The fallacy of the false dilemma eliminates the possibility of multiple options. It only makes a reader choose one option out of two; hence, this fallacy is also referred to as the ‘either – or’ fallacy (Mayfield, 2014). Students, in their writings, gave

arguments that only led to two options, neglecting all the other existing possibilities. There can be multiple solutions and remedies to solve a problem, but when the choice is limited to two options, then the fallacy of the false dilemma takes place. A common tactic that is used to convince an individual or a group of people to pick the option that one wants them to pick is to present them with a “false dilemma,” also known as a “false alternative”. According to Brisson et al. (2018), in the false dilemma, the option of the binary opposite will be presented, and it will be an undesirable choice. The purpose of this is to persuade the individual to select the choice that is favoured over the other available choices. It is an efficient strategy because it creates the idea that one alternative is preferable to the others, even though, in reality, the scenario may be fairly complicated and present a broad variety of options. This method is effective because it gives the appearance that one choice is superior to the others. This may provide the wrong impression. As a result, a total of eight students have committed this fallacy.

Table 10

Examples of Weak Analogy Fallacy Used in Argumentative Essays

The following table 10 shows the examples of weak analogy fallacies in argumentative essays.

Participants	Weak analogy fallacy
Student 3	“The children of primary education require more love and attention rather than fundings, whereas, the students of university education need a lot of fundings because they are future of the country. So, a state should invest in university education”
Student 5	“Spending finance on the primary is an investment for state’s future. The children will ultimately govern the state so spending on the children wouldn’t be a bad choice”
Student 9	“If we wanted to check that, country is developed or not, we pay attention and check the technologies used in that country. Technology provides evidence that is country is developed or not, so we should pay more money on university education”
Student 11	“Another reason why government should spend more money on university education is that most students that get

Student 15	admission in universities are those who are able to grasp knowledge” “Primary education is not the last stage but the initial stage and one can improve with passage of time. However, university education is the last and should be given proper learning”
Student 16	“Primary education is the level of education and it is not very much demanding. The subjects taught at primary level do not require modern equipment. Young students have to go a long way before entering practical life so they don’t need as much skill development as university students”

Note: The complete table of weak analogy fallacies is added in the appendix A.

Students, in their argumentative essays, tend to compare and contrast things to make a claim. The fallacy of weak analogy is committed when things that are totally different in nature are compared to make an argument (Mayfield, 2014). This fallacy occurs when an analogy is used to draw a conclusion, but the analogy is not strong enough to support the conclusion. The items being compared share some similarities, but there is an error in attributing an additional similarity to them. The difference in the area being compared ultimately leads to a false conclusion about the characteristics of the two items. For instance, in an argument given by (student 21), “*Educated people are more polite, better decision maker and well-mannered in our society as compare (compared) to uneducated,*” the comparison is shallow in nature. The conclusions are drawn without stating them or providing relevant examples. Education is not the only medium that promises ‘politeness,’ ‘decision making,’ and ‘well-mannerism.’ Hence, the arguments given by students are not strong or valid enough to draw conclusions. The comparisons are made without providing sufficient reasons and information. As a result, this fallacy was committed by thirteen students in total.

Table 11

Examples of Questionable Cause fallacy used in Argumentative Essays

The following table 11 shows the examples of questionable cause fallacy used in argumentative essays.

Participants	Questionable cause fallacy
Student 1	“The state funding for primary education does not bring financial

Student 30	problem for the country because there students are immature and unaware about world”
Student 33	“The fact that there is no fund from the stable to facilitate students with their education fee it one of many reasons why students are not doing their best in their currently enrolled degrees”
Student 37	“If the state spend money on university student he will focuses on his study. Secondly, nation will be happy, they will remove their anxiety of studying their children in university because most of the parent thinks that our children will not get education due to which they get suffer from different disease”
Student 43	“Students quit studies after getting secondary education and reason is that they cant afford high fees. Many talented students fail to continue their education due to this issue hence country loses bright students”
Student 61	“In state like Pakistan, it may not be better to spend money on university education. The reason is that all the universities are teaching old syllabus and they are not focusing on skills” “In our country government is not focusing on primary education so the children have no basic knowledge about anything”

Note: The complete table of questionable cause fallacy is added in the appendix A.

The fallacy of questionable cause is itself self-explanatory; the connection between cause and effect is made on loose strings (Dowden, 2018). Students, in their argumentative essays stated causes based on claims that lacked clarity and credibility. Most of the arguments are personal and do not support the statements. The fallacy of questionable cause is a linguistic error that happens when there is a ‘link between premises and conclusion that depends on some imagined causal connection that probably does not exist’ (Mayfield, 2014). In other words, questionable cause occurs when one event is believed to be the cause of another event even though there is no actual causal relationship between them. This flaw presents itself most frequently when there are a number of unrelated occurrences that occur at the same time. The practise of superstition is filled with incorrect assumptions. Hence, the above-mentioned table show the occurrence of questionable cause fallacies as students linked the cause-and-

effect relation merely on the basis of a feeble comparison. This fallacy was committed by eight students in total.

Table 12

Examples of Slippery Slope Fallacy Used in Argumentative Essays

Participants	Slippery slope fallacy
Student 3	“States should spend more money on providing the facilities to students otherwise they cant build a strong background...wont get better jobs in future that helps in the country's progress...States spend money on their higher education...they can be very helpful in helping the country otherwise the country will be doomed”
Student 14	“...if the money is not spent...students will lack basic concepts and will not be able to work properly in future life”
Student 5	“All university teachers...it is essential for them to be well paid..they would leave the country and seek employment in other countries where they would earn better pay, causing brain drain”
Student 11	“...state should spend money...but large chunks of focus should be on primary education otherwise cant produce successful society and help to improving the backbone of country...education”
Student 12	“Spending more money on university education is way more beneficial and advantageous else students won't be able to graduate and contribute to improve the economy of our country”

Note: The complete table of slippery slope fallacy is added in the appendix A.

Slippery slope refers to situations that may or may not occur due to a certain action. Students, in their writings, claimed countless series of events that would take place if the government did not take certain actions. In the majority of cases, it sounds fictional and feeble, as there is a high chance it won't even occur in real life. Hence, this fallacy weakens the argument in general. Slippery slopes are usually linked with negative outcomes, which is why slippery slope arguments are often employed as a way to instill fear (LaFollette, 2005). Slippery slope arguments frequently use a rhetorical device to suggest that a series of negative consequences will follow from a particular event. This is a common tactic used to support the argument. Arguments of this nature

often follow particular patterns, such as suggesting that if a particular action is permitted now, it will eventually result in similar negative consequences. Hence, as seen in the examples mentioned above, the fallacy of the slippery slope is committed by thirteen students in total, making it the third most commonly used fallacy.

To summarize, the various linguistic fallacies used in argumentative essays by BS English students have been compiled in tabular form. The table includes the essay number and context for each participant's stance. Hence, the first question of the research has been answered.

4.2 Measuring frequency of inductive fallacies in argumentative essays

Table 4 has been added next to Table 3 on page 43 to highlight the comparison between inductive fallacies and their frequency. In this section, the frequency of frequently used inductive fallacy has been mentioned along with a few contextual evidences. Mayfield's (2014) model of inductive fallacies consisted of eight fallacies in total. The incorporation of each fallacy from the sample has been identified using 'AntConc' software, and the most frequent ones are listed below in tabular form.

Table 13

Frequency Table of Questionable Statistics Fallacy

Table 13 shows the fallacy of questionable statistics, also called the 'statistical fallacy,' frequently used by the students in their argumentative writings.

Questionable Statistics	Frequency
Many	6
other side	6
according to	5
Research	5
Because	5
Fact	4
About	3
Most	3
Such as	2
Argue	2
Reported	2
Compared	1
Total: 44	

Questionable statistics fallacy examples used in argumentative essays:

1. “**Many** people after doing their matriculation gets indulged in drugs and other illegal activities as they cannot find the best place where they can use their full potential” (student 22a)
2. “On other side of the story there is this matter of **fact** that countries invest too much on higher education and ignores primary” (student 22b)
3. “According to **recent survey**, in our country, nearly half of the population is illiterate” (student 25)
4. “**Research** has found that primary education is more progressive as it supports lower income households” (student 76)

Note: Contextual evidence is provided to show questionable statistic fallacious words.

Words such as ‘many’, ‘other side’, ‘according to’, ‘research’, ‘because’, ‘fact’, ‘about’, ‘most’, ‘such as’, ‘argue’, ‘reported’, and ‘compared’ are identified from the sample, which shows the incorporation of questionable statistics fallacy. Every fallacious word is mentioned along with its number of occurrences in the sample. The total number of all fallacious words is forty-four. The use of questionable statistics fallacies makes the arguments biased in nature, as the claims made by the participants lack a method of presenting data. Most of the arguments are based on one’s own assumptions and judgments. Proper evidence in the form of empirical data is missing. This fallacy entails faking data or using stats from dubious sources to give the impression of validity. Hence, making an argument without proper and authentic empirical data leads to questionable statistics.

Table 14

Frequency Table of Hasty Generalization Fallacy

Hasty Generalization	Frequency
All	6
Only	4
None/no	3
Everyone	2
Just	2
Some	2
Must	1
Total: 20	

Hasty generalization fallacy examples used in argumentative essays:

1. “**All** the university graduates are more competent as compare to students who have secondary degree..” (student 74)
2. **Only** students who wants to study and achieve their goals through higher studies can get admission in universities”. (student 79)

3. “As far as I have observed, **only** those students succeed in their lives who was known from the root of knowledge”. (student 11)

Note: Contextual evidence is provided to show hasty generalization fallacious words.

Hasty generalization is a type of inductive fallacy that involves generalizing results from a sample to the entire population. The argument is flawed as the sample size is either too small or not a fair representation of the entire group (Walton, 1999). Words such as ‘all’, ‘only’, ‘none/no’, ‘everyone’, ‘just’, ‘some’ and ‘must’ are identified from the argumentative essays that fall under the inductive fallacy of hasty generalization. The total number of frequencies is twenty.

Table 15

Frequency Table of Slippery Slope Fallacy

Slippery Slope	Frequency
Otherwise	4
So	4
Then	3
Else	2
Total: 13	

Slippery slope fallacy examples used in argumentative essays:

1. “While others dare to disagree because if the money is not spent on basic education **then** the students will lack basic concepts and will not be able to work properly in future life.” (student 14)
2. “That’s the right of state to use money on the primary level, if they don’t do so the kids will be distracted from their paths they will use their majority or important time in wandering by this the ratio of child labor will increase and the young kids will not be able to enjoy their learning part of lives.” (student 21b)

Note: Contextual evidence is provided to show slippery slope fallacious words.

The argument known as the slippery slope can be applied to a choice to either take action or accept a proposition. Because it is the first step in a chain of occurrences that inevitably comes to a highly undesirable end after going through a period of ambiguity during which there is no possibility of taking control, it presents a challenge to any plan of action that may be considered (Walton, 1992). In simple words, a slippery slope refers to the possibility of a terrible outcome from the action taken. Words inducing ‘otherwise’, ‘so’, ‘then’, and ‘else’ are identified from the contextual

examples that show the possibility of unfavorable outcomes if certain actions may or may not take place by the government. Slippery slopes are frequently incorporated in arguments where students predict the future if solutions aren't provided to existing problems. Hence, as per the argument made by the student, the result shows that slippery slope is comprised of fifteen fallacious words in total.

Table 16

Frequency Table of Inconsistencies and Contradictions Fallacy

Inconsistencies and Contradictions	Frequency
But	6
However	6
Therefore	2
Though	1
Total: 15	

Inconsistencies and contradiction fallacy examples:

1. "Although a state should spend more money on higher education, it is not possible keeping the current economic state of Pakistan. Pakistan's economy is not in stable condition and spending more money on higher education can lead to its decline even more" (student 2)
2. Primary subject don't require much sophistication and are much easy. **However**, we cant neglect it" (student 19)
3. "Free education will enable them to focus more on their academic career. To create a mental health generation **therefore** it is good idea to allocate special amount of budget. **However**, free education is not always fruitful, free education means pay greater amount of budget to education institution. Not free education is basic right. (student 48)

Note: Contextual evidence is provided to show inconsistency and contradiction fallacious words.

The box shows a few examples of inconsistent and contradictory fallacy. The inconsistent and contradictory fallacy refers to the use of contradictory statements in situations where it is impossible to make two opposed claims at the same time (Mayfield, 2015). The purpose of bringing attention to inconsistencies and contradictions is to make the perspectives of others more open and understandable. Students have made statements that are inconsistent by stating things that are in direct opposition to one another. Hence, words that are contradictory in nature, such as 'but', 'however', 'therefore', and 'though' are identified from the argumentative essays and

presented in tabular form. The results showed that inconsistency and contradiction fallacious words are used fifteen times in total.

Table 17

Frequency Table of False Dilemma Fallacy

False Dilemma	Frequency
If	7
Or	3
Either	2
Total: 12	

False dilemma fallacy examples:

1. "... there is no use of having university level studies **if** the individual's base is weak" (student)
2. "So to conclude **either** the government should spend money on primary education **or** let its youth lead to the road of destruction where they won't be able to excel in their life" (student 91)

Note: Contextual evidence is provided to show false dilemma fallacious words.

The fallacious words that indicate the false dilemma fallacy include 'if', 'or' and 'either'. The false dilemma fallacy restricts the possibility of choosing options that can be considered other than the given two options. The use of this fallacy mainly misrepresents an issue by providing only two options rather than considering all other possibilities. Hence, this fallacy skips all the other options that could be taken into consideration for dealing with the situation. The frequency of each identified word is twelve in total.

Table 18

Frequency Table of Weak Analogy Fallacy

Weak Analogy	Frequency
So	6
As	3
Hence	2
Compared	1
Total: 12	

Weak analogy fallacy examples:

1. Children will ultimately govern state **so** spending on children wouldn't be a bad choice" (student 6)
2. "Educated people are more polite, better decision maker and well-mannered in our society **as** compare (compared) to uneducated" (student 21)
3. "Contrary, primary education is very low and is affordable to most of people. **Hence** there's no need to spend money on primary level" (student 37)

Note: Contextual evidence is provided to show weak analogy fallacious words.

Words such as 'so', 'as', 'hence', and 'compared' are identified from the sample that indicate the incorporation of a weak analogy fallacy. The use of these misleading terms creates the idea that an argument is being made by drawing a connection between two different situations. The truthfulness of the argument, however, is likely to be compromised as a result of this relationship. Comparisons are drawn between two things that do not share a strong connection to make a cause (Mayfield, 2014). The total frequency of all the selected words is twelve.

Table 19*Frequency Table of Questionable Cause Fallacy*

Questionable cause	Frequency
So	4
Reason	2
Due to	2
Because	2
Total: 10	

Questionable cause fallacy examples:

1. "...middle-class people who cannot afford providing education to their children **so** they have stopped this by increasing population so if they start getting free education they can live happily" (student 62)
2. "In state like Pakistan, it may not be better to spend money on university education. The **reason** is that all the universities are teaching old syllabus and they are not focusing on skills" (student 43)

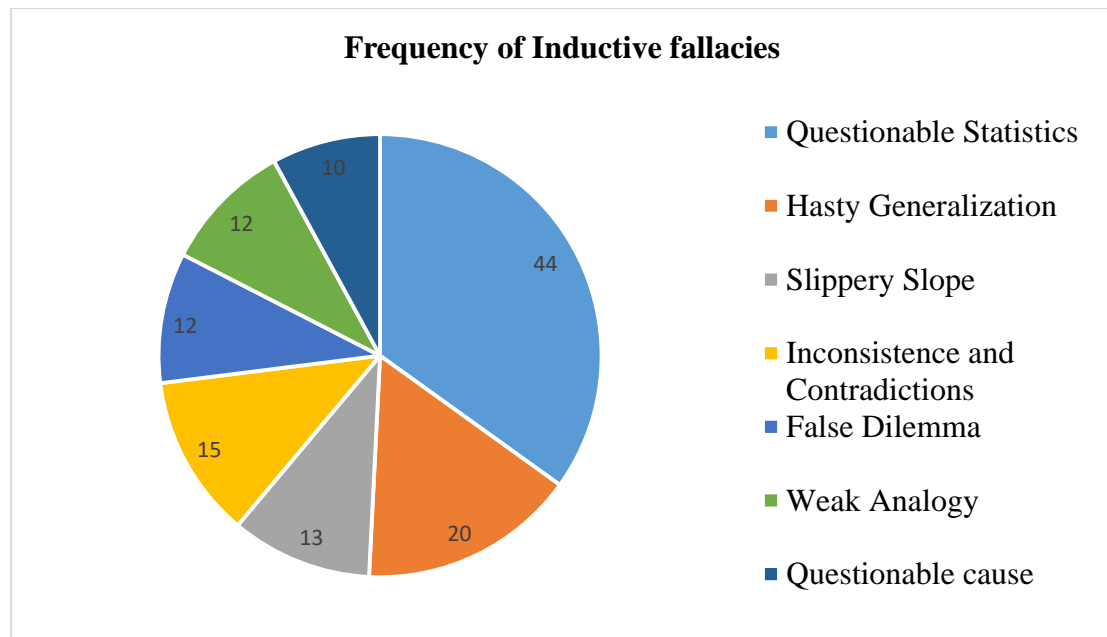
Note: Contextual evidence is provided to show questionable cause fallacious words.

The questionable cause fallacy occurs when the connection between premises and conclusions varies based on some assumed causal association that is probably not real (Arp, Barbone, & Bruce, 2018). Words such as 'so', 'reason', 'due to' and 'because' are identified as fallacious stances indicating questionable cause fallacies. The total frequency of these words is ten.

All the above-mentioned tables show the occurrences of selected fallacious words used by the undergraduate students in their argument essays. The words are identified using *AntConc* software. Moreover, in order to show the collective number of frequencies of every inductive fallacy, a pie chart is also presented to make things clearer and more apparent.

