Research Report

Teaching-Learning Practices in Higher Education: An Exploratory Study at University Level in Bangladesh

Submitted to

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ABSTRACT

This research aims to investigate the present teaching-learning practices of public universities in Bangladesh. The study followed the survey method for data collection and a total of 98 questionnaires were analyzed giving a response rate of 90.74 percent. This study used convenience sampling for sample selection. The respondents of the study were the teachers from different faculty of public universities in Bangladesh. The collected data were analyzed using SPSS version 20. The study revealed that the higher level of education in the country still follows the pedagogy style of teaching. Among the respondents' 59.2 percent have no idea about andragogy style of teaching and 71.4 percent have no idea about the heutagogy style of teaching. Moreover, 44.9 percent of the respondent believe that students' learning is assured through pedagogy style. Finally, the study implications, limitations as well suggestions are discussed accordingly in this report.

Keywords: teaching-learning practices, higher Education, exploratory study, university level

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

The everyday teaching-learning practices in the universities are imperative opportunities and scopes for teachers' learning. A better teaching-learning practice ensures effective learning of students as well as strengths teachers' skills and efficiencies in teaching (Maya, & Maraver, 2020). Similarly, the opposite of that situation can create barriers to meaningful and productive learning for both parties. The teaching-learning practices refer to the learning activities which support diverse active learning opportunities, student-to-student engagements, multiple learning styles, variety of teaching methods, and assessments based on teaching-learning frameworks and theories (Hubber, Tytler, & Haslam, 2010). Literally, Pedagogy, Andragogy and Heutagogy are the conceptual frameworks to involve the child and adult learners within teaching the learning processes. The concept of pedagogy considers educators' professional practices, especially ensuring nurturing relationships, decision-making for curriculum, teaching and learning styles and methods which are suitable for children (Hubber, Tytler, & Haslam, 2010).

Alternatively, Andragogy deals with adults learning to lead to self-directed, internally motivated, and prepared to learn as adults learn differently than children (Palis & Quiros, 2014). And Heutagogy is the study of self-determined lifelong learning where 'knowledge sharing' seems priority rather than 'knowledge hoarding' (Blaschke, & Hase, 2019). Elevated quality teaching-learning practice is supported by theories and research evidence concerning learners' learning. From the concept of universities teaching, teachers are required to concentrate more on Andragogy and Heutagogy than Pedagogy

as those frameworks are designed to promote self-directed and lifelong learning to create knowledge for the society (Halupa, 2015). Therefore, it is vital to explore whether our teachers in higher education sectors practice and promote those aspects for effective teaching and learning in Bangladeshi universities. This research has explored the present teaching-learning practices of Pedagogy, Andragogy and Heutagogy by educators in higher education from a triangular approach.

1.2 Background of the Study

Diverse teaching approaches have discovered that teaching is a complex process adapting with the specific needs of the learners, subject matters and the general contexts, however, the act of learning seems a common activity (Chekour, Laafou, & Janati-Idrissi, 2018). In educational settings, there is no single approach to teach a particular subject. Therefore, teachers are free to choose the appropriate teaching-learning approaches based on their needs, performance and limitations, etc. In this research project, the main teaching-learning approaches used to facilitate the learning of a social science, business and science subject will be explored (Jones, Penaluna & Penaluna, 2019). On the basis of this study, the blend of relatively recent approaches, an overview of public universities' practices and ways for shifting to Andragogy and Heutagogy teaching and learning practices have been highlighted.

The appropriate instruction methodology of the teaching style has been addressed by the prior research but the suitability of andragogy and pedagogy as instruction methodologies in teaching is not examined that much (Muduli, Kaura, & Quazi, 2018). This research aims at examining the available teaching methodologies and ascertain the most preferred teaching approach for higher-level education in Bangladesh. Data were

obtained from the participants working in different faculty of public universities in Bangladesh. Similarly, the teaching style of the university level teachers was determined to study the dimensions of the preferred teaching styles.

Study findings show that learning styles vary between learners and people learn in different ways (Bagar-Fraley, et. al., 2020). Learning styles are reflected in the type and range of activities the learners undertake to learn. Surprisingly, such style and learning activities depend upon the instruction domains and level of the learners (Guardia, Del Olmo, Roa & Berlanga, 2019). The learning outcomes largely depend on the basic premise of adult learning that better fit between the learning style and the instructional methodology (Amirkhiz, Moinzadeh, & Eslami-Rasekh, 2018). Hence, there is a need to maintain consistency between the learning styles and both the teaching approaches and curriculum. In this context, the current study focus on identifying the teaching-learning styles related to the methods of instruction .