Figure 1

Frequency Pie Chart Representing Inductive Fallacies



This pie chart shows the collective number of every fallacious word used in argumentative essays by students. Each color represents a separate fallacy: questionable statistics (44), hasty generalization (20), slippery slope (13), inconsistencies and contradictions (15), false dilemma (12), weak analogy (12), and questionable cause (10). On the basis of analyses, questionable statistics is the most frequently used fallacy by the students, as they made claims without providing valid statistical data, whereas questionable cause marks the lowest-used fallacy. The total number of all fallacious words is one hundred and twenty – six (126) in total. To summarize, each frequently used linguistic fallacy has been determined and mentioned in tabular form. Secondly, a few stances of fallacious sentences are mentioned in a box to show that the ‘fallacious’ words are not highlighted without being analyzed on a contextual level. The words that do not link to the fallacies are not added to the analysis. Hence, the second research question of determining frequently used fallacies has been answered.

4.3 Effect of fallacies on students' writing

The use of fallacious statements weakens the arguments, which affects the overall writing style of students. In this part, selected fallacious excerpts are analyzed and interpreted using the deductive reasoning fallacy model by Mayfield (2014) to see the effect on students' writing patterns.

In order to write a good argumentative essay, a writer has to ensure the proper incorporation of arguments, reasoning, syllogism, premises, conclusion, validity, and, soundness in his claims. Every key element plays a vital role in shaping up a good argumentative essay so that the reader can agree with the point of view given by the writer. In deductive reasoning, a sound inference is one that logically follows from the premises it is based on, meaning that it is incoherent to both accept the premises and reject the inference. Deductive reasoning demonstrates that a conclusion must be true. In other words, deductive reasoning is applied; with a strong argument with unquestionably correct premises, one can be sure that the conclusion is accurate. Whereas a faulty conclusion that appears to be correct is called a fallacious inference. A fallacy occurs when an individual is fooled into believing a conclusion because it appears to be true (Waston, 1964). According to Mayfield (2014, p. 331), the main goal of deductive reasoning is to enable readers to make sound judgments based on the knowledge they already possess. Therefore, each fallacy is separately interpreted and analyzed on the basis of the deductive reasoning fallacy models given by Mayfield (2014).

4.3.1 Excerpts of Hasty generalization fallacy

The use of vague words in argumentative essays conveys an unclear and generalized message instead of specific and clear ideas (Mayfield, 2014). Students, while presenting an argument, generalized their claims on the basis of insufficient samples. For instance, “...*more funding for universities brings financial issues because highly professionals may go to other countries and work for foreign nations. Therefore primary education or the building blocks of higher education is to be funded more for financial sustainability*” (student 1). The argument assumes that increased funding for universities will inevitably lead to professionals leaving for other countries. It generalizes the potential outcome based on a single factor (funding) without considering various other factors that influence professionals' decisions to work

abroad, such as job opportunities, personal preferences, or economic conditions. Next, *“money is also needed for the development of new facilities and departments. Without the development of those departments, our nation would be unable to flourish in those fields. Hence all nations should spend money on these departments”* (student 4) assumes that the development of new facilities and department is the sole determinant of a nation’s ability to flourish in various fields. It oversimplifies the complex nature of national development by reducing it to the establishment of these specific aspects without considering other crucial factors such as infrastructure, innovation, etc., that contributes to a nation’s progress.

According to Lenin (2019), primary level makes a base of students, and for this purpose, teachers need to be well qualified to enhance their critical thinking and cognitive understanding, hence the argument *“Students join university to do a major in the specific field. So more qualified teachers are required in the university level as compared to primary level of education...Therefore, it can be concluded that universities demand more money in comparison with schools”* by (Student 7) cannot be generalized to all universities. This statement rushes to a conclusion by assuming that the need for more qualified teachers at the university level, due to students choosing specific majors, that universities universally demand more money compared to schools. It oversimplifies the comparison between universities and schools by focusing solely on the need for qualified teachers. Moreover, students tend to generalize their arguments on the basis of their personal judgments and opinions, which results in a hasty generalization fallacy (Demircioğlu & Peker, 2021). Likewise, (student 72) stated that *“As I earlier stated that there are some people that argue about this formation of a child while spending money on primary level but I would personally suggest that state spend more on university because in my personal opinion I learn a lot on University to pursue my career. Hence, University is the only place that polishes skills”*, here, sentence displays hasty generalization fallacy by using personal experience as a primary basis for the argument. It assumes that because the speaker personally learned a lot in university to pursue their career, it implies that university is the only place where skills are developed effectively. This overlook the diverse learning environments, excluding other valuable forms of education that might occur outside a university setting.

Similarly, *“Most of the students got their studies right after primary education. Some critics blame high tuition fees as major reason behind this attitude, but more students willingly do great on their own studies without financial pressure. Hence*

spending too much finances on something that will eventually be loved and utilized is utter foolishness” (student 73) and *“As far as I have observed, only those students succeed in their lives who was known from the root of knowledge”* (student 11) assumes that because some students do well in their studies without feeling financial pressure, spending a lot of money on education is foolish. It overlooks the fact that financial constrains can affect different students different and that success without financial pressure does not apply universally to all students.

According to Elston (2022), it is often said that knowledge is the accumulation of one’s mistakes; however, experience is not always a reliable teacher, and sometimes we need to stand aside from our experiences and consider the full body of evidence surrounding a given topic in order to arrive at the facts. It means that in order to make an argument, evidence is meant to be provided that clarifies the confusion of the reader. Hence, *“Educated people can cope with every situation effectively”* (student 14) is unclear and lacks proper explanation. It assumes educated people can handle any situation effectively by overlooking the reality that effectiveness in different situations depends on factors beyond education, like personal skills, experiences and the nature of situation itself. Educated individuals may encounter situations where they struggle to address them effectively (Al-Shuaibi, 2014). Hence, generalizing the idea of coping with ‘every situation’ with ‘educated people’ is not relevant and lacks relevance.

Moreover, lately, there have been notable shifts in employment opportunities. Sometimes, when hiring candidates for a job, skills are prioritised. The means of generating income have also evolved with the advent of advanced social platforms. Now, individuals, whether they are students or merely college graduates, can explore and find work opportunities. Social platforms like ‘Fiverr’, ‘Upwork’, and other freelancing sites, provide fruitful means to earn money online. Hence, being a university graduate does not guarantee ‘good earnings’ or ‘experience’ (Jones & Schmitt, 2014). So, the reason given by (student 23) *“...people with a university degree have more experience and good credentials to earn a living as a compare to person who doesn’t have been to university”* lacks good reasoning. It cannot be generalized to people who have graduated. According to a study conducted by Doherty, Street, and Webber (2007), employers tend to view economics graduates as lacking in skills due to their limited experience. People do not earn despite being university graduates. Hess (2017a) reported that the majority of the most successful businesspeople in modern history did not even complete their bachelor’s degrees. Whereas we have university

dropouts like Bill Gates, Mark Zuckerberg, Steve Jobs, etc., are all notable individuals who went on to become billionaires, their accomplishment demonstrated that individuals who have dropped out of college can still achieve success (Bouchrika, 2023). Hence, the argument lacks proper reasoning to make such a bold claim.

Sometimes, the premises provided to support an argument sound valid, but the conclusion lacks clarity (Mayfield, 2014). For instance, “*all the university graduates are more competent as compare (compared) to students who have secondary degree but the quality of those students who just have university degree is negligible compared to students who have just passed education and making earning of it*” (Student 74), in this argument, the premise is used correctly: university graduates are competent as compared to students of secondary schools, yet earning does not restrict the degrees. But the sentence jumps to conclusion too quickly by suggesting that those who only completed their education and started earning are automatically more skilled than university graduates. People do find multiple ways to earn even though they are not university graduates (Hess, 2017b). So, the student made a hasty generalization resulting in making the argument fallacious; it shows up in the numbers when attempting to draw sweeping conclusions. In this case, the student anticipates that the claim will precisely match reality.

Furthermore, students tend to get confused when it comes to choosing the right career for themselves (Nyamwange, 2016). University education does not guarantee helping students in this matter. So, the argument “*University level education is far more important than primary education because it is the level where students choose their career option...So it is better for state to spend money on university education as it give benefits to the students as well as to the country*” (student 24) cannot be generalized that the government should spend money on funding universities. The argument assumes that the primary purpose is career choice, ignoring the importance of foundational knowledge gained in primary education. It’s too quick to state that university education is more important solely because it is where career paths are chosen, overlooking the broader impacts of early education.

Currently, depression is one of the most serious issues faced by students, and paying educational expenses is considered to be one of the reasons. But it cannot be generalized to all students as there are multiple other factors that cause depression including high workload and grades (Bekova, Dementeva, & Smirnov, 2021). Hence the argument “*...many students these days are depressed and experience anxiety when*

facing challenge of education expenses. Hence education ignites depression in all students....lower or middle class of our society faces this anxiety the most...” (Student 30) sounds unreasonable and seems unclear. Stating a limited observation as a universal fact leads to generalization. Not every individual can afford education, but people still manage to survive and live their lives. Another argument “*...primary education is base and if your base is strong than you can shine brightly...spending money on primary education and making the base strong can definitely produce shining stars for future. Hence, only those students can survive in university whose bases are strong.*” (Student 39) lacks the formation of good reasoning. Students, whose base is not strong, survive at university through hard work, dedication and determination (Kuh, 2006). It is clear that the sentence has an assumed premise. If we consider this statement on the surface, we must also acknowledge its supporting premises. To think critically, we must be cautious about accepting claims that are based on assumptions that have not been clearly stated or confirmed. The university serves as a gathering place for students from various regions. Some students excel academically, while others find it challenging to grasp knowledge. Therefore, making a general statement by claiming that “only those students” is fallacious in nature. Although primary education is less expensive as compared to university education, it is not affordable for every individual (Sulochana, 2015). The argument given by (student 56) “*...primary level there is less expenses, books prices are low, no research work, and no gadgets so at that level almost everyone can afford*” is generalized without considering sufficient sample to present because it assumes that just because primary education involves lower expense, cheaper books, and fewer gadgets, everyone can afford it. It foreshadows the complexity of financial situations and doesn't consider the varied circumstances that might hinder some individual from affording even supposedly inexpensive primary education cost.

Sometimes, when we hear an argument, we come across a logical flaw that initially seems to disapprove of it. As in an argument given by (student 69) “*As the number of good universities are less, a child getting higher education is much more likely to survive in this world*”, the argument assumes that attending a good university is the main factor for a person's survival in the world, which is hasty generalization. It overlooks other crucial elements like individual skills and opportunities to attend a good university. Success depend on multiple factors, not solely on the university attended.

The argument “*On other researchers it is highlighted that when a country spends money on the educational system, they get rapid progress. Hence all countries*

progress after spending money on educational system” uses hasty generalization because it assumes some research shows that spending on education leads to rapid progress in some countries, this applies universally to all countries. It overlooks the diverse factors unique to each country that can influence progress, not just educational spending.

Mayfield (2014) argues that problems arise when we make incorrect assumptions, such as when we jump to conclusions without enough evidence or when we incorrectly label certainties as probabilities, like (student 79) in the argument, “...*only students who want (want) to study and achieve their goals through higher studies can get admission in universities*” makes a generalization about the entire group based on his personal opinion. It assumes that university admissions are exclusively for those who want to study and achieve goals through higher education, overlooking the financial constraints, varying qualifications, and different pathways to success beyond traditional higher studies. Mayfield (2014) also stated that sweeping generalizations are inaccurate but widely held beliefs about some aspects of life. For instance, (student 82) stated that “*educated mind is considered far more powerful and strong than an average mind. It is important for everyone to be educated so that it would be helpful for the country and upcoming generation. For this reason a country should invest in education*”, here, the student assumes that educated minds are significantly more powerful than average ones and that education is uniformly beneficial for both the country and future generations. It rushes to conclude that investing in education is the solution without considering options that contribute to societal progress.

Another reason for committing the hasty generalization fallacy is by drawing conclusions without providing proper, valid data. As in the argument “...*those who don't get enrolled in universities, lack all the success hence university is the reason youth excels in life as it delivers education that is recognized worldwide and has a higher value than primary or secondary education*” (student 92), one cannot state the number of students who excel in life just because they got enrolled in university. We have learned about famous people, including Bill Gates, Thomas Edison, etc., who were university dropouts yet were considered geniuses. This shows we cannot generalize our perceptions without providing statistical evidence. So, to strengthen the argument, one should provide plenty of evidence from reputable sources to back up the claims.

The arguments provided by students above demonstrate that hasty generalisation is a common occurrence in daily life. However, it is crucial to understand

that the actions and attitudes of a group cannot be assumed based on a single individual's mindset or personal opinion. Based on the findings, it has been observed that students make reasoning errors in various ways when the given reason does not sufficiently support the claim. When a conclusion is predicated on a leap to generalization, the data typically contains instances of hasty generalization. In this instance, the author assumes that the general truth will be coherently stated in his or her remarks. Hence, according to the findings, students commit reasoning errors when the reason does not adequately back up the claim in one of a number of ways. First, data frequently exhibit generalization when the conclusion is built on a jump to generalization. The students' arguments were classified as committing the mistake of rapid generalization for a number of reasons, one of which was that they overstated the conclusion they reached and used incorrect word choices.

In conclusion, to prevent the hasty generalisation fallacy, students should consider all the factors related to the situation before reaching a specific conclusion, this will help them avoid bias and ambiguity in arguments.

4.3.2 Excerpts of Questionable Statistics Fallacy

Statistics that are manipulated or cited from unreliable sources in order to appear more credible are commonly referred to as "questionable." Data-based public information writing relies on informal reasoning and arguments. Since the time of Aristotle, informal arguments have been assessed by searching for fallacies. Statistical fallacies refer to situations where the conclusion drawn is not backed by the numerical data provided in the premises (Klass, 2008). People often include statistical data in their writing without conducting proper research. Their claim is unreliable and invalid. Consider the following arguments presented by students in their argumentative essays.

*"...it is better government to primary education because it has a **higher ratio** of enrollment in institution"* (student 1)

*"**According to the scholars**, a state should spend money on university education"* (student 3)

*"**One may argue** that primary level education is also important, as it builds the foundation of a child. Although there is no denying the significance of a quality primary education, **it is worth noting** that it doesn't actually require much money"* (student 4)

*“According to **studies and reports**, people who are educated and have been graduated from prestigious institutions are more likely to have a better living standard along with social validation” (student 5)*

*“Countries such as Australia and United States have the top ranking universities as **per the record of 2017** because they spend money on their higher education” (student 6).*

First argument assumes that because the government governs primary education and has a high enrollment ratio, it is better. But enrolment does not necessarily mean quality education. Second argument implies that scholars agree a state should spend money on university education, which is a questionable statistics fallacy. It assumes unanimity among scholars without presenting specific data or source to back up the claim. In reality, scholars often hold diverse opinions, and statements does not provide any statistical evidence or the range of perspectives among scholars on this matters. Similarly, the third argument is faulty in nature as it makes an assumption without proper evidence. It suggest quality education does not need much money, but it lacks specific data or example to support the claim. Fourth argument again present a general idea without specific evidence from studies or concrete data to support it. It says that educated individuals from prestigious universities are more likely to have a better living standard but it does not mention which studies or provide any number or examples to back up this claim. While education can indeed correlate with better opportunities, this statement lacks specific evidence to make strong, reliable case. The last argument also demonstrates questionable statistics fallacy because it assumes a direct causal link between spending on higher education and achieving top-ranking universities without providing substantial evidence or data to support the claim. In short, none of the arguments mentioned above has provided the necessary research and statistical data to support their claims and establish the validity and authenticity. Many students find it challenging to present a premise that effectively supports their claims and enhances their credibility and persuasiveness.

Graw and Harris (2007) in their research stated that statistics play a vital role in making a claim acceptable to people, as they show the true picture in the form of data. It helps in comprehending, understanding, and utilizing numerical data. Statistics transform raw data into processed, valuable knowledge. It is the systematic collection and analysis of numerical data to explain, predict, and predict circumstances. However,

the statistical representation by students in their writings does not adhere to the definition. Consider the following excerpts:

“...many European countries accept the importance of higher education and provide free higher education to their students” and “Researchers argue that in Pakistan, the problem regarding primary education can be solved by just the approval of one curriculum...”(student 10)

“About 75 – 80% of our student visas got rejected in different western countries” (student 13)

“But considering the fact that primary education is already not too expensive in our country...” (student 12)

*“The infrastructure for higher education is also very expensive but it in turn can only produce limited amount of specialists, while primary education is cheap and **has the capacity to ensure millions**”* (student 17)

“Many people after doing their matriculation gets indulged in drugs and other illegal activities as they cannot find the best place where they can use their full potential” (student 22)

“...there is this matter of fact that countries invest too much on higher education and ignores primary” (Student 22)

“According to recent survey, in our country, nearly half of the population is illiterate” (student 25)

*“Educational system in our country is poor as compare to other countries. **They spend more money on education while we spend more money on defense systems**”* (student 26)

*“In Pakistan, university education is not easily accessible to everyone, due to numerous hurdles. **Its (it is) reported that**, most of the rural areas in Pakistan don’t have proper institutions to achieve this purpose to provide higher level education”* (student 29)

The first argument (student 10) employ fallacy of questionable statistic by drawing a misleading comparison between European countries and Pakistan. Comparing a solution in one context to a vastly different one is not a fair statistical inference. The second argument (student 13) illustrate the fallacy by presenting a high rejection rate of student’s visas without offering any supporting data or context. It lacks specificity regarding the countries, the time frame, or the demographic profile of the

applicants. This lack of detail makes it challenging to assess the accuracy and validity of the statistic, potentially oversimplifying a complex issue without providing substantial evidence or background information. In third argument, student assumed that since primary education is “not too expensive” in their country, it automatically implies that there are not any significant issues or barriers related to primary education.

All the above-mentioned arguments do not provide authentic data to prove their claims. Words like ‘some’, ‘fact’, ‘surveys’, ‘many’, etc., are used without proper evidence. What are the chances that the claims are not feeble but true? How can readers be sure that the research supports the premise? This generates the fallacy of questionable statistics, where a writer fails to mention numerical data rather than assumptions.

Furthermore, it is evident that students often resort to using questionable statistics fallacies in order to make their justifications appear sufficient. Upon initial inspection, readers may be drawn to the numerical data presented, such as “75% - 80%,” (student 13) and perceive it as accurate information. However, a sense of doubt and uncertainty remains present. Assumptions are used in conjunction with factual information to support an argument. The reader is not provided with sufficient evidence or information to support a claim. As seen in the examples, the majority of students have used words such as “recent surveys,” “reports,” and “scholars.” When presenting an argument regarding facts and figures, it is important to provide not only reasons but also statistics as supporting evidence. Statements are considered credible and accepted only when supported by empirical data. Otherwise, they are seen as weak statements made by the writer. Similarly,

“After several research, the state has come to the condition that many children are not given education...some student dropout from universities as they were not able to able pay their fees to the institution” (student 35)

“According to some survey, 40% of Pakistani students cant continue to get higher education due to high fees” (student 37)

“...universities and their students are neglected more than primary” (student 41)

“According to some research in Pakistan, the average cost of building a primary school is about 50 to 60 lacks” (student 44)

“...the opponents say that in this way the economy would fall” and “It is a well-known fact that University take much more investment than setting up primary sector” (student 51)

*“...a person with more **Intellect** can make a society a better place to live...every citizen who had studied can prove to be useful” (student 54)*

While presenting an argument, the writer needs to make sure to add relevant and valid sources to strengthen the claim, which will encourage his readers to agree with the given viewpoint. Here, statistics play a significant role. If the premises are added considering the statistics, it will provide a solid ground for the writing style (Mosley & Baltazar, 2019). Keeping this perspective in mind, the first argument in the above box lacks specific, verifiable data to support the claim. Phrases like “several research” and “many children” are vague and do not provide precise numbers. This lack of concrete information makes it difficult to assess the accuracy of the issue. So is the case with the second argument as the given percentage “40” seems dubious as the name of survey is not mentioned; hence, the element of uncertainty is there. In third argument, the student did not provide any statistical evidence to support the claim. The comparison is made without citing concrete figures to quantify the extent of neglect, resulting in questionable fallacy. In fourth argument (student 51), the student has made a strong claim but again such bold claims cannot be perceived true until and unless authentic sources are named. Similarly in last argument (student 54), a direct relationship between higher intellect, education, and societal betterment is assumed without presenting verifiable statistics to validate this connection. The argument is not substantiated with empirical support. As stated by Bartha (2013), it is important to note that arguments cannot be made on the basis of assumed facts and possibilities. For instance, the phrases like ‘the opponents say’ and ‘it is a well-known fact’, show the premises are drawn from one’s own understanding of the problems and situations. It shows a lack of proper research and, at times, proper citations.

The existence of remaining excerpts from the argumentative writings also includes “if state invest on students of university, they will return it back immediately **within few years**. There is less chance that university student (students) left Institute...” (Student 56), here, it is assumed that investing in university students will guarantee an immediate return within a specific timeframe (5 years) without providing any statistical data. How can one estimate the time frame in which students will return the investment through their work and success? It is a misleading trait to make someone agree to a given argument. “...students leave education **at school level five after school** because of primary level (,) nobody focusing on school and you do this (,) many children are

out of control” (student 61), the phrase ‘many children are out of the school’ lacks statistical context, making the argument a prime example of questionable statistics fallacy. Misusing numbers on purpose is dishonest and cannot be justified or accepted. However, the argument made by (student 64) does not seem to be mindful of it, that is “...it is also **said by the experts** that better resource centers and laboratories should be built in order to boost the research work in the country. This argument is refuted by saying that research centers should be built...” Here, it shows a lack of credible information. Just because some ‘experts’ claim something, one cannot limit their viewpoint by relying on it, nor can they mention it without presenting real and credible sources. So is the case with another (student 76) argument “**Research has found** that primary education is more progressive as it supports lower income households” where statistics are not well researched to make a claim. The most common errors people make include being biased, employing the wrong tests, drawing the wrong conclusions, and inferring connections, when none exist. For instance, (student 83), “*university students lack even the basic necessities...this has become one of the major reasons why university students cannot show potential in their studies*”, this argument relies more on assumptions than empirical evidence. (student 88) “*The major reason for illiterate countries is that their most of the population cannot get the basic primary education*” and (student 100) “*It is reported that efficient university graduates become dedicated bureaucrats*” jot down their premises on the basis of wrong conclusions and assumptions. To conclude, the analysis shows the misuse and lack of evidence used to make a claim. This, as a result, affects writers’ viewpoints because no proof is provided to make the claim authentic and sound valid.

4.3.3 Excerpts of Inconsistencies and Contradictory fallacy

Inconsistencies and contradictions can be found in many forms and contexts. They are frequently employed without the user being aware that they are being inconsistent. At other times, it is just a case of being intellectually slothful (Williams, 1981). They are sometimes used emotionally, when the speaker has abandoned all reason and soundness in an attempt to prove a point. While “inconsistency” and “contradiction” are commonly used interchangeably, they actually mean two different things. A stronger form of inconsistency between the two propositions is a contradiction. In a case of obvious contradiction, one of the sentences must be false while the other must be true; however, in a case of apparent inconsistency, any or both

of the sentences may be untrue. When someone suddenly shifts their stance on a major subject without offering a convincing explanation for the shift, they are engaging in inconsistent reasoning (Dowden, 2017).

The inconsistency and contradictory excerpts from the sample included an argument by (student 2) that *“Although a state should spend more money on higher education, it is not possible keeping the current economic state of Pakistan. Pakistan’s economy is not in stable condition and spending more money on higher education can lead to its decline even more”*, initially the argument acknowledge the need for free education but then contradicting that stance by citing the unstable economy as a reason against it presents the fallacy. The inconsistency arises from supporting the idea while simultaneously presenting reasons against implementing it, leads to contradictory argument. *“Spending money on higher education will promote a sense of responsibility and ethical attitude among people. They will be more cooperative towards each other and a feeling of comradeship will be created as well. But every coin has two sides, we cannot adopt a biased attitude towards higher education”* (student 14), this argument presents a dual-sided notion. Initially it asserts that spending money on higher education will foster sense of leadership among individuals; however, it abruptly shifts by stating that despite these positive aspects, adopting biased attitude towards higher education should be avoided.

Similarly, *“Primary education can be easily dealt with even (on) much lesser budget as compare (compared) to universities. Primary subject (subjects) don’t require much sophistication and are much easy (easier), However, we cant neglect it”* (student 19). On one hand, the premise suggests that acquiring primary level education is easier compared to university education, and it does not require as much sophistication. However, on the other hand, it states the importance of not neglecting the significance of primary education. The writer seems to be struggling with understanding and accepting a specific point of view. The argument presented here is contradictory, which makes it difficult for the reader to determine which side to trust. As a result, it becomes challenging to make an informed decision.

Moreover, the importance of university education is highlighted by (student 29) stating that *“University education is important to obtain in a specific field...it is not mandatory to get this level of education because anyone with primary and secondary education is able to work and start a business.....”* however, the premise does not support the conclusion. *“Free education will make student (students) tranquil. Fees*

and tuition burden are actual tensions that are pursuing student (students)...this tension retard (retards) their mental growth, and trepidation is always there is their mind. In my perception, free education will enable them to focus more on their academic career....it is (a) good idea to allocate special amount of budget. However, free education is not always fruitful, free education means pay (paying a) greater amount of budget to education institutions. Not free education is a basic right. Facilities of (for) health, modern roads and technology, and many others are also the goals of government” (student 48). In this argument, the premises used to make the claim are debatable in nature. Initially, free education is supported and emphasized, but later on, it shows contradiction as the conclusions do not support the premises. The same fallacy is committed by (student 56) by stating that *“It must be provided by the state free of cost at every level but there are some economic issues for every country that it cannot provide at every level”*. There is a contradiction in the claims, one can either support education to be free of cost or simple go against it. Stating both sides simultaneously makes the argument feeble. Another argument *“It can be argued that our university education is equally important to live. But many people have lived successful and content lives with just primary education”* (student 71) shows a contradiction. If we consider the first premise, ‘university education is equally important to live’, to be true, as in order to have a good life, a person needs to graduate so he or she can get a good job, then again, the second premise, where it says that ‘but many people have lived successful and content lives with just primary education’ contradicts our belief and opinion. It is not clear which point should be considered. A simple glance at the sentence reveals that the writer has a lot of misconceptions regarding primary education.

According to Mosley and Baltazar (2019), the truth of the premises and the truth of the conclusion have nothing to do with the validity of an argument; rather, validity is concerned only with a conditional claim. In other words, if you accept the premises, you have to accept the conclusion as well. For instance, *“The divisions into primary, secondary and higher education have helped us in determining that which part is a basic requirement and which one is a burden. Both primary and higher education are of their own importance. However, realistically spending too much money on both can become a burden, especially in countries like Pakistan”* (student 73), initially this argument acknowledges the significance of both primary and higher education but then introduces a contradictory perspective by suggesting that spending too much on either

can become a burden, particularly in countries like Pakistan. The shift in argument creates an inconsistent and contradictory viewpoint.

Similarly, *“Some people argue that if the state spend money on higher education then the money has to come from somewhere...it is obvious that the money will come from Taxes...it will affect the society...”* (Student 81) creates confusion as the reasons lack validity and credibility as they are presented simultaneously. It can be tricky to identify inconsistencies because they are often buried in complexity. Sometimes they are hidden, but usually they are not. *“Government should spend more on higher education because every type of job nowadays needs higher education if the government would spend a lot of money on higher education so there would be no chances of unemployment in the country but however it leads to unemployment also because if you will spend more on higher education so there will be a lot of competition in the market and jobs will be less...”* (student 86), at first, the argument states that the government should spend more on higher education to reduce unemployment but then, it contradicts itself by suggesting that increased spending on higher education would actually lead to more unemployment due to heightened competition in the job market. This shift in reasoning presents conflicting views within the same argument. Secondly, *“Higher education should be free for every individual but it will destroy the economy of the country. Hence it can't be done”* (student 88), the argument displays the fallacy by proposing that higher education should be free for everyone while simultaneously claiming that such an action would devastate the country's economy. It shows the fallacy of contradiction is incorporated.

To conclude, a good argument should be free of contradictions and inconsistencies, so it does not make a writer look clueless. Presenting an argument authorises and empowers the focus person; nevertheless, if the offered arguments contradict each other, the listeners will be skeptical and will question the person's authority and statements. Therefore, it is important to not add contradictory statements while making a claim.

4.3.4 Excerpt of Loaded Question Fallacy

The fallacy of the loaded question occurs when an individual asks a question that is biased and contains deceptive hidden assumptions. In an argument, loaded questions can be used to gain control of the conversation and force the other person to take the defence (Mayfield, 2014, pg. 316). To make it more simple, the fallacy of

loaded questions, also known as the ‘complex question fallacy’, happens when a question is posed in such a manner that if the respondent were to address it directly, he would be forced to concede something that would be negative to his position in the debate (Walton, 1999).

Considering the argument presented by student 75, “*But which of these stages is more important, and should sectors really spend money on them?*” the argument demonstrates the fallacy by implying that one of the stages mentioned must be more important and that sectors should spend money on them without considering the context or providing balanced options. The question assumes a predetermined conclusion without offering neutral or unbiased inquiry into the importance of these stages or the necessity of spending on them. When someone is asked whether the government should spend, their answer tends to be limited to a specific type of response. This limits the options for direct replies and weakens their position in a conversation. If the respondent answers ‘Yes’, it would imply that the government was not spending money before. On the other hand, if the answer is ‘No’, the respondent will be under criticism. It is important to note that the fallacious nature of a question is not solely determined by its complexity. The question is flawed because it can trap the person answering it, making it difficult for them to provide a logical response in certain situations.

4.3.5 Excerpts of False Dilemma Fallacy

A false dilemma overemphasized the two extremes while ignoring all possible intermediate outcomes (Brisson, *et al.*, 2018). It is also referred to as ‘false dichotomy’, also known as a false choice, occurs when people are presented with two options and are forced to choose one, even if one of the options has already been rejected. This is a fallacy if the presented options do not contain all of the actual options. For instance, the argument “*A state shouldn’t spend money on primary education because at that very young age, there is not as much requirement of facilities and skills as higher education*” (student 3), suggests that a state should not invest in primary based on the assumption that higher education requires more facilities. It falsely limits the options, ignoring the critical development needs and foundational importance of primary education in favor of higher education’s perceived needs. To persuade others to accept our claims and put faith in our reasoning, critical thinkers must explain the rationale behind the claims (Widyastuti, 2018). Now, depending on their level of familiarity with the topic and their presumptions, different audiences may find the premise to be either credible or

impossible. So the argument can be interpreted as saying that states should spend money on primary education only if there is a requirement for facilities; otherwise, it is not worth spending. Another argument, *“Primary level education can be run on private level but there is a need to spend money on university education if we want our universities in the list of top 100 universities in the world”* (student 6) presents a false dilemma by falsely framing the situation as a choice between privately funded primary education and investing solely in university education to secure a top position globally.

Furthermore, *“The student can only be successful in his life if his base is strong. There is no use of having university level studies if the individual’s base is weak”* (Student 8a) and *“Only through this we can give direction and shed light on all will result in development of country. If one get (got) enough education in primary they would have more into the progress of one’s country”* (Student 8b). Both arguments contributes to false dilemma fallacy by oversimplifying the importance of education levels. The first suggests that university studies are futile if the foundational education is weak, creating a binary view. The second implies that a strong primary education alone is enough for national progress, neglecting the significance of higher education in comprehensive development. Both scenarios overlook the symbiotic relationship between different educational levels in shaping an individual’s success and a nation’s progress. Next, *“...either the government of any state or country should spend more on the university education which will provide the state well-trained professionals or it wont be beneficial for the state”* (student 15), here, once again, the assumption is made that there are only two choices, disregarding all the other options that could be taken into consideration. *“In university education, there are few subjects that require proper laboratories, equipped with modern technology. Students will only be able to have a good learning environment if they have facilities”* (Student 16), it is necessary for the reasons to demonstrate a direct logical connection with the argument. The false Dilemma often uses ‘either-this-or-that’ terminology, meaning that if one of the two options is true, the other must be false, or that if you reject one, you must accept the other. It is possible that both are wrong and that they are both right in this case. So, the argument shows either proper equipment is to be provided or students won’t acquire good learning. Again, this cannot be the only possibility.

A study conducted by Willcoxson (2010) shows that in most cases, students choose to leave their studies after getting higher education mainly due to personal issues or because they cannot seem to go through it, which does not always result in their

positive contribution to the welfare of the country. Ramage and Bean (1999) stated that evidence can be obtained from various sources. These sources include personal experience, academic research, statistical data, citations from experts, analogies, emphasising outcomes, presenting factual information, and offering logical explanations. For the argument to be valid, it is important that the reasons presented establish a clear and logical connection. “...so (the) government should spend more money on university education if it wants to maintain (the) country’s prosperity” (Student 42), the argument presents a limited, binary choice: suggesting that the government must allocate more funds to university education as the sole means to maintain the country’s prosperity. It simplifies the complex factors contributing to a nation’s prosperity, degrading the potential impact of investments in other sectors or levels of education. In other words, investing money exclusively in university education cannot be the sole factor in a country’s prosperity. Working in the health sector, increasing the employment rate, and eliminating social issues are some ways to boost it. “So to conclude either the government should spend money on primary education or let its youth lead to the road of destruction where they won’t be able to excel in their life” (student 91), the argument presents a situation where only two extreme options are seemingly available: either the government spends money on primary education or allows youth to face a road of destruction without the ability to excel in life. This oversimplified view excludes potential alternative solutions, creating a forced choice between two extreme outcomes. Next argument, “For any country to grow its economy, either they should have well accomplished engineers, doctors, etc. only then the universities from where they are trained are accommodated for this task or the country’s economy will be put at stake” (student 94), suggests that for a country’s economy to grow, it must rely solely on well-established engineers and doctors trained exclusively by universities. It presents only two extreme options: either having these professionals trained by universities or risking the country’s economy.

Based on the analysis, it is clear that the most common source of this error is failing to investigate alternative solutions that might work for the given circumstances. This may be the result of negligence on the part of the arguer, or they may be intentionally trying to mislead the reader. Therefore, the fallacy of the false dilemma leads to connecting two separate and extremely opposing events, which ultimately results in making the argument appear unsound and irrelevant.

4.3.6 Excerpts of Weak Analogy fallacy

Arguments are formed by making comparisons between two distinct things, concepts, or scenarios. If the two things being compared have significant differences, the analogy being used is weak. Consequently, any argument relying on this weak analogy is flawed. Epstein (2006) defined analogy as reasoning through comparison when it is used in the context of an argument: we reach a conclusion on one side based on the comparison; thus, on the other hand, we should reach the same conclusion. Considering it, the arguments given by students are analyzed accordingly. Student (3) states *“The children of primary education require more love and attention rather than fundings, whereas, the students of university education need a lot of fundings because they are future of the country. So, a state should invest in university education”*, the argument assumes that because primary education and university education both involve students, they should receive similar levels of funding, which does not necessarily follow logically. Primary education needs funding as much as higher level education. The comparison is feeble and the premises lack credibility. Similarly, *“Spending finance on primary is an investment for (in the) state’s future. Children will ultimately govern state so spending on children wouldn’t be a bad choice”* (student 6) makes a weak comparison; a claim so weak that it cannot even be considered plausible. An investment can also be made on higher education instead of primary, since higher education students tend to be more indulged in governing the state. Another argument, *“If we wanted to check that, country is developed or not, we pay attention and check the technologies used in that country. Technology provides evidence that if country is developed or not, so we should pay more money on university education”* (student 9) presents weak analogy fallacy by assuming that the technological advancement of a country directly correlates with the level of investment in education. While technology can indeed indicate a country’s development, the argument oversimplifies the relationship between technological progress and education spending.