1.3 Problem Statement

Teaching and learning processes depend on diverse educational theories and frameworks considering learners' cognitive, affective and psycho-motor developments, learning acquisition, learning and teaching style (Kemmis, Edwards-Groves, Wilkinson, & Hardy, 2012). Therefore, it is vital to study how teachers are preparing themselves keeping in mind all those educational theories and frameworks. Moreover, an educational platform needs to get ready according to the needs and demands of industries and employers in the 21st century decade (Baygin, Yetis, Karakose, & Akin, September 2016).

Researchers observed a variety of specialized courses and programmes both at the undergraduate and the postgraduate levels are offered by the educational institutions offer. Simultaneously, the quality of the graduates produced by the institutions is also a great concern (Khan, Khan, & Turi, 2019). Specifically, researchers further noted the curricula and the instruction methods meticulously (Vilppu, Södervik, Postareff, & Murtonen, 2019). For this reason, Outcome Based Curriculum is suggested and proposed for Universities of Higher Education in Bangladesh (Stefan Trines, 2019; Monem & Baniamin, 2010). To understand, prepare and apply the Outcome-Based Curriculum teachers are required to know the fundamental theories of Pedagogy, Andragogy, and Heutagogy. Hence, it is time to study the basic understandings and applications of pedagogy, andragogy and Heutagogy in the universities first. Moreover, to plan for future educational strategies and policies in universities current situational analysis is also essential and instrumental. Lastly, a study on public universities can highlight our achievements and challenges in the universities as well as can direct effective ways of synchronization and association between them. Therefore, such research is a timely demand to explore the teaching-learning practices at the university level in Bangladesh.

1.4 Research Questions

This study aims to answer the following questions:

1. Is the practiced teaching-learning approaches are appropriate in higher education?
2. Is there any root cause of practicing traditional methods of teaching in higher education?
3. Is the idea of modern teaching-learning practices suitable for higher education?

4. Is there any existence of Andragogical and Heutagogical practices at the university level?
5. Is there any suitable teaching-learning approach at university level education?

1.5 Research Objectives

The research objectives of this study are mentioned below:

The general objective of this study was to explore the existing teaching-learning practices of private universities in Bangladesh. Specifically, the research questions were as below:

1. To explore the appropriate teaching-learning approaches at higher education;
2. To find out the causes of practicing traditional methods at higher education;
3. To determine the idea about modern teaching-learning practices at higher education;
4. To determine the existence of Andragogical and Heutagogical practices at the university level;
5. To determine the suitable teaching-learning approach at the university level.

1.6 Scope of the Study

This study aims at looking into the teaching-learning practices at the higher education sector particularly universities of Bangladesh. In this study, the teachers of public universities were selected as the respondents. More elaborately, the teachers engaged in the Business, Social Science and Science faculty of public universities located in Dhaka, Chattogram, Barishal, Rajshahi, Khulna and Sylhet division were covered under this

study. As the research area requires a larger-scale study, this study has been conducted with the response of teachers of different categories working at six public universities of Bangladesh. Hence, this study is limited within the public universities only due to budgetary and time constraints.

1.7 Definition of the Key Terms

A conceptual framework is essential in describing a concept to render that it is quantifiable, and is done by observing the concept originated features, dimensions of behavior, or properties (Sekaran & Bougie, 2016). Accordingly, several key terms have been defined that are necessary to be understood in the study context. The definitions of key terms are described as follows:

1.7.1 Teaching-Learning Practice

The concept of teaching-learning practice denotes the traditional pedagogical practices in the education system.

1.7.2 Higher Education

In this study, the concept of Higher Education indicates the University level education system in Bangladesh.

1.7.3 Exploratory Study

The exploratory study has focused on digging out the study problem through questionnaires, FGD (focus group discussions) and KII (key informant interviews).

1.7.4 University Level

The concept university level will solely be confined to the public university-level education in the country.

1.8 Organization of the Chapters

In chapter one, some background information about the teaching-learning practices and allied components are elaborately discussed. Specifically, this chapter is followed by the statement of the problem, questions of the study, and the objectives of this research. The significance, scope, and definition of the key terms are also presented here.