Moreover, according to Henderson (2018), it is possible for an argument to have accurate and important premises, yet those premises alone may not be enough to justify the conclusion as a reliable reference. For instance, *“Another reason why government should spend more money on university education is that most students that get admission in universities are those who are able to grasp knowledge”* (student 11), here the reason might seem plausible but it is not accurate to make a conclusion. While many university students possess strong academic abilities, admission to university does no

exclusively measure or guarantee someone's capacity to understand knowledge. Weak arguments are criticised for their inference from the premises to the conclusion. Instead of questioning the validity of the premises in the given example, one can argue that even if the premises are true, there is not enough evidence to support the conclusion (Pine, n.d.). "*Primary education is not the last stage but the initial stage and one can improve with passage of time. However, university education is the last and should be given proper learning*" (student 15), this argument oversimplifies the educational stage and their significance. While primary education is indeed an initial stage, considering university education as the "last" stage overlooks lifelong learning opportunities and continuous education beyond universities. It assumes a binary perspectives on education, implying that once university education concludes, learning is complete, which does not account for ongoing skill development, further education, or professional growth beyond university studies. Similarly, "*Primary education is the level of education and it is not very much demanding. The subjects taught at primary level do not require modern equipment. Young students have to go a long way before entering practical life so they don't need as much skill development as university students*" (student 16), this argument shows the level of demand in education directly correlates with the need for modern equipment or skills development. It neglects the importance of primary education by suggesting that because it does not require modern equipment, it is less important than university education. This overlooks the critical foundational knowledge and cognitive development that occurs during primary education.

Furthermore, when two items are compared using an analogy when there is little to no proof that they are actually related, the analogy is being utilized as a hasty premise. The phrase "apples and oranges" is commonly used to describe a weak or incorrect comparison (Barone, 2000). Consider the argument "*Primary education is necessary to develop and nourish a person while higher education is more about specializing in a field so you can get a job in it. It is more important for you to be a better human being than to have a better job*" (student 17), the comparison between 'nourishment' and 'specialization' is debatable. Although it is significant to nurture a child into a good human being, so is the education of a student of higher level. "*Educated people are more polite, better decision maker and well-mannered in our society as compare (compared) to uneducated*" (student 21), this argument draws a broad comparison between educated and uneducated individuals in terms of their behavior. While

education can influence behavior, the statement overly generalized by assuming that all educated people are uniformly more polite, better decision-makers, and well-mannered compared to all uneducated individuals. The act of compartmentalization has opted to categorising individuals as either educated or uneducated, but without offering any evidence to support this assertion. *“Finally, government should build more universities so students get more options to choose their careers. If there are more universities or more seats are available for students then they will be able to earn in their future”* (student 19), the implied conclusion is that if there are more universities, then they will boast more students. This might be the case; however, no such evidence has been provided to support the claim; it is just an assumption. Similarly, arguments like *“Contrary, primary education is very low and is affordable to most of people. Hence there’s no need to spend money on primary level”* (student 37), *“Primary education however, needs less of the economy of any country and can be gained easily so it should not be giving more importance over university”* (student 54) and *“Fees of schools are quite less as compared to fees of university education. So it is easier for people to afford it”* (student 42) is merely based on an assumption. (Student 37) exhibit the fallacy by equating the affordability of primary education with the assumption that it does not require additional funding. Whereas, (student 54) simplifies the importance of primary education based on its perceived ease of attainment and lesser economic requirement compared to university education. This argument raises questions like, Can poor people afford primary education? What is their ratio? Despite the vast amount of digital and print resources, researchers rarely make use of available data from studies and statistics. This demonstrates that, before they begin to write, students do not conduct extensive investigations using such readily available resources. Hence, claiming without proper reasoning leads to fallacious statements, as we cannot assume that there will be supporting evidence for the conclusion just because the premise makes use of a clever analogy.

Weak analogy places emphasis on the fact that people frequently turn to analogies as a means of forming solid opinions (Bartha, 2013). An argument given by (student 49) stated that *“...primary level education should also be considered critical but higher education makes a man mature, even though students are mature enough, they have the understanding of adults”*. Here, comparing children with adults does not seem relevant. Maturity does not have to be restricted to a higher level. People tend to mature not only with age but with experiences as well (Schwaba, 2022). If an analogy

is more convincing than it should be, it is a fallacy. Many individuals accept only what they understand; thus, even if an analogy is not perfect, it can still be convincing (Posner, 2006). However, when trying to understand an argument, it is important not to let our opinion about its validity get in the way. It is important to consider the other person's perspective before making judgements, even when it involves arguments and viewpoints that we may not agree with. In conclusion, analogies can be seen as convincing fallacies because they provide a quick and imaginative comparison without fully considering or representing all the similarities. We should not automatically accept something as proof simply because an analogy helps us comprehend the arguments.

4.3.7 Excerpts of Questionable cause fallacy

The fallacy known as “questionable cause” occurs when someone oversimplifies causation and insists on a causal relationship between events without sufficient evidence (Mayfield, 2014, p. 320). Questionable cause fallacy is committed when “the relationship between the premises and the conclusion rely on some imagined causal connection that most likely does not exist” (Manninen, 2018). People often make the mistake of attributing a statistical link as the cause of something, leading to misunderstandings. The fallacy of questionable cause can result in reaching incorrect conclusions or oversimplifying a complex set of causes. Now, let's look at the arguments given by students in their argumentative writings. (Student 1) stated that *“The state funding for primary education does not bring financial problem for the country **because** there students are immature and unaware about world”*, the argument implies a causal relationship between funding and financial problems solely based on the assumed immaturity of students, without addressing on proving any direct causal link between these factors. Similarly, another (student 30) states that *“The fact that there is no fund from the states to facilitate students with their education fees is **one of many reasons** why students are not doing their best in their currently enrolled degrees”*, here, the assumption is made that the absence of funding for education fees in one of the primary reasons why students are not performing well in their degrees/ While lack of funding could potentially impact student's performance, attributing their subpar performance solely to this factor oversimplifies the complex array of reasons that could contribute to academic struggles including academic support or external factors (Usher & Kober, 2013). Moreover, *“If the state spends money on university*

students he will focus on his study. Secondly, nation will be happy, they will remove their anxiety of studying their children in university because most of the parent thinks that our children will not get education due to which they get suffer from different disease” (student 33), in this argument, the student draws the conclusion that the reason parents suffer from health issues is because their students cannot get an education due to the government’s inadequacy. This eliminates the other factors that could cause major health issues including infections, injuries, etc. How can we be so sure that this is the only reason parents suffer from health issues? On the other hand, (student 37) argued that *“Students quit studies after getting secondary education...they cant afford high fees. Many talented students fail to continue their education due to this issue hence country loses bright students”*. If we analyze this argument, we can think of other factors that hinder a child’s education, let alone the fee issue, including ‘lack of motivation’, ‘lack of hard work and dedication’, ‘absence of efforts’, etc. These factors can be considered reasons why students are failing to continue their education.

The cause-and-effect relationship carries immense significance when making an argument (Meral, Şahin, & Akbaş, 2021). It needs to be relevant and acceptable. But students tend to link situations that, at times, lose the appropriate meaning. Such is the case with (student 43) and (student 61), stating *“In state like Pakistan, it may not be better to spend money on university education. The reason is that all the universities are teaching old syllabus and they are not focusing on skills”* and *“In our country government is not focusing on primary education so the children have no basic knowledge about anything”* respectively. The reason the state should not spend money on university education is because ‘all’ universities rely on the ‘old syllabus’, which is not an appropriate reason. Similarly, students do not have ‘basic knowledge’ because the government is not focusing on ‘primary education’, which does not sound plausible. Another fallacious stances by (student 62) *“There are so many middle-class people who cannot afford providing education to their children so they have stopped this by increasing population so if they start getting free education they can live happily”* and (student 90) *“The government schools have no good administration system and buildings and labs aren’t in proper condition. It is not easy for the teachers and staff so that’s why our education rate is declining day-by-day”* falls under the same drawback where reasons to form a conclusion lack clarity and soundness.

Thus, analysis shows that the “questionable cause fallacy” frequently results from presuming a causal relationship between two occurrences simply because they

happen at the same time. This mistake is committed when it is assumed that A causes B simply because A and B are commonly related, to use formal language. The error is asserting causation where there is only tenuous support. In addition, students frequently commit the fallacy of a doubtful cause when they connect two informal situations without conducting study to determine the relationship between them. Sometimes, getting the same result more than once has a tendency to create this connection, but there is no way to respond to this without strong proof.

4.3.8 Excerpts of Slippery Slope fallacy

The slippery slope is another fallacy that involves cause and effect. Generally, it is said that allowing one thing to happen can initiate a chain reaction that may be unstoppable. As a result, it fails to account for a number of vital factors (Mayfield, 2014, p. 322). According to Rizzo and Whitman (2003), there are three features of every slippery slope argument: (1) an initially acceptable option; (2) a risky consequence; and (3) a process or mechanism connecting the two. Let's say someone argues that if you take the first step in a chain of causes and effects or a chain of reasoning, you will almost certainly end up in trouble if you take the second step, and so on and so forth. A slippery slope fallacy exists if the problem's likelihood is overstated. Considering the arguments given by (student 3) *"States should spend money on providing facilities to students otherwise they cant build a strong background in the field they are getting education in...wont get better jobs in future that helps in the country's progress....otherwise the country will be doomed"*, here an exaggerated chain of events or consequences without sufficient evidence is created. It suggest that if states do not invest in facilities for students, it will lead to a series of negative outcomes, such as a weak educational foundation, inability to secure good jobs, etc. This argument assumes a domino effect of catastrophic consequences without considering other potential solutions. Next, (student 14) *"...because if the money is not spent on basic education then the students will lack basic concepts and will not be able to work properly in future life,* the argument presumes an extreme chain of consequence form one initial action (not spending money on basic education). It asserts that if basic education is not adequately funded, students will lack fundamental concepts, leading to inability to function properly in their future. These arguments show that students often generalize all arguments with unfavorable outcomes and identify them as such. This form of labeling or (mis)labeling can have the effect of

shifting the burden of evidence on the arguer who seems to have committed an error and who is thus obligated to try to react in some way.

In order to get a clear understanding of the slippery slope fallacy, let's consider the general structure. According to Hotlug (1993), we have three premises and a conclusion. Where premise one shows an agent deciding whether or not to do an action or set of actions A. Second premise shows that if action A is taken, it is argued, then action B will most likely or definitely follow. Premise three presents the idea that since B is immoral, it should be avoidable. And the conclusion is drawn, showing the agent should not do anything to make A happen. In other words, the slippery slope fallacy is just a list of the steps that lead to the bad outcome, such as "first this will happen, then this, then this, and then disaster." However, it does not explain why one step leads to the next, and (ii) the list of steps is a controversial one. Now, keeping the structure in view, consider the given argument including and "*Spending more money on university education is way more beneficial and advantageous else students won't be able to graduate and contribute to improve the economy of our country*" (student 12) give the same outcomes consists of misleading assumptions. Arguments from negative effects, which are similar to the slippery slope argument but not the same, are sometimes confused with it. Slippery slope arguments are often presented in a condensed form that hides implicit premises based on common knowledge (Walton, 2016).

Moreover, (student 18a) presented an argument that "*Higher education is more expensive compared to the primary education, so even though the students complete their primary and early education, they are unable to support their higher education and eventually they are forced to quit it*" and "*And if the government do not spend much on higher education, the students will lack important instruments and facilities which will in turn downgrade the quality of education in the country*" (student 18b). Student 18 implied an inevitability that starting with the higher cost of education, student will inevitably be unable to support themselves through higher education and will have to quit. The slippery slope fallacy is evident here because it assumes a chain of events that may not necessarily happen. It assumes that because one thing leads to another, it is an unavoidable sequence, disregarding other potential factors that could prevent students from quitting higher education. Similarly, in second argument, again a chain reaction is implied where a reduction in government spending on higher education automatically leads to a lack of instrument and facilities, ultimately resulting

in a decline in the overall quality of education. Only one-way trajectory is assumed without considering alternatives or the possibility of finding other means to maintain educational quality despite reduced spending.

Next, (student 19) and (student 21) stated that *“Students at university are the youth that would be seeking jobs in near future...that would require expertise in research in their respective field for which university should have to be well equipped with such instruments. If students would have no expertise in such things they would face difficulty in seeking jobs which will lead to financial unstable society”* and *“...If young generation is illiterate than that will be the great harm for the upcoming generation.... If the government will not spend the money on education of students then the talent of our youth will be spoiled”* and *“That’s the right of state to use money on the primary level, if they don’t do so the kids will be distracted from their paths they will use their majority or important time in wandering by this the ratio of child labor will increase and the young kids will not be able to enjoy their learning part of lives”*. The argument presents a scenario where a lack of expertise in research due to inadequate university resources directly leads to difficulty in finding jobs, which subsequently causes a financially unstable society. This argument contain slippery slope fallacy by assuming a linear progression from one problem to another without considering different factors. It oversimplifies job market, ignoring the possibility of students acquiring expertise through means other than well-equipped university facilities. Whereas, the next argument suggest that if young generation becomes illiterate due to lack of government spending education, it will inevitably result in the great harm of the upcoming generation and the spoiling of the youth’s talent. The talent development and complex nature of education is oversimplified by the student. On the other hand, student 21 exhibits slippery slope by presenting a series of interconnected events that follow a linear path from on outcome to another without considering potential options. It shows that if the state does not allocate funds to primary education, it will inevitably lead to children being distracted, increasing child labor rates, and consequently preventing young kids from enjoying their learning experiences. There is the possibility of implementing other measures to support children’s education and well-being, but that has been neglected in this argument.

If we accept the slippery slope argument as an unbiased argument, even when the forecast it makes is not impossible, it will fail to persuade the majority of the time.

Consider the argument given by (student 25) *“it is significant for countries to give their people this basic right for free otherwise country cant progress and every citizen will end up being illiterate”*, here the argument implies that without free education, the country faces inevitable illiteracy and stagnation. Alternatives that could foster advancement, despite a lack of universally free education, are neglected by the student. Another (student 31) stated that *“If the education will be free at primary level, then a common man will be able to get educated. Everyone will be able to say that he holds a degree. Literacy rate will get better but at the same time there will not be skills or talent in people. It will become very hard to find the people who were actually studying for their passion and skills as every other person will be studying the same thing with or without choice. Depression rates will decline in students. As most students are always in tension of paying fees”*. Developing countries like Pakistan undergo economic issues that make people suffer for real; illiteracy is one of the causes that takes a nation towards its downfall (Ahmad, et al., 2014). This problem, however, can be dealt with with proper reforms and plans. Even now, if we check the statistics, countless people are deprived of education, yet the country is somehow progressing. Hence, predicting the worst scenario does not imply that it will happen for sure. Secondly, there is no guarantee for a rise in the literacy rate if the government declares primary education free. There is a possibility that people may not opt for education. Also, depression is not only linked with ‘paying fees’, but rather we come across people who fall into the trap of depression due reasons, including family issues, lack of attention, etc. Moreover, (student 60) and (student 66) stated that *“...if there will be no opportunities for the child to get private education, he will not be able to get education in the higher level and he will fail in his life and wont be able to do anything good for himself”* and *“Government takes tax from public, money should be spent on higher education. It will make young students a great part of the country. Else students wont be able to benefit the country and consequently economic level of the country would be decreased resulting in overall downfall”*. At times, presenting a series of arguments can be a valid approach. However, it appears that the conclusion is not accurate. Furthermore, they tend to shift focus away from the current issue and delve into theoretical concepts. The reasoning for presenting the slope overlooks the fact that the probability of the indicated end outcome is low, considering the initial action being considered. The argument may be false if there is just a little chance that performing the relatively minor act now would lead to the relatively major event later, since it fails

to recognize this slight possibility. The arguments given by (student 73), *“Especially when education is free, the root representation of struggle is lost. The institutions lose their floors on quality as money is the driving force and especially in countries like Pakistan, resources cost a lot”*, presents a relationship between progression from free education to a decline in quality due to financial incentives. It shows that when education is free, institutions lose quality because money no longer drives excellence. The link between cost and educational quality is made vague. There could be other factors that contribute to educational standards, which seem to be neglected by the student in the argument. Another argument by (student 90) is *“As we all know...students are working by leaps and bound for the country’s progress to compete with other countries so in order to have this our government should spend the money on students and gave them free and high quality education from primary state otherwise it will leave students in disastrous state and students will end up being criminals”* here, the argument shows that without government spending on free, high quality education from the primary level, students will end up in a disastrous state and ultimately become criminals. The situation is oversimplified; a direct link between lack of education funding and an increase in criminal behavior is assumed, neglecting other factors that influence individual’s outcomes.

Next, (student 103) *“If people would not consider their education of much importance, they might just drop in the middle of the degrees and would not care about the studies anymore and this would be a lot of wastage of the state money. People from all over the area would be studying in the same place and it can create a lot of problems related to culture and ethics”*. The argument again assumes a chain reaction; if people do not value education, they will dropout, wasting state money. It also suggest that diverse people in one place will automatically create cultural issues. This ignores other possibilities to these problems. Conclusions drawn from premises are unlikely to happen. As stated by Ruscio (2006), a slippery slope is built on faulty reasoning that begins with an initial agreement or set of reasons and leads to an inevitable conclusion that is ultimately rejected. Hence, the line of “reasoning” is flawed due to the fact that there is no evidence to support the claim that one occurrence must necessarily follow on from another in the absence of an argument supporting such a claim.

To sum up, slippery slope arguments are fallacious because they rely on an unrealistic prediction about the future and must be contrasted with more convincing

arguments, such as deductive reasoning. It is illogical to assume that the premises might be true while the conclusion is false in a deductively sound argument. To rephrase, if the premises are correct and the argument follows a proper deductive structure, then the conclusion must also be correct. Feldman (2013) states the position that a strong argument should have a clear point and be easy to understand in a few sentences. Findings show that students have difficulty formulating arguments. He further states that there are a few phenomenon that may be learned from students' writings. The primary point of most essays is stated in the first sentence, which typically poses a challenge. However, not all of them are immediately followed by a definition or explanation of what they signify in the argument. Definitions, if they exist at all, tend to be written in the plain present tense. In some cases, students may write several arguments that appear related, but they fail to provide evidence of the connection between them.

Generally, students often display insufficient thinking skills. If the reasons are available, they fail to demonstrate the logical link between the argument and those reasons. Although conjunctions suggesting a cause-and-effect connection are useful, they are rarely used. As a result, the reader is left questioning the connection between the essay's unorganised statements. On the other hand, they simply replicate information from different sources without assessing its validity. The analysis of fallacies reveals that not all arguments are valid or logical. This aligns with our previous discussion on the findings regarding rebuttal skill. It indicates that students often fail to exert sufficient effort in critically analysing and evaluating the arguments they construct. The most common types of linguistic errors in argumentative essays are generalisation and the use of questionable statistics. Students frequently simplify complex arguments. The main reason why fallacies were found in this study is the lack of evidence to support the argument. Furthermore, not having enough reasons and evidence to back up an argument could mean that a student does not know enough about the topic of the essay. The students do not know enough about the topic because they cannot relate it to the real world or their own lives. This could also be because students do not read much.

In conclusion, the excerpts of each linguistic fallacy have been explained and interpreted to demonstrate how these arguments lack validity, credibility, and authenticity. It is evident that students are engaging in arguments without presenting

logical premises and reasons. The technique of persuasion can also be seen as most of the arguments are based on personal feelings, observations, and judgements. It further shows that conclusions are made based on a sample that is not sufficient. Hence, the third research question has been answered.

4.4 Strategies for avoiding fallacies in argumentative essays

In order to avoid committing faults in their argumentative essays, students must carefully scrutinise their work. Using particular strategies to enhance one's cognitive approach towards their arguments is crucial. This section of the data analysis section has examined specific strategies to assist students in properly scrutinising their arguments. These strategies serve as a comprehensive framework, equipping students with the tools they require to thoroughly examine and identify errors prior to committing them. By employing techniques, students can enhance their thinking abilities and avoid making fallacious statements.

Table 20

Strategies for Avoiding Hasty Generalising Fallacy in Argumentative Writings

Fallacy type	Strategies
Hasty generalisation	<ol style="list-style-type: none"> 1. Ensure your arguments are supported by ample evidence and examples rather than drawing conclusion based on limited instances. 2. Avoid overgeneralizing from a single perspective. 3. Use quantifying language; 'often', 'typically' to indicate the argument applies in specific instance rather than universally. 4. Refrain from making overly broad statements that claim universal truths without adequate support. 5. Provide contextual and background information to ensure that your claims are grounded in a specific context.

Note: The table provides concise strategies to help avoid hasty generalization fallacy, ensuring more reliable conclusions.

Table 20 shows effective strategies to avoid the error of hasty generalisation in arguments. It gives students a clear way to avoid making assumptions without good

support. Using these strategies makes sure that the conclusions drawn in academic discourse are more careful and based on facts. Secondly, by drawing attention to these strategies, it makes the very important point that the data points must be carefully and thoroughly looked at. This keeps students from jumping to broad or hasty judgements based on too little proof. It also makes sure that the analysis is based on reliable, proven findings. When students evaluate sources, they gain the ability to recognise trustworthy information, which ultimately results in arguments that are more credible and reliable. Conducting factual verification helps ensure the information is accurate, which in turn results in essays that are more reliable and supported by facts. Encouraging students to engage in critical thinking and rational thought helps them develop their analytical skills, which ultimately results in well-structured arguments. When evidence is contextualised, it increases the significance and practicality of the topic that is used in essays, which in turn creates a deeper understanding for the readers. All of these strategies, when combined, give students the ability to generate essays of higher quality by enhancing the credibility and clarity of their ideas.

Table 21

Strategies for Avoiding Questionable Statistics fallacy in Argumentative Writings

Fallacy type	Strategies
Questionable statistics	<ol style="list-style-type: none"> <li data-bbox="890 1238 1342 1491">1. Verify the credibility and reliability of the statistical data sources. Use reputable sources, such as government publications or academic research known for accurate data. <li data-bbox="890 1491 1342 1675">2. Cross-check statistical data from multiple sources. Compare statistics across different credible sources to validate the information. <li data-bbox="890 1675 1342 1823">3. Be cautious of statistics derived from small or biased samples that might not represent the entire population accurately. <li data-bbox="890 1823 1342 2007">4. Ensure the statistical data used in argument is current and relevant to context being discussed. Outdated data can lead to misconceptions. <li data-bbox="890 2007 1342 2038">5. Offer context around statistical

data to ensure a clear understanding of its relevance and implications.

Note: The table provides strategies to help avoid relying on misleading statistics, ensuring validity and reliability of data presented

The table 21 provides a number of strategies to ensure that students do not include misleading or incorrect numbers in their essays. For students, these strategies serve as a road map for avoiding the use of possibly misleading statistics. Incorporating strong and credible statistics into their essays becomes much easier when students follow these steps. Each of these strategies can be highly useful in improving the quality and reliability of students' argumentative writing. Students establish the reliability and credibility of the statistics they utilise by validating sources. As a result, the base of their arguments gets stronger and the general credibility of their writings is improved. Cross-referencing data from numerous sources not only reduces the risk of relying on incorrect numbers, but it also encourages students to perform extensive research, which increases the depth of their arguments. Furthermore, contextualising data within the overall argument aids readers with clarity and deeper understanding. This practise indicates a thorough understanding of the topic matter and ensures that statistical data matches with the argument's narrative, improving the essay's persuasive power. Overall, using such strategies strengthens the quality of students' essays while also developing their analytical skills, resulting in improved written work.

Table 22

Strategies for Avoiding Inconsistencies and Contradictions fallacy in Argumentative Writings

Fallacy type	Strategies
Inconsistencies & contradictions	<ol style="list-style-type: none"> 1. Carefully review your essay to identify and resolve any conflicting/contradicting statement in your argument. 2. Ensure a logical structure where each point supports and aligns with the central argument. 3. All evidences/examples in your essay must align coherently with your main argument. 4. Clearly define terms, concepts, or ideas to avoid

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- ambiguous statements that could lead to this fallacy.
5. Maintain consistency to avoid making claim that directly conflict with previous stated positions/evidences.
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Note: The table provides strategies to help students avoid inconsistent and contradictory arguments

Table 22 presents ideas for students to help them make sure their work did not have any problems with logic or consistency. These strategies help students make sure that their essays make sense and do not show ideas that are at conflict with each other. This strategy not only improves the quality of their writing as a whole, but it also makes their articles more convincing and valid. Students who do a lot of research and check their facts make sure that the information they give is correct and reliable. This makes it less likely that their arguments will be inconsistent or contradictory. An essay that is organised clearly helps students keep their ideas and arguments in line, which keeps their essays from becoming less effective. By successfully combining information, students can craft a story that flows smoothly, avoiding problems that arise when different sources or arguments are compared. Also, recognising counterarguments shows that you have a deep understanding of the subject, which lowers the risk of giving false information. Together, these methods give students the tools they need to write well-structured essays by eliminating arguments that do not make sense.

Table 23

Strategies for Avoiding Loaded Question Fallacy in Argumentative Writings

Fallacy type	Strategies
Loaded questions	<ol style="list-style-type: none"> 1. Ensure the question posed are neutral. Avoid framing question that assumes a particular stance. 2. Break down loaded questions into their constituent parts and address each separately. 3. Shift focus away from assumed premises within loaded question. Redirect argument to underlying issue rather than accepting the biased framing of the question. 4. Clearly state purpose behind

the question or argument being made. Outline the objective, it becomes easier to avoid misleading implications.

Note: The table provides strategies to help students in avoiding loaded questions in arguments

Finding and getting rid of biased wording encourages objectivity and makes sure that questions are fair and neutral. Asking clear questions removes any confusion or secret biases that could lead to biased conclusions, allowing for clear communication. Asking questions that include different points of view promotes a more in-depth conversation and stops questions from leading to fixed points of view. A deeper understanding of the question's objective also helps students think about the possibilities, leading to a more thoughtful and fair answer. Therefore, these strategies help students in creating more balanced, fair, and objective questions. This stops the loaded question error and makes their argumentative essays more convincing.

Table 24

Strategies for Avoiding False Dilemma Fallacy in Argumentative Writings

Fallacy type	Strategies
False Dilemma	<ol style="list-style-type: none"> 1. Acknowledge that issues often have more than two sides. Explore various angles and viewpoints on the topic to avoid oversimplification. 2. Clarify terms and definitions to avoid creating a binary choice where none exists. 3. Offer alternatives solutions. Show there are possibilities beyond the two extremes being presented. 4. Address potential counterarguments to your position. This way, it can be demonstrated the understanding of the complexity of the issue and show that you have considered alternatives. 5. Evaluate whether the choices presented truly encompass all available options or if there is a possibility of additional choices.

Note: The table provides strategies to help students in avoiding false dilemma in arguments

The table provides the strategies to avoid making the fallacy of false dilemma in argumentative writings. By considering alternative viewpoints, students are able to look more deeply into complex issues without reducing them to simple phrases. Students should perform extensive research to broaden their understanding and provide alternate viewpoints in order to prevent forming wrong conclusions. When asked to consider alternatives, many students are more open to compromise or finding a middle ground. As a result, their arguments take on a more reasonable and balanced tone.

Students can improve their ability to argue and avoid the false dilemma fallacy by implementing these strategies. This enhances the quality of their argumentative writing.

Table 25

Strategies for Avoiding Weak Analogy Fallacy in Argumentative Writings

Fallacy type	Strategies
Weak analogy	<ol style="list-style-type: none"> 1. Ensure that the elements being compared in the analogy are truly similar in relevant aspects to the argument being made. 2. Look beyond superficial resemblances and consider deeper connections between the two subjects. 3. Instead of relying on one analogy, use multiple analogies or examples to reinforce your argument. 4. Recognize and address any differences or areas where the comparison might not hold true. 5. Explain the connection between the analogy and the argument. Explain how the similarities between the two subjects support the conclusion without leaving room for misinterpretation.

Note: The table provides strategies to help students in avoiding weak analogy in arguments

The table presents a list of strategies that can be utilised in argumentative essays to prevent being subjected to the weak analogy fallacy. A deep level of critical thinking

is required in order create effective analogies. In order to improve the analytical skills, students go through the process of learning to analyse concepts, establish connections, and evaluate the strengths and flaws of their comparisons. Students will also benefit from it because it will help them build better analytical skills on their own. The quality of their writing will improve as a consequence of this, as it will lead to well-structured arguments and improved coherence in them. Useful analogies help to simplify difficult concepts, which in turn enables effective interaction. Students develop the ability to articulate their points in a manner that is more understandable and interesting to readers. When students implement these strategies, they not only avoid falling into the pitfalls of weak analogy fallacies, but they also build critical thinking and analytical skills, which are essential for academic writing and other areas of writing.

Table 26

Strategies for Avoiding Questionable Cause Fallacy in Argumentative Writings

Fallacy type	Strategies
Questionable cause	<ol style="list-style-type: none"> <li data-bbox="890 987 1364 1256">1. Differentiate between two things occurring together and one thing causing another. Acknowledge just because two things happen together does not mean one causes the other. <li data-bbox="890 1256 1364 1361">2. Highlight variables that may explain the observed outcomes. <li data-bbox="890 1361 1364 1518">3. Refrain from using oversimplifying complex situations by attributing causation to a single factor. <li data-bbox="890 1518 1364 1695">4. Provide clear logical reasoning behind the cause-effect relationship. Explain how/why one event leads to another based on evidence.

Note: The table provides strategies to help students avoid questionable cause fallacy in arguments

Table 26 shows the ways to write without using the questionable cause fallacy. By learning to tell the difference between correlation and causation, these strategies can help students improve their writing while also helping them become better thinkers. Second, citing credible sources makes individuals more likely to back up their claims with proof, which makes their arguments stronger. Students would be able to see that

recognising numerous variables at play leads to a more complex method of managing problems and making arguments, which results in a more complete and comprehensive essay. These strategies will help students understand the difference between correlation and causation even more. They will also improve their ability to think logically, which will help them make stronger arguments. By using these strategies, students not only avoid the questionable cause fallacy, but they also learn important skills that will help them do well in academics and beyond.

Table 27

Strategies for Avoiding Slippery Slope Fallacy in Argumentative Writings

Fallacy type	Strategies
Slippery slope	<ol style="list-style-type: none"> 1. Delineate each step in the argument without assuming an inevitable chain reaction from one event to another. 2. Provide logical progression without making extreme predictions about the future. 3. Support each claim with concrete evidence/examples. 4. Avoid overgeneralizing beyond the immediate context. Focus on specific scenario being discussed without extending the consequences to unrelated situation. 5. Make sure there is a clear connection between each step in the argument; explain how each progression is logical of the precedent point rather than an assumption based on speculation.

Note: The table provides strategies to help students avoid slippery slope fallacy in argument

Table 27 shows strategies to write argumentative essays that do not use the slippery slope fallacy. These strategies help students get better at writing in more than one way. Students improve their logical thinking skills by making logical connections and staying away from illogical conclusions. This helps them make arguments that make more sense and are better organised. Second, giving evidence to back claims makes people more likely to use reliable sources in their arguments, which makes them stronger and more convincing. Third, thinking about different possible outcomes and

staying away from extremes improves critical thinking skills, which leads students to look at situations more deeply and thoroughly. Giving clear and believable sources helps students think more critically about their arguments, which helps them write more believable and appealing papers.

So, using these strategies gives students the resources they need to make arguments that are stronger and make more sense, which improves the quality and credibility of their work.

4.5 Findings and Discussion

The study successfully identified fallacious statements in the students' essays. The study focused solely on identifying linguistic fallacies in the students' writing, regardless of their stance on the issue or their overall performance in writing an argumentative essay. The main findings of the study are presented below, followed by a discussion of those findings.

4.5.1 Research Findings

The aim of the research was to explore, determine and interpret the existence of linguistic fallacies in the argumentative essays written by undergraduate students of BS English in the third semester at NUML, Islamabad. After analyzing the data, the study successfully addressed the first question by exploring the presence of commonly used linguistic fallacies in the students' writings. The study's objective was confined to identifying linguistic fallacies in students' writing, independent of their viewpoint on the subject or their overall competence in writing an argumentative essay.

- 1) Students in their argumentative essays incorporated eight types of inductive fallacies: 'hasty generalizations,' 'questionable statistics,' 'inconsistencies and contradictions,' 'loaded questions,' 'false dilemmas,' 'weak analogies,' 'questionable causes,' and, 'slippery slopes.' The basic quantification of the fallacy is as follows: 19, 30, 11, 1, 9, 13, 8 and 15. These fallacies have been examined in relation to the context. The findings reveal that incorporation of fallacies are done by students to make an argument, without providing sufficient or valid evidence. According to Mayfield's classification (2014), the following fallacies are commonly found in students' argumentative writings.

Fallacy of hasty generalization:

“As far as I have observed, only those students succeed (succeeded) in their lives who were known from the root of knowledge” [Student 11]

Using phrases such as “as far as I have observed” and “only those” generalises the argument by connecting it to a personal perspective. The generalisation also indicates that the student has made assumptions. The argument makes a hasty generalization by assuming that success is solely dependent in being deeply knowledgeable. Success can stem from various factors like skills, networking, not just a profound depth of knowledge. Hence, the conclusion is based on a very specific group of individuals, which greatly limits its scope.

Fallacy of questionable statistics:

“According to recent survey, in our country, nearly half of the population is illiterate” [Student 25]

Phrases like “according to recent survey” and ‘nearly half’ lead to the fallacy of questionable statistics. It seems since the student failed to provide a source, assumed statistics are mentioned to make the argument sound accurate and valid. In academic writing, false evidence can lead to misconception. Hence the argument exhibits the fallacy of questionable statistics because it lacks specific detail about the survey methodology, sample size, or how literacy was defined. Without these details, it is hard to determine the accuracy or reliability of the survey’s findings.

Fallacy of inconsistency and contradiction:

“Higher education should be free for every individual but it will destroy the economy of the country. Hence it can’t be done” [Student 88]

The conjunction ‘but’ acts as a contradiction in the argument resulting in the fallacy. The student failed to stick to his own stance as the discussion has shifted from ‘higher education should be free’ to ‘but it will destroy the economy.’ The argument presents an inconsistency by initially advocating for free higher education for everyone but then contradicts itself by claiming it would damage the economy. The contradictory stance undermines the initial argument that higher education should be free for all.

Fallacy of loaded question:

“But which of these stages is more important, and should sectors really spend money on them?” [Student 75]

The word ‘should’ indicates the choice has already been restricted. Either saying ‘yes’ or ‘no’ leads to the answer that is already constructed by the writer, in this case the student. Certain premises are assumed without providing evidence or a natural standpoint. It presumes that some stages are more important, implies that sectors should spend more money on them, and frames the question in a way that suggests a biased perspective.