Chapter two provides a general overview of the teaching-learning practices in Bangladeshi universities. Exclusively the background, significance, and contribution of pedagogy, andragogy, and heutagogy at the higher education level have been equally discussed. Additionally, an overview of the literature that is linked to the research problem is described.

In chapter three the research methodology used in this research is discussed. Discussions begin with the research design, exploratory, descriptive, and causal nature of the research, study population, sample size and sampling design, unit of analysis, operationalization and measurement of variables, instrumentation, control for measurement error, questionnaire design, data collection procedure, the technique for data analysis, reliability and validity as well the outcome of the pilot study and then it further discusses the available research approaches.

Chapter four describes the statistical analysis of the collected data, which includes data examination, screening and preparation. Respondents' profile is presented and interpreted along with the results of factor analysis for all variables. Then, the research questions, which were assessed with SPSS 20 package are analyzed and reported. A chapter summary is also presented and discussed.

Chapter five focuses on the research findings based on the study objectives and hypotheses. Furthermore, this chapter provides the theoretical, practical and methodological contributions and implications of the research findings. Finally, this chapter describes the research limitations, general summary, discussions, conclusion and recommendations for future study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

People are living in the age of industrial revolution 4.0 where everything depends on technology and innovation. According to Maria, Shahbodin, & Pee (2018) using Internet Technology is known as the Internet of Things (IoT) where university graduates have to be ready to work and cope up with IoT incorporating their visualization, connectivity and innovation. Industrial Revolution demands an education system targeting an innovation era in which teachers will be more liberal to make their learners self-determined. That concept creates the revolution in education which is known as Education 4.0 which emphasizes parallelism, connectivism, visualization and production of knowledge than instructivism (Maria, Shahbodin, & Pee, 2018). However, our teachers in higher education is still in the process of delivering lecturers only considering students as passive learners and knowledge receivers (Xing & Marwala, 2017; Maria, Shahbodin, & Pee, 2018).

Prioritizing technology in education is taking into consideration in Bangladesh to get ready for industrial revolution 4.0 (Ali, 2018) **.** Nevertheless, preparing graduates with soft skills and social skills are the key factors for attaining Education 4.0 (Penprase, 2018). In education 4.0 creativity, analytical and critical thinking, problem-solving, decision making, working together and emotional intelligence are the significant components that value students as active learners to construct ideas, create knowledge, transfer knowledge and feel free to learn, create and share (Puncreobutr, 2016). Furthermore, learning management is a new learning system of this era, that allows the learner to obtain knowledge and skills for the whole span of life, not jonly for reading

and writing. To be able to live in a society and to be equipped with the best of his/her ability. Hence, Education 4.0 is considered more than education (Aiemsri, Ardwichai, Sinlarat, & Chan-urai, 2020). Education 4.0 allows learners to learn life skills as well within a set curriculum.

In 1996, Delors Report highlighted the four pillars of learning to sustain human development focusing on life skills which are for learning, learning to do, learning to live together and learning to (Keevy & Chakroun, 2015). In the 6th International Conference in Adult Education by UNESCO, six pillars for lifelong learning were mentioned which are learning to know, learning to do, learning to live together, learning to be, learning *to* change, and learning for sustainable development (Wang, 2010). The pillars of learning are an adaptation of the concept of 'lifelong education' that is a critical issue addressing current global and educational phenomena. The idea of reflecting pillars of learning has a noteworthy influence on educational policy debates, teacher training and curriculum development worldwide including developing countries like Bangladesh. The lifelong learning process is more on learner-centered approach than delivering lecturers only for university students (Blaschke, 2012).

Therefore, within an age of innovation, teacher-centered methods can be the way of teaching. Even if, the art of child teaching know as pedagogy considers a learner-centered approach for teaching kids. Pedagogy refers to a process to gather knowledge base around specific subject matter focusing on Cognitivism, Behaviorism and Constructivism to teach children (McAuliffe, Hargreaves, Winter, & Chadwick, 2009). Pedagogy has come from the Greek word paid which means child and agogos meaning for leading (McAuliffe, Hargreaves, Winter, & Chadwick, 2009). The model of pedagogy is in a sense, a content model associated with the transmission of information,

knowledge, and skills. In pedagogy, what type of and skill needs to be transmitted is decided by the teachers in advance. Accordingly, the teacher selects the most appropriate approaches for transferring the teaching content like lectures, readings, exercises, etc. Moreover, teachers develop a plan for the presentation into some sequence through arranging a body of content into various logical units. Briefly, pedagogy is a teaching theory based on transmission rather than a learning theory (McAuliffe, Hargreaves, Winter, & Chadwick, 2009).

Thus, it will be right and appropriate the university educators to follow similar educational approaches and frameworks for adults. Teaching adults is not the same as teaching children as adults have the autonomy to choose, to learn, and to create. To give students autonomy to choose, to learn and to create Andragogy and Heutagogy can be practiced. In the 1970s, Knowles (1975) defined andragogy as the process of adult education where learner's control and self-responsibility in learning, intrinsic motivation of learner and learner's experience play the vital role. In andragogy, learners are actively involved in identifying their needs and planning through spontaneous teaching and learning (Gandomkar, & Sandars, 2018).

In adult education, two contrasting instructional styles named andragogy and pedagogy are identified by Knowles (1984). Pedagogical style involves the leading of adults, and andragogy is defined as leading the learning by adult learners (Bale & Dudney, 2000). Teacher-driven and directed methods are involved in pedagogical style. On the other hand, andragogy is more self-directed and learner-centered (Nadkarni, 2003). The assumptions of pedagogy and andragogy as compared by Knowles (1984) are learning as a matter of accumulating subject matter by the younger learners when they are older;

simultaneously, learning as a means to improve the competency level by the adult's view for applying new knowledge.

Knowles (1975) further noted that in andragogical style, individuals take the initiative with or without the help of others and it is a self-directed learning process. In the process of diagnosing the learning needs, identifying resources for learning, formulating the goals, evaluating learning outcomes, selecting and implementing appropriate learning strategies learners engage themselves. In this self-directed learning path, reflections on life experiences can shape self-perception, beliefs, and lifestyle that lead to transforming learning. (Blaschke, 2012). As the scholarly approach to the learning needs of adults, andragogy has a growing conception in many (Reischmann, 2004). As observed by Knowles (1984), for adult education andragogical style is more appropriate. In andragogy, adult learners who exercise more control over the learning processes and outcomes are more often the initiators of their own learning experience. Thus, in the learning journey, they prefer more power and autonomy (Brim & Wheeler, 1966).

Similarly, a key concept in Heutagogy is self-reflection (Hase & Kenyon, 2007; Blaschke, 2012). Heutagogy is self-determined learning where acquiring knowledge and skills and developing capability is equally important (Blaschke, 2012). Therefore, it is high time to consider what will be our approaches to teach students of universities in this 21st century period. The industrial revolution, Education 4.0, Six pillars of education direct us for concentrating on higher-order learning by ensuring Andragogy and Heutagogy; that will explore the appropriate teaching-learning practices including methods and frameworks are practiced by the teachers for meeting the future needs of learners in Education 4.0.

2.2 Pedagogy Style of Teaching

Knowles (1973) described the evolution of pedagogy. Pedagogy evolved between the 7th and 12th centuries in the monastic schools of Europe. Pedagogy has derived from the Greek words ‘paid’ meaning child and ‘agogus’ meaning leader of. Traditionally the assumptions of pedagogical style made about learning and learners were based on observations by the monks in teaching the children. With the spread of basic schools in the 18th and 19th centuries throughout Europe and North America, it became the most accepted model of education. During a scientific study on learning around the turn of the 20th century, educational psychologists limited their study typically to the reactions of children and animals.

Geraldine, Abington-Coper, and Knowles (1998) identified the following assumption that students only need to learn what the teacher teaches and they need to learn the material only that will be used to answer questions during an examination are the basis of pedagogy style. Furthermore, the pedagogical style suggests that learners without experience can gain entry into a course and learn a new skill. Similarly, learners’ experiences are not necessary for learning (Aderinoye, 2020). As an example, institutions having courses in computers for beginners don't need to have previous experience of the learners. Surprisingly, in the case of regular school students, they have to depend solely on the teacher to learn the basics who do not know a particular area (Aderinoye, 2020).