Fallacy of false dilemma

“The student can only be successful in his life if his base is strong. There is no use of having university level studies if the individual’s base is weak” [Student 8]

The phrase ‘can only be’ and ‘if’ shows the weak connection between two options. This shows the existence of false dilemma fallacy where the options are restricted to two possibilities only. The argument comprises a judgment and an unreasonable assumption as it oversimplifies success, degrading the possibility that both a strong base and higher education can contribute to a person’s achievements.

Fallacy of weak analogy:

“Educated people are more polite, better decision makers and well-mannered in our society as compare to uneducated” [Student 21]

Words like ‘as’ and ‘compare’ indicated the relationship between two individual stances. This argument is not supported by statistics, but rather by simple, common assumptions.

Fallacy of questionable cause:

“There are so many middle-class people who cannot afford providing education to their children so they have stopped this by increasing population so if they start getting free education they can live happily” [Student 62]

The argument implies a cause and effect relationship between the inability to afford education and increased population. The word ‘so’ shows the cause is linked to a problem that resulted in a negative effect. Hence, the claim lacks concrete evidence for a direct causal link, showcasing the fallacy of questionable cause.

Fallacy of Slippery slope:

“If the education will be free at primary level, then a common man will be able to get educated. Everyone will be able to say that he holds a degree. Literacy rate will get better but at the same time there will not skills or talent in people. It will become

very hard to find the people who were actually studying for their passion and skills as every other person will be studying the same thing with or without choice. Depression rate will decline in students. As mostly students are always in tension of paying fees”
[Student 31]

Words like ‘then’ and ‘as’ are used when the arguments are constructed by presenting exaggerated scenarios which may or may not happen in real life. Here a series of actions are provided that could result if certain actions are taken. One cannot be sure if the outcomes would actually turn out to be true merely based on an assumption.

The findings showed that students mostly incorporated inductive fallacies into their arguments when they failed to provide relevant evidence to back up their claims. This act could have been done intentionally or unintentionally. Intentionally: when the student presented own his or her assumptions but could not think of any factual proof to provide. Unintentionally: if students did not have prior knowledge of committing a fallacious statement. Hence, the above-mentioned fallacies examples validates this notion.

- 2) In the same way, the study has been successful in addressing the second question of my research. The analysis showed the frequency of frequently used fallacies in argumentative essays.

The most commonly used fallacy is Questionable statistics that sums up 44 in total. Hasty generalization (20), slippery slope (13), inconsistency and contradictions (15), false dilemma (12), Weak analogy (12), Questionable cause (10) and Loaded question (1) respectively.

There were 19 occurrences of the hasty generalization fallacy by eighteen students. There were 30 occurrences of questionable fallacy committed by twenty-six students in total, making it the highest used fallacy among all inductive fallacies. There were 11 occurrences of the inconsistencies and contradictions fallacy by eleven students. Loaded question fallacy was committed by one student. There were 12 occurrences of the false dilemma fallacy by eight students. There were 12 occurrences of weak analogy fallacy by thirteen students. There were 10 occurrences of the questionable cause fallacy by eight students. There were 13 occurrences of slippery

slope fallacy by thirteen students. To sum it up, the total number of all fallacious words marks one hundred and thirty two (126) in total.

The findings showed the fallacies of ‘hasty generalization’ and ‘questionable statistics’ have been used in large numbers compared to other inductive fallacies. The reason could be that jumping to conclusions is always easier than actually researching and analyzing a problem. Secondly, as stated by Harman (2007), since we prioritize our observations and viewpoints over facts and figures, this often leads to drawing conclusions based on a small sample. Another reason students make hasty generalization and questionable statistics because they might lack extensive experience or knowledge on a subject, leading them to make a broad assumptions based on limited information or personal anecdotes. And as for fallacy of questionable statistics, students might rely on statistics without thoroughly understanding their stance or validity. They might use statistics they have come across without verifying their accuracy, leading to flawed arguments based on potentially unreliable data. Additionally, students might not have the skills to critically evaluate statistics, making them susceptible to using misleading or misrepresented data in their argument.

- 3) Thirdly, the study has been successful in addressing the third question of the research. The analysis showed the effect of fallacies used in the excerpts.

“...people with a university degree have more experience and good credentials to earn a living as a compare to person who doesn’t have been to university” [student 23] (Hasty generalization).

Here, the student effectively developed a single premise to support the stance, but was unable to offer any more logical justifications for the claim or any supporting evidence. There are people who do not earn despite being university graduates, whereas we have university drop-outs who earn a handsome amount to live their lives (Willging and Johnson, 2009). Hence, this argument lacks proper reasoning to make such a bold claim.

“According to some studies, people who are educated and have graduated from prestigious universities are more likely to have a better living standard along with social validation” [student 6] (Questionable statistics)

Although the student made a plausible premise, we cannot be sure if the claim is valid since there is a complete absence of the source name from which their statistic is derived. Phrases like “according to some studies” create an element of doubt if a reader can consider them to be true, as not everyone could access them in order to verify their accuracy scientifically.

“Government should spend more on higher education because every type of job nowadays needs high education if the government would spend a lot of money on high education so there would be no chances of unemployment in the country but however it leads to unemployment also because if you will spend more on high education so there will be a lot of competition in the market and jobs will be less...” [Student 86] (Inconsistencies and contradictions).

Initially, the student talked in favor of spending money on higher education since it eliminates one of the leading social issues of unemployment, whereas, in later parts, he contradicts his own claim by stating that this decision will end up increasing unemployment since there won't be competition in the job market. This makes his arguments lacking in soundness and proper reasoning.

“But which of these stages is more important, and should sectors really spend money on them?” [Student 75] (Loaded question).

The question is a should-question. When asked if ‘government **should** really spend’, a respondent’s answer narrows down to a single type of answer. If the respondent replied saying ‘Yes’ it would imply that the government was not spending money before, and if the answer is ‘No’ then the respondent will be put in the spotlight. The question is fallacious because it traps the respondent, preventing him from giving a rational answer in some instances.

“...either the government of any state or country should spend more on the university education which will provide the state well-trained professionals or it won't be beneficial for the state” [student 15] (False dilemma).

In this argument, only two choices are assumed, overlooking all the other options that can be considered.

“Another reason why government should spend more money on university education is that most students that get admission in universities are those who are able to grasp knowledge” [student 11] (Weak analogy).

The reason provided by the student can be considered plausible; however, it lacks proper reasoning to draw a conclusion. Students failed to provide any evidence that proves that students with sharp mindsets are the only ones who get enrolled in universities.

“If the state spend money on university student he will focuses (focus) on his study. Secondly, nation will be happy, they will remove their anxiety of studying their children in university because most of the parent thinks that our children will not get education due to which they get (remove get) suffer from different disease” [student 33] (Questionable cause).

In this argument, the student draws the conclusion that the reason parents suffer from health issues is because their children cannot get an education due to government inadequacy. However, there may be a number of underlying causes, including infections, injuries, etc., that may cause diseases.

“States should spend money on providing facilities to students otherwise they cant build a strong background in the field they are getting education in...wont get better jobs in future that helps in the country's progress....otherwise the country will be doomed” [student 4] (Slippery slope).

Here an exaggerated chain of events or consequences without sufficient evidence is created. It suggest that if states do not invest in facilities for students, it will lead to a series of negative outcomes, such as a weak educational foundation, inability to secure good jobs, etc. This argument assumes a domino effect of catastrophic consequences without considering other potential solutions. The finding showed that sentences are embedded with weak premises, reasons, and evidence to make a claim. This results in the argument lacking validity and credibility.

- 4) Lastly, the research has also been successful in providing strategies to students for avoiding fallacies in argumentative writing.

Provide contextual and background information to ensure that your claims are grounded in a specific context. Secondly, offer context around statistical data to ensure a clear understanding of its relevance and implications. Thirdly, carefully review your essay to identify and resolve any conflicting/contradicting statement in your argument. Next, clearly state purpose behind the question or argument being made. Outline the objective, it becomes easier to avoid misleading implications. Also evaluate whether

the choices presented truly encompass all available options or if there is a possibility of additional choices. Moreover, ensure that the elements being compared in the analogy are truly similar in relevant aspects to the argument being made and differentiate between two things occurring together and one thing causing another. One must also acknowledge just because two things happen together does not mean one causes the other. Most importantly, avoid overgeneralizing beyond the immediate context and focus on specific scenario being discussed without extending the consequences to unrelated situation.

As mentioned previously in chapter three, the students who participated in the data collection process had received instruction on how to write an argumentative essay in their academic writing course. According to the English Department's catalogue, the academic writing course is worth 3 credits and aims to enhance students' skills in presenting logical reasoning, strong and convincing arguments, critical analysis, and judgement through subject-related argumentative essays. Furthermore, it is plausible that the findings of my study do not immediately apply to other settings or studies, nor are they indicative of other studies. This is due to the fact that the research was carried out under particular circumstances, including demographics, a specified time frame, a specific sample size, and the specific features of the population that was being investigated. There are certain circumstances, such as the fact that my sample size is limited to only one semester and that it is quite small on average. In spite of the fact that the findings of my investigation might not be applicable in every situation, they are nonetheless significant while taking into account the limitations of the setting in which they were examined. In addition to this, they offer insightful contributions that could serve as a foundation for future studies in broader contexts.

4.5.2 Discussion

The goal of the study was to find out if there was a link between BS English students' linguistic and logical intelligence and the quality of their argumentative writing. In particular, the study looked at how often and what kinds of evidence they used in their work. The study found that BS English students try to convince their readers in their argumentative essays by using both inductive fallacies and different kinds of evidence to support their claims. Even though the argumentative essays often had writing for all kinds of fallacies and types of proof, no statistical evidence was

found. This could mean how hard it is to find the correct statistics to back up a particular point in an argument.

The participants were asked to write an essay with a minimum word count of 250 – 300 words that included an argument and justifications. Following that, the inductive and deductive fallacies were determined using the model provided by Mayfield (2014). Each argument was identified and interpreted once the fallacies were found in argumentative essays. Lastly, the effect of fallacies on students' writing patterns was also determined. In this study, the following eight kinds of linguistic fallacies were analyzed and identified in the argumentative essays of students: hasty generalizations, questionable statistics, inconsistencies and contradictions, false dilemmas, loaded questions, weak analogies, questionable causes, and slippery slopes. According to the study's findings, students employ inductive fallacies to persuade their readers. The current study also revealed that BS English students still have problems with linguistic fallacies. The classification of fallacies is indeed very helpful for students to understand the concept of fallacy and to prevent making incorrect claims in their argumentative writing.

The conclusion that can be drawn from prior research on critical thinking is that this kind of critical thinking would seem to predict the students' overall proficiency (Saidi, 2020, as cited in Davarpanah, Izadpanah, & Fasih, 2021). In the argumentation essays, students primarily used linguistic fallacies that demonstrated they drew conclusions without giving enough evidence and that the arguments they employed were insufficient to form a sound inference. In order to make an argumentative essay more credible, it is crucial to include reliable data. This was comparable to the notion from (Gao, 2013, as cited by Lismay, 2020) where he defines hasty generalization as when an argument is based on a small number of facts or occurrences that are generalized as the cause of a phenomenon or the source of a problem. Another linguistic fallacy frequently made by students was questionable statistics. It refers to type manipulation through statistical data that is dubious in nature. Students drew conclusions based on opaque data that did not present accurate figures; hence, readers are left with an unclear understanding of it. In short, to make the premise valid and accurate, a proper source should be mentioned to make the argument sound credible.

Moreover, comparing my findings to research previously done in exploring fallacies, it differs from Indah and Kusuma's (2015) findings as their findings showed

that students' claims were mostly embedded with 'emotional appeal:' emotions were prevalent while criticizing the opponents' viewpoint. Another study conducted by Shauda (2019) showed students were more inclined towards incorporating the elements of deceptive euphemism and appeal to fear when making a claim whereas. Hence, this way, my findings are successful in filling a new aspect of exploring linguistic fallacies in argumentative writings. Argumentative writing is the most important and significant form of composition because it gives the writer the ability to persuade the reader to see things from a different perspective. This power can only be effectively acquired by a person who is well-versed in the manner in which arguments should be prepared in order to convince another individual to agree with them. In other words, words have the ability to alter people's perspectives, but in order to accomplish this, one must first be aware of the factors that cause an argument to be flawed and lose its validity. Arguments that are filled with fallacies have a higher tendency to lose their credibility. Therefore, it is important to address this issue in order to make the students aware of the fallacious statements that make their stance weak and porous in nature. The current research also suggests that teaching students the fundamentals of linguistic fallacies would help them develop their writing skills, which are a component of general language competency. Mujtaba, Parkash and Nawaz (2020) also argue that teaching students about fallacies will enable them to produce better analytical writing. Additionally, understanding the relationship between linguistic fallacies and their effect on students' writing is significant, as it will further help students make their arguments logical by avoiding justifications that are based on assumptions or opinions.

Fallacies of argument can be categorized as linguistic fallacies because they involve errors or manipulation in language that lead to faulty reasoning or deceptive arguments. Arguments rely heavily on language to convey ideas and persuade others. Linguistic fallacies exploit the nuisance of language to deceive, mislead, or weaken an argument's structure. Secondly, fallacies often involve misusing or distorting language elements such as words, phrases, or sentence structures to create an illusion of validity or to misrepresent the truth. It can also lead to misdirection as language is a medium through which logical structures are articulate, fallacies, by manipulating linguistic expressions, disrupt the logical flow and coherence of an argument. Many fallacies exploit linguistic ambiguity, using vague or ambiguous language to mislead or redirect the audience's attention away from the central issue. Also, certain fallacies rely on semantic tricks or wordplays to obscure the true meaning of an argument or statement,

making them linguistic in nature. In short, linguistic fallacies exploit language's intricate to create flawed or misleading arguments, highlighting the inseparable link between language and the structure of rational discourse. Identifying and understanding the linguistic fallacies are crucial for constructing valid arguments.

The main objective of this research was to examine the relationship between different types of linguistic fallacies and their impact on argumentative essays written by third-semester undergraduate students studying BS English at NUML, Islamabad. Additionally, it can be used in various academic levels and settings.

CHAPTER 5

CONCLUSION

The following chapter provides a general discussion on the use of inductive and deductive fallacies in written arguments before moving on to provide the study findings in light of the research questions. As the chapter ends, it offers some suggestions for future research.

Considering how complex argumentative writing is, the choice to write an argumentative essay has both academic and practical roots. Argumentation is a consistent, complex, and widely used way to talk to someone (Drid & Harouni, 2015). It is used in different ways, both in spoken and writing forms. Argumentation is an important part of being a smart person because it lets people talk about and settle their differences of opinion. When having an argument, there are many complicated parts that are part of the act of fighting itself. They further state that reasoning gets more complicated when it is presented in academic writing. It gets even more complicated when the writer is a FL or SL learner of an English language. Because of this, being able to argue effectively in a written essay is seen as one of the most important ways to judge the academic success of BS English students, because it shows how well they can think critically, make sense of evidence, and make claims that can be argued.

Conclusions can be derived from the data and research. After conducting a study on the linguistic fallacies found in students' argumentative essays, the researcher identified that there are eight distinct types of fallacies: false dilemmas, loaded questions, hasty generalisations, questionable statistics, inconsistencies and contradictions, weak analogies, questionable causes, and slippery slopes. The model of fallacy given by Mayfield (2014) helped the researcher explore the inductive and deductive reasoning fallacies made by students in argumentative essays. It also helped the researcher in analyzing the effect of these fallacies on writing.

This thesis addresses four distinct research questions. To address the initial issue, the researcher examined the most common types of linguistic fallacies observed in the sample being studied. The argumentative essays were manually reviewed to uncover examples of the eight most common types of inductive fallacies. Some of the

fallacies that were present included hasty generalisations, questionable statistics, inconsistencies and contradictions, weak analogies, questionable causes, and slippery slopes. The researcher presented the selected excerpts in a tabular format, along with the corresponding student numbers. As for the second question, the researcher calculated the frequency of each fallacy using *AntConc* software. Words like ‘many,’ ‘other side,’ ‘according to,’ ‘research,’ ‘because,’ ‘fact,’ ‘about,’ ‘most,’ ‘such as,’ ‘argue,’ ‘reported,’ ‘compare,’ ‘all,’ ‘only,’ ‘none/no,’ ‘everyone,’ ‘just,’ ‘some,’ ‘must,’ ‘otherwise,’ ‘so,’ ‘then,’ ‘else,’ ‘however,’ ‘therefore,’ ‘though,’ ‘if,’ ‘or,’ ‘either,’ ‘so,’ ‘as,’ ‘hence,’ ‘compare,’ ‘so,’ ‘reason,’ ‘due to,’ ‘because,’ etc. are identified and mentioned along with the number of their frequencies. Next, as for the third question, the researcher analyzed the selected excerpts of all eight fallacies by descriptively identifying the weak premises and reasons that are used to make a claim by the students. Each fallacious excerpt is being analyzed and interpreted. Lastly, the research has also provided strategies regarding every fallacy used to avoid making fallacious arguments in the argumentative writings of the students. It works as a framework where students can comprehend how they can make claims that are not faulty in nature, and the readers will be able to consider their arguments valid and credible. There will not be any element of doubt in the stated arguments.

In addition, there was a link that was identified between the learners’ reasoning intelligence and the informal fallacies that they used, which appeared to be significant but was just a weak association. It is important to note that despite the poor reliability, the significance of this relationship should not be ignored because such a correlation might be important when it comes to educational research (Hatch & Lazarathon, 1991). Hence, it is established that the students’ capability to deliver arguments in the non-standard argument group differs significantly. This indicates that the majority of students are only able to produce two premises or more. But they are unable to present the required number of reasons and evidence in order to construct a standard argument. In addition, students continued to commit a number of logical fallacies when they presented their arguments, with rapid generalization and questionable statistics being the two linguistic fallacies that occurred the most frequently in their argumentative essays. In addition, a lack of knowledge and a lack of concepts are the three primary factors that contribute to the occurrence of these phenomena. As a result, instructions about the organization of an argument must be carried out in a precise manner. The

lecturers should give exposure on how to avoid fallacies and structure logical arguments in an effective manner.