Furthermore, pedagogy in education involves different teaching techniques as it is an accepted fact that students do not learn similarly. To address the different learning styles within the classroom respective teacher is responsible to adjust lessons and incorporate

different ways of learning. In the book Pedagogy of the Oppressed, Paulo Freire (1981) described the pedagogical process of teaching and learning process as narration, where the teacher is taken as the narrator that directs the students to learn the subject mechanically. This fits students into containers to be filled by the teacher (Lucio-Villegas, 2018).

Paulo Freire (1981) further referred to the pedagogical process as the concept of education banking in which the role of the students is that of receiving, filing, and storing the deposits. The situation becomes that of a society seeing knowledge as a gift granted by the educated upon those whom they consider as knowing nothing. Freire (1981) describes it as forecasting a complete unawareness and an ideology of oppression. Confirming the ignorance the teacher presents himself to the students as the opposite (Mayo, 2018). Education in this situation should initiate with the resolution of the teacher-student inconsistency for learning from each other.

2.3 Andragogy Style of Teaching

Andragogy has a long history, spanning over 180 years, even though many people are unfamiliar with the term. Alexander Kapp, a German high school teacher, created the term in his 1833 book on adult education methods (Greene & Larsen, 2018). The term was not used again until Eugen Rosenstock-Huessy, another German, detailed his thoughts on the execution of his theories about andragogy from the early 1920s until the 1970s. Rosenstock-Huessy is attributed to Eduard Lindeman, an important theorist in the field of andragogy, with defining the term as distinct from pedagogy and demagogy. (Berestok, 2019). Andragogy describes learning as a process in which theory and practice merge into one - a process in which theoretical knowledge and practical

concerns are resolved via creative experience (McNally et al., 2020). Lindeman wrote a book about andragogy called The Meaning of Adult Education in 1926, but Malcolm Knowles released ‘The Modern Practice of Adult Education: Andragogy Versus Pedagogy' in 1970, which popularized the word. Malcolm Knowles, known as the Father of Andragogy, coined the term in his 1968 paper ‘Andragogy, Not Pedagogy’ (Raymer, 2021). Adult learners, according to Knowles, are self-directed and autonomous, and the instructor's function is to support knowledge acquisition and construction. Multiple scholars have noticed that andragogy is a critical basic ingredient for transformational adult learning (Duff, 2019).

Biao (2005) in his publications titled ‘Pedagogy and Andragogy Warfare’ and the ‘Psychology of Andragogizing in Nigeria’ states that in the early 1920s the teachers of adults found some problems with the use of the pedagogical model while adult education began to be organized systematically (Aderinoye, 2020). This was as a result of the ground of the objective of education as a transmitter of knowledge. The adult educators then felt that this idea of pedagogy was inadequate due to commonly teaching strategies of pedagogy such as routine memorizing, lectures, quizzes, assigned readings, examinations, and skills. The early leavers or dropout rates were high because the teachers saw that many of the pedagogic model's assumptions regarding learner characteristics did not apply to their adult students. Adult learners may be recognized when we grasp their features, as indicated previously in this presentation, and Knowle's concepts of andragogy flow directly from that understanding. It should be noted that facilitators who followed the principles of andragogy when designing and deciding on program delivery materials find that their students make faster progress and are more successful in achieving their objectives (Morteza Karami, et al., 2020). Nottingham

Andragogy Group (1983) asserted the In 1833, the German teacher Alexander Kapp invented the term andragogy to describe Plato's educational system (Suzanne, 2019). But another German teacher John Fredrick Herbet disapproved of the name, and it was never used again for nearly a century. By 1921, the name had resurfaced in Europe, and it was widely used in France, Holland, and Yugolavia during the 1960s (Mardani, Nikoosokhan, Moradi, & Doustar, 2018). It was first introduced in the United States in 1927 by Martha Anderson and Edward Linderman but they did not attempt to develop it further (El-Amin, 2020).

Knowles (1980) cited by Avoseh 2020 states that Greek word ‘andre’ with the stem ‘andra’ meaning men, not boy or adult and ‘agogus’ meaning leader of are the basis of andragogy. To underline the contrasts between adult and child education, Knowles defined the phrase as the art and science of assisting an adult in learning (Robinson, Schaap, & Avoseh, 2018). Regardless of the use and practicability of the two terms, education is further viewed as a single vital human process by Houle (1972) and felt that despite differences between children and adults, the learning activities are the same (Lim, You, Kim, & Hwang, 2019). He saw andragogy as a tool rather than an organizing concept in adult education.

2.4 Heutagogy Style of Teaching

Education is today a thrilling experience in which the human mind’s capacity to build knowledge has no bounds (Akyildiz, 2019). They must be the agents of their own learning to construct knowledge and be successful lifelong learners. As a result, they require more than pedagogy and andragogy can provide. They are both unqualified to help students become self-directed learners. (Blaschke, 2018). Hase and Kenyon defined

heutagogy as a holistic paradigm of self-determined learning in the year 2000. It can be considered an extension of andragogy, or self-directed learning because its concepts are based on it (Agonács & Matos, 2019). Pedagogy and andragogy, particularly in higher education, are unable to meet the needs of twenty-first-century learners. Because it is easier to establish self-directed competence in learners and involves less effort than prior educational processes. Students should have learned how to learn up to higher education so that they can develop their ability to be a self-directed learner (Jones, Penaluna, & Penaluna, 2019).

2.5 Chapter Summary

This chapter focused on the background of teaching-learning styles followed by the relevant literature. More exclusively it highlighted the multifarious aspects of pedagogy, andragogy and heutagogy style. Additionally, this chapter highlighted the discussion relating to the contemporary style of teaching-learning approaches. The literature on these approaches is reviewed elaborately. This chapter also highlights the background history and origin of pedagogy, andragogy and heutagogy. More exclusively, this chapter explains the insights for this study.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The major objective of this study was to develop a thorough idea of the knowledge of teaching-learning style in the public universities of Bangladesh. This chapter discusses the research design, sampling design, measurement and instrumentation, data collection procedure, and finally data analysis techniques used for data analysis in determining the appropriate teaching-learning style at the higher education level.

This study is an in-depth study using a mix-method approach. This study is going to explore the present teaching-learning practices of teachers in terms of teaching-learning context. Therefore, the survey was used as a quantitative study method. The researchers considered Key Informant Interviews with experts and FGDs with sampled teachers as qualitative instruments as well. Moreover, classroom observation was also a tool for obtaining more in-depth data on current teaching-learning practices. Overall, the study is explanatory mixed approach research as Quantitative data will be gathered before collecting qualitative (Creswell, 2012).

3.2 Research Design

With a view to attaining an acceptable outcome like the concept of research design, research type, variables measurement, survey questionnaire preparation, and pilot survey for validating the research questionnaire from the research a variety of areas are dealt with the research design (Zikmund et al., 2013; Zikmund, 2003). Furthermore, in obtaining the research objectives research design helps to identify the sequential steps

(Burns & Bush, 2006) as below. Table 3.1 illustrates the research questions and research objectives below.

Table 3.1

Summary of Study Questions and Research Objectives

Research Questions	Research Objectives
1. Is the practiced teaching-learning approaches are appropriate in higher education?	1. To explore the appropriate teaching-learning approaches at higher education;
2. Is there any root cause of practicing traditional methods of teaching in higher education?	2. To find out the causes of practicing traditional methods at higher education;
3. Is the idea of modern teaching-learning practices suitable for higher education?	3. To determine the idea about modern teaching-learning practices at higher education;
4. Is there any existence of Andragogical and Heutagogical practices at the university level?	4. To determine the existence of Andragogical and Heutagogical practices at the university level;
5. Is there any suitable teaching-learning approach at university level education?	5. To determine the suitable teaching-learning approach at the university level.

3.2.1 Quantitative Research

According to Cresswell (2009), there are mainly three types of research design to conduct research: qualitative, quantitative, or mixed mode. In order to determine the influences of social phenomenon that acquire a detailed understanding of events, qualitative research is used. On the other hand, both qualitative and quantitative methods are used combined in mixed mode research in the same study (Creswell, 2009). Quantitative research is used to describe tendencies or inclinations while associations among the variables are investigated. The quantitative approach was used in this research to study the relationships among variables to describe, predict and manage the phenomenon (Leedy & Omrod, 2005). The quantitative study is a research method where collected data are presented by analyzing numbers with widely available statistics both descriptive and inferential (Bordens & Abott, 2008). Similarly, quantitative research also involves measuring people in order to answer the question.