The fact that students have a limited and basic understanding of fallacies is something that has to be addressed. Addressing inductive and deductive fallacies is an important part of teaching students how to generate writing with sound reasoning, and teachers should be more concerned with this. When students have at least some familiarity with the concept of a fallacy, it will be much simpler to bring to their attention the possibility that their line of reasoning may contain one. They will be able to write an argumentative essay that is free of fallacies with the help of this information. They will not be misled into believing anything that is not true because of this information, which will help them become more cautious when passing judgment on the statements made by others and prevent them from being misled.

Moreover, students who study argumentative essays may benefit from getting explicit instruction on fallacies (and the taxonomy of fallacies) as a practical step towards filling the knowledge gap in their understanding of logic. They will be made aware of numerous kinds of linguistic fallacies and will be able to abstain from making similar mistakes in their own work if they study examples of sentences that include fallacies and see other examples of such sentences. This strategy, when linked with the instruction of basic writing skills, will lead to improved written products that not only adhere to all of the rules of argumentative essays but also demonstrate a valid claim as a consequence of reasoning that is devoid of fallacies.

In addition, it is very beneficial to have students analyse a piece of writing that has been found to have fallacies. An effective technique to explain how authors can manipulate a reader's thoughts and emotions is to assign the reading before they learn linguistic fallacies. This should be done before they begin their study of linguistic fallacies. It is possible to demonstrate student learning by comparing the students' responses to the argument both before and after they have received instruction on fallacies. It is possible that students connected with a piece of writing before they recognised its flaws, but they may have an altogether different reaction later on. Political discussions are another excellent source of information due to the fact that politicians frequently utilise either/or, strawman, red herring, and ad-hominem arguments. Students can have a better understanding of the human nature and the frequency of fallacies by viewing short video clips of political interviews or debates with a variety of politicians. Lastly, it is important for students to comprehend that the

existence of a linguistic fallacy does not automatically render an argument invalid. Even while those who debate should make it their goal to avoid fallacies, they do occur from time to time despite the best efforts of arguers (Monica, 2017). The student should not only be able to recognise and comprehend the fallacy when it is presented to them, but they should also be aware that it may be only one weakness in an otherwise well-constructed argument. The more they are able to recognise these fallacies, the more they will be able to guarantee that the evidence they employ in their own persuasive writing is of the highest quality and contains as few errors as possible.

In conclusion, the presence of fallacies in students' argumentative essays can provide valuable insights for teachers, especially writing instructors. This knowledge can assist them in guiding students to develop more solid and logically sound argumentative essays, devoid of any fallacies. In this case, teachers can inform students about the errors in their reasoning and provide them with additional strategies to incorporate different types of evidence in their arguments.

5.1 Suggestions for Future Research

After achieving the goals mentioned in the introduction of this work, the findings and limitations have opened up new research perspectives. Following is a list of some recommendations that the researcher has for this study, which are based on the research and explanations given above:

1. The researcher recommends that academics implement instruction on inductive and deductive fallacies into the essay-writing process so that students graduate with the ability to provide a convincing argument backed by solid evidence.
2. Students who are studying argumentative writing might be considered to be taking a practical step to bridge the gap in their understanding of logic if they are clearly instructed on fallacies and introduced to them in the classroom setting.
3. Future researchers may replicate the current investigation at other universities that offer an English course. Such practice can provide a more thorough understanding of the learning and teaching of argumentative writing in BS English programmes. The information

gained can then be used to enhance writing programmes in academic settings.

4. Future researchers may also incorporate the strategies explained in the data analysis chapter of this thesis to equip students with effective tools to avoid linguistic fallacies, thereby enhancing the rigor and persuasiveness of their argumentative writings.

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APPENDIX A

HASTY GENERALIZATION

The examples of hasty generalization fallacy used in argumentative essays.

Participants	Hasty generalization fallacy
Student 1	“On the contrary, more funding for universities brings financial issues because highly professionals may go to other countries and work for foreign nations. Therefore the primary education or the building blocks of higher education is to be funded more for financial sustainability”
Student 4	“Money is also needed for the development of new facilities and departments. Without the development of those departments, our nation would be unable to flourish in those fields. Hence all nations should spend money on these departments”
Student 7	“Students join university to do a major in the specific field. So more qualified teachers are required in the university level as compared to primary level of education. University is time for students to apply the learned knowledge too. In this way, they will be able to enter into practical life. Therefore, it can be concluded that universities demand more money in comparison with schools”
Student 11	“As far as I have observed, only those students succeed in their lives who was known from the root of knowledge”
Student 14	“Educated people can cope with every situation effectively”
Student 23	“Lastly, people with a university degree have more experience and good credentials to earn a living as a compare (compared) to person who doesn’t have been to university”
Student 24	“University level education is far more important than primary education because it is the level where students choose their career options. So this level of education decides their future. So if is better for state to spend money on university education as it give benefits to the students as well as to the country”

- Student 30 “If country want to excel, there must be a generation educated enough to work hard and efficiently. Many students these days are depressed and experience anxiety when facing challenge of education expenses. Hence education ignites depression in all students. As student from a lower or middle class of our society faces this anxiety the most when it comes to education fee”
- Student 39 “Most importantly prime education is base and if your base is strong than you can shine brightly and can be beneficial for your state. Hence, I am strong in favor of spending money on primary education. Primary education is the root and if the root are strong, plant can grow and provide fruits. Spending money on primary education and making the base strong can definitely produce shining stars for future. Hence, only those students can survive in university whose bases are strong”
- Student 56 “On the other hand at primary level there is less expenses, books prices are low, no research work, and no gadgets so at that level almost everyone can afford”
- Student 69 (a) “As the number of good universities are less, a child getting higher education is much more likely to survive in this world”
- Student 69 (b) “On other researchers it is highlighted that when a country spends money on the educational system, they get rapid progress. Hence all countries progress after spending money one educational system”
- Student 72 “As I earlier stated that there are some people that argue about this formation of a child while spending money on primary level but I would personally suggest that state spend more on university because in my personal opinion I learn a lot on University to pursue my career. Hence, University is the only place that polishes skills”
- Student 73 “Most of the students got their studies right after primary education. Some critics blame high tuition fees as major

- reason behind this attitude, but more students willingly great their own studies without financial pressure. Hence spending too much finances or something that will eventually be loved and utilized is utter foolishness”
- Student 74 “All the university graduates are more competent as compare to students who have secondary degree but the quality of those students who just have university degree is negligible compared to students who have just passed education and making earning of it”
- Student 79 “So, according to my opinion government should spend money on universities because universities demand for more resources that any other education level. Only students who wants to study and achieve their goals through higher studies can get admission in universities”
- Student 82 “It is the basic right of every individual. Educated mind is considered far more powerful and strong than an average mind. It is important for everyone to be educated so that it would be helpful for the country and upcoming generation. For this reason a country should invest in education”
- Student 92 “University students have extraordinary professional skills as compared to a primary student. It helps them to succeed in life with enjoyable and highly competitive careers. Those who don’t get enrolled in universities, lack all the success hence university is the reason youth excels in life as it delivers education that is recognized worldwide and has a higher value than primary or secondary education”
- Student 97 “Education should be the first priority of the state as educated people can contribute more to their state than an illiterate person, so all those states that lack educated people, can’t boost their economy”
-

QUESTIONABLE STATISTIC

The examples of questionable statistic fallacy used in argumentative essays.

Participants	Questionable statistics fallacy
Student 1	“Furthermore, it is better for the government to govern primary education because it has a higher ratio of enrollment”
Student 3	“According to the scholars, a state should spend money on university education”
Student 4	“One may argue that primary level education is also important, as it builds the foundation of child. Although there is no denying the significance of quality primary education, it is worth noting that it doesn’t actually require much money”
Student 5	“According to studies and reports, people who are educated and have been graduated from prestigious institutions are more likely to have a better living standard along with social validation”
Student 6	“Countries such as Australia and United States have the top ranking universities as per the record of 2017 because they spend money on their higher education”
Student 10 (a)	“To elucidate, many European countries accept the importance of higher education and provide free higher education to their students”
Student 10 (b)	“Researchers argue that in Pakistan, the problem regarding primary education can be solved by just the approval of one curriculum in all educational institution”
Student 12	“But considering the fact that primary education is already not too expensive in our country, we can say that it is better for the government to spend more money on higher education”
Student 13	“About 75 – 80% of our student visas got rejected or different western countries. To overcome this we need to spend more on secondary education”
Student 17	“The infrastructure for higher education is also very expensive but it in turn can only produce limited

- amount of specialists, while primary education is cheap and has the capacity to ensure millions”
- Student 22 (a) “Many people after doing their matriculation gets indulged in drugs and other illegal activities as they cannot find the best place where they can use their full potential”
- Student 22 (b) “On other side of the story there is this matter of fact that countries invest too much on higher education and ignores primary”
- Student 25 “According to recent survey, in our country, nearly half of the population is illiterate”
- Student 26 “Educational system in our country is poor as compare (compared) to other countries. They spend more money on education while we spend more money on defense systems”
- Student 29 “In Pakistan, university education is not easily accessible to everyone, due to numerous hurdles. Its reported that, most of the rural areas in Pakistan don’t have proper institutions to achieve this purpose to provide higher level education”
- Student 35 “After several research, the state has come to the condition that many children are not given education because their parents can’t afford the school/university expenses. On the other hand, some student dropout from universities as they were not able to able pay their fees to the institution”
- Student 37 “According to some survey, 40% of Pakistani students cant continue to get higher education due to high fees”
- Student 41 “Unfortunately, universities and their students are neglected more than primary”
- Student 44 “According to some research in Pakistan, the average cost of building a primary school is about 50 to 60 lacks”
- Student 51 (a) “The opponents say that in this way the economy would fall. However, if proper planning is done and government make better plans so the government should invest in primary education so that most people could get

- access to education. The opponents say that in this way the economy would fall”
- Student 51 (b) “It is a well-known fact that University take much more investment than setting up primary sector”
- Student 54 “Socially a country can also be benefited because a person with more Intellect can make a society a better place to live. There will be less violence in a country and every citizen who had studied can prove to be useful”
- Student 56 “On the other hand at primary level there’s only some kind of practice speaking, writing and listening. If state invest on students of university, they will return it back immediately within few years. There is less chance that university student left Institute on another thing”
- Student 61 “One more thing is that the students leave education at school level five after school because of primary level nobody focusing on school and you do this many children are out of control”
- Student 64 (a) “Primary sector should be aided properly. There are many arguments in this regard and the prominent argument is that higher education system produce export of the field, therefore they must be getting more funds than primary sectors”
- Student 64 (b) “Secondly it is also said by the experts that better resource centers and laboratories should be built in order to boost the research work in the country. This argument is refuted by saying that research centers should be built however, more funds should be reserved for the primary sector and it should be spent on the basic learning to clear the concept of students”
- Student 76 “Research has found that primary education is more progressive as it supports lower income households”
- Student 83 “However the university students lack even the basic necessities such as computers and online libraries. This has become one of the major reasons

Student 88	why university students cannot show potential in their studies” “The major reason for illiterate countries is that their most of the population cannot get the basic primary education”
Student 100	“It is reported that efficient university graduates become dedicated bureaucrats”

INCONSISTENCIES AND CONTRADICTIONS

The following table shows the examples of inconsistencies and contradictions fallacy used in the argumentative essays.

Participants	Inconsistencies and contradictions fallacy
Student 2	“Although a state should spend more money on higher education, it is not possible keeping the current economic state of Pakistan. Pakistan’s economy is not in stable condition and spending more money on higher education can lead to its decline even more”
Student 14	“Spending money on higher education will promote a sense of responsibility and ethical attitude among people. They will be more cooperative towards each other and a feeling of comradeship will be created as well. But every coin has two sides, we cannot adopt a biased attitude towards higher education”
Student 19	“Primary education can be easily dealt with even much lesser budget as compare to universities. Primary subject don't require much sophistication and are much easy. However, we cant neglect it”
Student 29	“University education is important to obtain in a specific field. Though it is not mandatory to get this level of education because anyone with primary and secondary education is able to work and start a business because the minimum level of education to understand basic principles of life are already learned”

- Student 48 “Free education will make student tranquil. Fees and tuition burden are actual tensions that are pursuing student while in their academic career. This tension retard their mental growth, and trepidation is always there is their mind. In my perception, free education will enable them to focus more on their academic career. To create a mental health generation therefore it is good idea to allocate special amount of budget. However, free education is not always fruitful, free education means pay greater amount of budget to education institution. Not free education is basic right. Facilities of health, modern roads and technology and many other are also the goals of government”
- Student 56 “It must be provided by the state free of cost at every level but there are some economic issues for every country that it cannot provide at every level”
- Student 81 “Some people argue that if the state spend money on higher education then the money has to come from somewhere. However it is obvious that the money will come from Taxes. Therefore it will affect the society however graduates would provide more income to the state because of skills that they have gotten from universities”
- Student 86 “Government should spend more on higher education because every type of job nowadays needs high education if the government would spend a lot of money on high education so there would be no chances of unemployment in the country but however it leads to unemployment also because if you will spend more on high education so there will be a lot of competition in the market and jobs will be less so it can lead to unemployment as well”
- Student 88 “Higher education should be free for every individual but it will destroy the economy of the country. Hence it can’t be done”
- Student 71 “It can be argued that our university education is equally important to live.

Student 73	<p>But many people have lived successful and content lives with just primary education”</p> <p>“The divisions into primary, secondary and higher education have helped us in determining that which part is a basic requirement and which one is a burden. Both primary and higher education are of their own importance. However realistically spending too much money on board can become a burden especially in countries like Pakistan”</p>
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FALSE DILEMMA

The following table shows the examples of false dilemma fallacy used in the argumentative essays.

Participants	False Dilemma fallacy
Student 3	“A state shouldn’t spend money on primary education because at that very young age, there is not as much requirement of facilities and skills as higher education”
Student 6	“Primary level education can be run on private level but there is a need to spend money on university education if we want our universities in the list of top 100 universities in the world”
Student 8 (a)	“The student can only be successful in his life if his base is strong. There is no use of having university level studies if the individual’s base is weak”
Student 8 (b)	“Only through this we can give direction and shed light on all will result in development of country. If one get enough education in primary they are would have more into the progress of one’s country”
Student 15	“In conclusion either the government of any state or country should spend more on the university education which will provide the state well-trained professionals or it wont be beneficial for the state”
Student 16	“In university education, there are few subjects that require proper laboratories, equipped with modern technology. Students will only be able

Student 42	to have a good learning environment if they have facilities” “If a state possess a lot of advanced technology, their industry and economy will grow. So government should spend more money on university education if it wants to maintain country’s prosperity”
Student 91	“So to conclude either the government should spend money on primary education or let its youth lead to the road of destruction where they won’t be able to excel in their life”
Student 94	“For any country to grow its economy, it is necessary for them to have well accomplished engineers, doctors, etc. only when the universities from where they are trained are accommodated for this task otherwise the country’s economy will be put at stake”

WEAK ANALOGY

The following table shows the examples of weak analogy fallacy used in the argumentative essays.

Participants	Weak analogy fallacy
Student 3	“The children of primary education require more love and attention rather than fundings, whereas, the students of university education need a lot of fundings because they are future of the country. So, a state should invest in university education”
Student 5	“Spending finance on the primary is an investment for state’s future. The children will ultimately govern the state so spending on the children wouldn’t be a bad choice”
Student 9	“If we wanted to check that, country is developed or not, we pay attention and check the technologies used in that country. Technology provides evidence that is country is developed or not, so we should pay more money on university education”
Student 11	“Another reason why government should spend more money on university education is that most students that get admission in

- universities are those who are able to grasp knowledge”
- Student 15 “Primary education is not the last stage but the initial stage and one can improve with passage of time. However, university education is the last and should be given proper learning”
- Student 16 “Primary education is the level of education and it is not very much demanding. The subjects taught at primary level do not require modern equipment. Young students have to go a long way before entering practical life so they don’t need as much skill development as university students”
- Student 17 “Primary education is necessary to develop and nourish a person while higher education is more about specializing in field so you can get a job in it. It is more important for you to be a better human being than to have a better job”
- Student 21 “Educated people are more polite, better decision maker and well-mannered in our society as compare (compared) to uneducated”
- Student 29 “Finally government should build more universities so students get more option to choose their career. If there are more universities or more seats are available for students then they will be able to earn in their future”
- Student 37 “Contrary, primary education is very low and is affordable to most of people. Hence there’s no need to spend money on primary level”
- Student 42 “Fees of schools are quite less as compared to fees of university education. So it is easier for people to afford it”
- Student 49 “Although education gives are equal rights to every category of individuals. However university level education should also be considered critical but higher education makes a man mature, even though students are mature enough, they have the understanding of adults”

Student 54	“Primary education however needs less of the economy of any country and can be gained easily so it should not be giving more importance over university”
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QUESTIONABLE CAUSE

The following table shows the examples of questionable cause fallacy used in the argumentative essays.