Furthermore, Sekaran (2006) explained, the quantitative research design is utilized because it gives a more comprehensive picture of the issue being considered including the intended interest group and the viability of the project itself. Quantitative methods are very useful to analyze or prove theories (Creswell, 2009). This approach aims at determining the effect of a variable on each other. Because of the vast sample population, this method also allows results generalization to the entire population (Kaur, et al., 2019). Researchers further stated that the quantitative method decides both the prior and after results and determines research hypotheses by testing the theory. Moreover, the quantitative method clarifies and predicts measured variables all together (Leedy & Ormrod, 2005).

In addition, the research design is categorized into three main categories that include experimental research design that is carried out in laboratory; survey/non-experimental design, consisting of interviews and questionnaire; and historic design of research explores secondary observation and information (Zikmud, 2010). This research employed a survey design where the researcher does not have any control over predictor variables that control their effects on the dependent variable and does not interfere with the settings of the study. Graziano and Raulin (2004) argued that the survey method was employed in this study because it is the best method of gaining information from people in their natural context. Moreover, in viewpoint of gathering information on personal and social facts, it is considered the best method of reserach (Babbie, 2010). As explained by the researcher's Cooper and Schindler (2006), as survey method emphasizes standardization and uniformity, efficiency, accuracy and reliability it is advantageous.

This study adopted the cross-sectional type of design that includes the collection of data from the given sample/population at once or at one point in time for realizing the study objectives (Spector, 2019). It is believed to be the most appropriate method as it would limit the non-responsiveness of respondents, be less time-consuming, and be less cost-effective to undertake the study (Sekaran, 2006). This research is descriptive and involves hypotheses testing. Descriptive research was undertaken to clarify the demographic information of the study respondents. The hypothesis testing provides increased knowledge on the relationship that exists among four variables namely: leadership styles, organizational structure, organizational performance and job engagement.

3.3 Population and Sampling Technique of the Study

3.3.1 Population

A population is a group of people or organizations who are of attention to a study (Sekaran & Bougie, 2016). In a study, the population consists of a collection of data and information whose properties are going to be analyzed to achieve the study objectives (Hair et al., 2006). The population is described as a group of individuals who have similar features and characteristics that a researcher can identify (Cresswell & Poth, 2017). The study population is also referred to as the total group of individuals or events that the researcher likes to study (Sekaran, 2006).

Since the objective of this study aims at determining the teaching-learning practices at the university level in the country teachers comprising of different faculty of six public universities were selected as the respondents for this study. The study respondents were selected from this population.

Moreover, the survey study was conducted on full-time teaching employees as most of the studies suggest that the organization is expected to have a strong relationship with the full-time employees (Price, 1997), therefore, their responses are more acceptable. Scholars also argued that due to more devotion to the organization it concentrates more to its full-time employees than contractual employees (Conway & Briner, 2002). Thus, the population of this study is the full-time employees of different positions; who are working under different faculty and departments in the public universities of Bangladesh.

Since the objective of this study aims at exploring the present teaching-learning practices of public universities in Bangladesh, this study was conducted in six districts of the country. Of them Dhaka, Barishal, Khulna, Chottogram, Rajshahi and Sylhet were

selected as the study area. Furthermore, one university from Dhaka, one university from Chottogram, one from Khulna, one university from Barishal, one from Rajshahi and rest one university from Sylhet district were selected for data collection and the teachers of these six universities were considered as the population of this study.

3.3.2 Sampling Design and Sample Size

The sampling process initiates with the identification of the target population. Hence, a quantitative study is the researcher's ability to use a small number of respondents to make appropriate inferences about a large population that might be too costly to be studied (Cavana, Delahaye & Sekaran, 2001). Sample size denotes the number of units that need to be surveyed to get reliable and accurate results (Cresswell, 2008).

Although researchers argued, the determination of an appropriate sample size depends on the population of the study (Wang et al., 2019). Some rule of thumb or statistical tool is used in this regard for determining accurate sample size (Johanson & Brooks, 2010). An appropriate sample size helps the researcher to collect data without knocking each sample due to time, money, and human resource constraints. In this connection, researchers further suggest determining the appropriate sample size for avoiding a visit to every element of the population (Zikmund et al., 2013). In fact, the results derived from the right kind of sample size are reliable for the study (Sekaran & Bougie, 2016). Researchers postulated a sample size of 150 or more is appropriate to acquire parameter estimates having standard errors too smaller to hands-on use practically (Anderson & Gerbing, 1988). To evade the problems of misspecification sample size should range from 150 to 400 (Hair et al., 2010).