Participants	Questionable cause fallacy
Student 1	“The state funding for primary education does not bring financial problem for the country because there students are immature and unaware about world”
Student 30	“The fact that there is no fund from the stable to facilitate students with their education fee it one of many reasons why students are not doing their best in their currently enrolled degrees”
Student 33	“If the state spend money on university student he will focuses on his study. Secondly, nation will be happy, they will remove their anxiety of studying their children in university because most of the parent thinks that our children will not get education due to which they get suffer from different disease”
Student 37	“Students quit studies after getting secondary education and reason is that they cant afford high fees. Many talented students fail to continue their education due to this issue hence country loses bright students”
Student 43	“In state like Pakistan, it may not be better to spend money on university education. The reason is that all the universities are teaching old syllabus and they are not focusing on skills”
Student 61	“In our country government is not focusing on primary education so the children have no basic knowledge about anything”
Student 62	“There are so many middle-class people who cannot afford providing education to their children so they have stopped this by increasing population

Student 90	<p>so if they start getting free education they can live happily”</p> <p>“The government schools have no good administration system and buildings and labs aren’t in proper condition. It is not easy for the teachers and staff so that’s why our education rate is declining day-by-day”</p>
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SLIPPERY SLOPE

The following table shows the examples of slippery slope fallacy used in the argumentative essays.


Participants	Slippery slope fallacy
Student 3	<p>“States should spend money on providing facilities to students otherwise they cant build a strong background in the field they are getting education in and students wont get better jobs in future that helps in the country's progress. Students are the future of country. States spend money on their higher education, provide them with facilities and help them in developing skills, they can be very helpful in helping the country otherwise the country will be doomed”</p>
Student 14	<p>“While others dare to disagree because if the money is not spent on basic education then the students will lack basic concepts and will not be able to work properly in future life”</p>
Student 12	<p>“Spending more money on university education is way more beneficial and advantageous else students won’t be able to graduate and contribute to improve the economy of our country”</p>
Student 18 (a)	<p>“Higher education is more expensive compared to the primary education, so even though the students complete their primary and early education, they are unable to support their higher education and eventually they are forced to quit it”</p>
Student 18 (b)	<p>“And if the government do not spend much on higher education, the students will lack important instruments and facilities which will in turn downgrade the quality of education in the country”</p>

- Student 19 “Moreover students at university are the youth that would be seeking jobs in near future. In that regard that would require expertise in research in their respective field for which university should have to be well equipped with such instruments. If students would have no expertise in such things they would face difficulty in seeking jobs which will lead to financial unstable society”
- Student 21 (a) “Knowledge of youth decides the future of state. If young generation is illiterate than that will be the great harm for the upcoming generation. Students are the building blocks of every nation. If the government will not spend the money on education of students then the talent of our youth will be spoiled”
- Student 21 (b) “That’s the right of state to use money on the primary level, if they don’t do so the kids will be distracted from their paths they will use their majority or important time in wandering by this the ratio of child labor will increase and the young kids will not be able to enjoy their learning part of lives”
- Student 25 “In the end, I would say it is significant for countries to give their people this basic right for free otherwise country cant progress and every citizen will end up being illiterate”
- Student 31 “If the education will be free at primary level, then a common man will be able to get educated. Everyone will be able to say that he holds a degree. Literary rate will get getter but at the same time there will not skills or talent in people. It will become very hard to find the people who were actually studying for their passion and skills as every other person will be studying the same thing with or without choice. Depression rate will decline in students. As mostly students are always in tension of paying fees”
- Student 60 “On the other hand if there will be no opportunities for the child to get private education, he will not be able to get

- education in the higher level and he will fail in his life and wont be able to do anything good for himself”
- Student 66 “Government takes tax from public, money should be spent on higher education. It will make a young students a great part of the country. Else students wont be able to benefit the country and consequently economic level of the country would be decreased resulting in overall downfall”
- Student 73 “Especially when education is free, the root representation of struggle is lost. The institutions lose their floors on quality as money is the driving force and especially in countries like Pakistan, resources cost a lot”
- Student 90 “As we all know that we are living in a state which is under developing and its students are working by leaps and bound for the country’s progress to compete with other countries so in order to have this our government should spend the money on students and gave them free and high quality education from primary state otherwise it will leave students in disastrous state and students will end up being criminals”
- Student 103 “If people would not consider their education of much importance, they might just drop in the middle of the degrees and would not care about the studies anymore and this would be a lot of wastage of the state money. People from all over the area would be studying in the same place and it can create a lot of problems related to culture and ethics”
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APPENDIX B**TO WHOM IT MAY CONCERN**

It is to certify that I have checked the data coding done by Ms. Sania Ali, Registration No. 827-MPhil/Eling/F20, and found it correct.


Dr. Muhammad Yousaf
19/01/2023

APPENDIX C

Student 1

Name	=	Kaleem ullah
Class	=	3c
Shift	=	morning
<p>Is it better for the state to spend money on primary education or higher university education.</p>		
<p>Education is the most valuable assets of human being in society. Every individual has rights of education. In addition, the states funding for primary education or higher education is still debatable. The state should spend money on primary education not higher education because ^{university} education can cause serious issues, such as, quality of education, reducing enrollment rate and financial sustainability.</p>		
<p>Similarly, the quality of higher education is crucial for professional markets. Further the university of Shanghai conducted a survey on university world</p>		

and ~~concluded~~ concluded that 21 out of 100 were universities funded by state and ^(Academic university funding) rest were partially funded by states. The higher the state funding for education for higher education the lower will be ranking. But on the other side primary education does not have these problems.

The state funding for primary education does not bring financial problem for country because these are students who are immature and unaware about world. In contrary, more funding for university bring financial issues because ~~the~~ highly professional may go to other countries and work for foreign nation. Therefore the primary education or the building blocks of higher education is to be funded more for financial sustainability.

The funding of state is crucial for education but the more ~~the~~ spend on higher education bring low enrolment of students (UNESCO 2014).

Furthermore, it is better government
to primary education because it has
higher ratio of enrollment in institution
than university, and the primary is
building block of high professional.

Student 2

Quiz

Name: Eisha Rao

Class: 3-C

Shift: Morning

Date: 28th Sep, 2022

Subject: Academic Writing

Essay Writing

Q: Is it better for the state to spend money on primary education or higher education?

It is better for the state to spend more money on higher education than primary education. Spending more money on higher education means more facilities for the students who are in universities and are the future of the country.

Spending more money on higher education means to make the education free of cost or less costly, more facilities, better teachers, all equipments and instruments required for practicals and co-curricular activities.

Education is the basic human right. Every human being deserves to get higher education but nowadays it is very difficult to access it. Many people cannot get education.

because it costs them a huge amount of money. Keeping in view the situation of Pakistan, a number of people can't afford the university fees. ~~Because~~ This is the root cause of the low literacy rate of Pakistan as people can't afford so they prefer to work at early age instead of spending money on getting education. If the ~~educati~~ higher education is made free than it will be accessible to all and will also increase the literacy rate of Pakistan.

Apart from making the education free, the state should also spend more money on higher education. Higher education requires more exposure and facilities. State should spend more money on providing the facilities to students so they can build a strong background of the field they are getting education in. This will help the students to get better jobs in future and help in the progress of the country.

Co-curricular activities ^{such as sports} are a necessity. Government should also focus on spending money and providing

facilities for the students who are good at sports. At university level the students can get good exposure and gather experience and play for country at international level.

Students are the future of a country. If a state spends money on their higher education, provide them with facilities and help them in developing skills, they can be very helpful in helping the country. Skillful students of each any field are an asset to the society.

Although a state should spend more money on higher education, it is not possible keeping the current economic state of Pakistan. Pakistan's economy is not in a so stable condition and spending more money on higher education can lead to its decline even more. Pakistan needs to get its economy stable first and then prepare a budget for education.

A state shouldn't spend more money on primary education because at that very young age, there is not as much requirement of facilities and skills as higher level. Also,

primary education is less costly than higher education. It is better to spend more money on higher education so that the state produces skilled and knowledgeable students.

In conclusion, I would say that the state should spend more money on higher education keeping in view the future of students and state so that those skilled students can help the country.

Student 3

Date: _____ Page: 1

Academic Writing

Faiza Shahid
3rd Semester
C section

Topic:-
Is it better for the
state to spend money
on primary or secondary education?

Outline

- Introduction
- Paragraph 1
- Paragraph 2
- Paragraph 3
- Conclusion.

Introduction

Government plays important role in the development of the country. Nowadays, government is working on the every issue of the country. Among all

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issues, education gets most of the attention. Now, the issue is that where should government spend money, ^{on whether} primary education or university education. According to the scholars, a state should spend more money on university education rather than on primary education.

The money spend on university education will be elites to a society. The students of universities are able to understand difficult knowledge. These students are the future of the country. ^{for instance,} The student of medicine can discover a life saving drug, same as the student of accounting can contribute in country's economic growth.

Date: _____

University education needs more facilities than are in primary education. More equipments are required in university. For instance, a student who is enrolled in the programme of aircraft, must have knowledge on the physics and balance, whereas the student of medicine must have proper equipments to practice. All these university equipment costs a lot and a university cannot buy it without financial support of the government.

Sports is also a main issue in universities because of ^{the} lack of government fundings in universities. Sports is very important for the youth of our country. Sports play highly incredible role in the development of the personality

Page 2

Date: _____

of a student. These students are gem of country. The future of the state is in the hands of these students, so it is important for these students to stay healthy.

Conclusion

The children of primary education require more love and attention rather than fundings, whereas, the students of university education need a lot of fundings because they are for future of the country, so, a state should invest in university education.

Student 4

QUIZ - ARGUMENTATIVE ESSAY	
Name:	Fatima Salman Siddiqui
Class / Section:	3-C
Shift:	Morning
Qs. Is it better for the state to spend money on primary or university education?	
Outline	
1. Introduction	
- Importance of investing in education.	
- Both levels demand money and resources.	
2. University education.	
- Money is needed for research.	
- Also needed for development of new facilities.	
3. University teachers should be highly paid.	
- If not, they will leave, & brain drain.	
4. Primary education is ^{also} important, but -	
- It does not require as much money.	
- More important to develop children's confidence & creativity.	
5. In conclusion;	
- The state must spend more on university education.	

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ESSAY.

Education is the fundamental building block of a nation, and it is of utmost importance for the state to invest money in it. It is only through quality education that a country can produce capable individuals who would excel in every sphere of life. However, when a country - like Pakistan - already has limited resources, there is a ~~dilemma~~ dilemma about whether the state should spend money on primary or tertiary level education, as both sides demand attention and resources.

I think it is more important for the state to spend money on university level education, because it requires money for research. Carrying out research is a crucial part of higher education, and the absence of funding should not hinder people from academics from carrying it out. Money is also needed for the development of new facilities and departments. Without the development of those departments, our nation would be unable to flourish in those fields.

Another critical reason why university level ^{needs more money} education is the payscale of university teachers. All university teachers are highly qualified individuals, and it is essential for them to be well paid; otherwise, they would leave the country and seek employment in other countries where they would earn better pay, causing brain drain. Moreover, university education is quite expensive, and the vast majority of the country's population is unable to afford it. Spending

The state spending money on it for scholarships and grants would make it more accessible for people.

One may argue that primary level education is also important, as it builds the foundation of a child. Although there is no denying the significance of a quality primary education, it is worth noting that it does not actually require much money. In those foundational years, it is more important to develop a child's confidence and enable his/her creativity. Providing children with expensive toys and resources for the sake of their education is not only unnecessary, but may also spoil them in the long run.

To conclude, it is better for the state to spend money on university education than primary education, as the nature of university education requires more resources. While primary education is no less important, it requires less money. Hence, the state should invest more of its resources on university level education.

Student 5

Ayesha Gayyum
3C
Morning

Education is said to be the most powerful weapon of the world and it has great influence on an individual's life. It is the ultimate source which leads a person to success. Education plays a vital role in a person's academic, social and career life. According to studies and reports, people who are educated and have been graduated from prestigious institutions are more likely to have a better living standard along with social validation.

In the modern times, there is a constant race and competition going on among people and to cope up with it, it is essential for us to spend finance on the education sector. Now, the debate arises upon the different age groups that require education. Talking about primary students it is necessary for us to develop skills and promote healthy student learning environment for the young pupils. The students of primary standard are the future of the particular state. They need to learn in an environment where they have all the facilities they need. Primary class students should be introduced to new technologies and new learning methodologies in-order to train them.

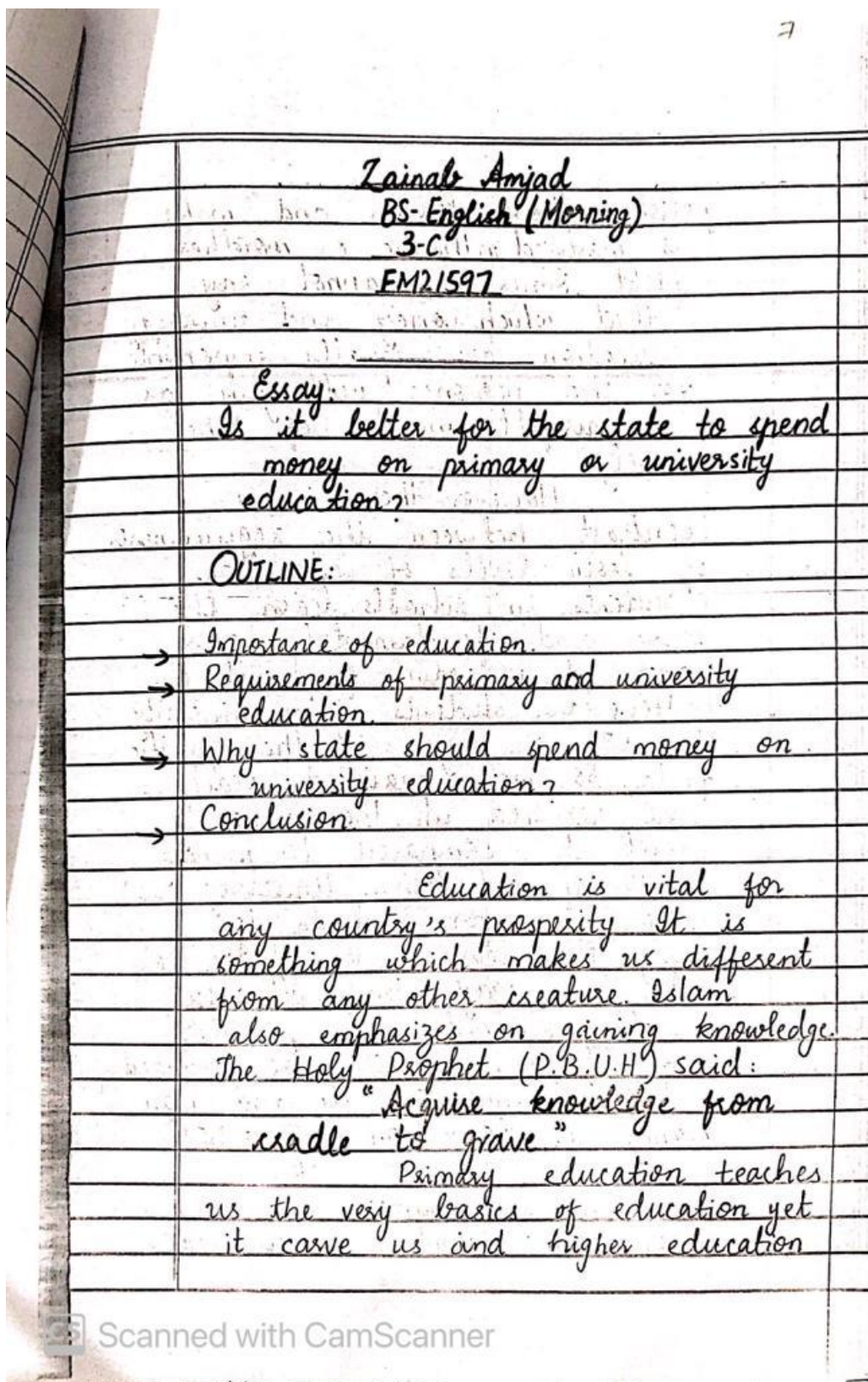
to have a better insight of future. Spending finance on the primary is an investment for the state's future. The children will ultimately govern the state so spending on the children wouldn't be a bad choice.

On the contrary, it is a fact that university students can not also be ignored at any cost because as soon as they graduate and finish their academic life, they are going to step in the career life. They will be a part of the market and they will earn which would uplift the state's economy. Their income would promote increase in the national income of the state which can help in the development of the country. The fresh young minds would work effectively and their ideas would lead the state in the right direction. Hence, it is important and advisable to the state to spend upon university education. The graduates should be taught skills that are needed in the modern world today. Better technologies such as multi-medias and fast responding machines should be introduced. A comfortable environment

would help children learn better or at-least the students would start liking to attend classes. The young, primary level students on the other hand can too be facilitated if the university students perform well in their relevant field.

In conclusion, it won't be wrong to say that university-level students should be given priority. Their education will be the source of development for the younger generations. If the graduates perform better today, their earnings can help ~~to~~ the young ones tomorrow.

Student 6



polishes those basics and make us masters in one or another field. Thus, we can say that primary and university education are equally responsible for the person's upbringing as a useful member of the society.

However, there is a contrast between the requirements of both levels of education.

Students in schools learn the basic and fundamental course and it is same for all. On the other hand, students join university to do a major in the specific field. So, more qualified teachers are required in the university level as compared to primary level of education. University is the time for students to apply the learned knowledge too.

In this way, they will be able to enter into practical life. Therefore, it can be concluded that universities demand more money in comparison with schools.

In Pakistan, we can see numerous schools whereas the number of universities

are less. It is the need of
hours to built more institutions
of higher education. University
students require experimental
equipments in order to practice
and apply the learned knowledge
and the cost of these equipments
are indeed, very high. For example:
If a person is doing masters in
Computer science so, there must
be on campus computer labs
available to him to implement the
knowledge. If state spend money
on university level, it will prove
an investment rather than an
expenditure because the university
graduates will be the future of
our country, running the
economy and other state's
affairs.

Primary level education
can also be run on private
level but there is a need
to spend money on university
education if we want our
universities in the list of top 100
universities in the world. Countries
such as Australia and United States
have the top ranking universities
as per the record of 2017
because they spend money on their

higher education.

To occupy a sustainable education system, it is more convenient for the state to spend more money on higher education.