Furthermore, Roscoe (1975) argues that the sample size may be any number between 30 and 500. In the case of, multivariate study the sample size would be 10 times or more of the variables used in the study (Roscoe, 1975). Similarly, the sample size may be calculated by the ratio of observations (items) of independent variables to the sample size which is five samples for one indicator or more as recommended less than this ratio is not acceptable (Sekaran & Bougie, 2016). Researchers further argued although the minimum suggested ratio is good enough for the calculation of expected sample size, it should be between 15-20 times correspond to each variable used in the research (Hair et al., 2006). To determine the sample size, the table based on a confidence level desired from a given population provided was used (Krejcie & Morgan, 1970). Table 3.2 exhibits the sample size for a given population. Based on the table, the appropriate sample size for a population of 150 respondents was 108 to serve as the sample size intended for this study.

Table 3.2

Determining Sample Size from a Given Population

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346

85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	**108**	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note: *N* is population size; *S* is a sample size

Source: Krejcie & Morgan (1970). Determining sample size for research activities

Hence, 108 samples were selected to administer the total number of questionnaires. Similarly, the lower the sample size the greater the tendency of error, and the higher the sample, the more accurate the result would be (Castro et al., 2019). Nonetheless, bearing the numerous precautions and suggestions of previous researchers in mind the researcher has selected the study samples carefully. Considering the variety of disciplines at the university level the samples were selected equally from three faculties like faculty of science, faculty of business, and faculty of social science. 6 samples from each faculty in a specific study area were selected and as a whole, it becomes 108. In brief, the study population and sample are shown in Table 3.3.

Table 3.3

Details of Sampled Universities

District/Area	Name of the university	Sample Size
Dhaka	University of Dhaka	18
Chottogram	University of Chittagong	18
Khulna	Khulna University	18
Barishal	University of Barishal	18
Rajshahi	University of Rajshahi	18
Sylhet	Shahjalal University of Science and Technology	18
Total		108

3.3.3 Sampling Technique

Two types of sampling design like probability and non-probability sampling have been discussed by the researchers in the study of sampling (Uprichard, 2013). Factually, for many decades probability sampling has been the main paradigm (Etikan et al., 2016). On the other hand, because of its cost and convenience advantages, non-probability sampling has always found a place in academic research (Vehovar et al., 2016). In the probability sampling process, the sample matches the target population's representative characteristics (Sarstedt, Henseler & Ringle, 2011). Whereas, in non-probability sampling, the elements of the population may not have a fixed chance of being selected as subjects. When time or other factors are more important than generalizability it is used in such cases (Sekaran & Bougie, 2010).

This study adopts the convenience sample technique. As a non-probability sampling technique; convenience sampling was used to select 108 respondents from the study

population (Rabeea et al., 2019). The basic reason for selecting this method is that the convenience sample technique presents the option from those respondents who are more suitable to find to the researcher in accessing the data (Rabeea et al., 2019). The convenience sampling method has been applied as the method of sampling in this study. Special attention was made to ensure that the respondent's sample frame included respondents from all of the faculty and disciplines to guarantee that the sample was normally distributed.

The main rationale for choosing this strategy is that it allows the researcher to access data from those respondents who are more appropriate to find (Rabeea et al., 2019). The method of sampling for the study was the convenience sampling method. Special attention was made to ensure that the respondent's sample frame included respondents from public universities to ensure that the sample was normally distributed. (Kalita, 2019). Moreover, the appropriateness of the sample size is justified by Neuman (2007), who asserts that when it comes to sampling size selection the researcher should use his discretion. This was found appropriate due to the difficulty in identifying the respondents who are relevant for this study. In addition, Nueman (2007) mentions, this form of sampling is cheap, time-saving and as the name suggests, it is the most convenient method of sampling. Therefore, the respondents were intercepted as they were working at their workplace. This was done to reduce the limitations posed by convenient sampling.

Sometimes convenience samples are referred to as accidental samples, because elements in the sample may be chosen merely because they are located, physically or administratively, close to where the researcher is collecting data. The primary goal of convenience sampling is to acquire data from participants who are readily available to

the researcher, such as providers who attend a staff meeting for study participation (S. K & Given, 2008).

Moreover, this study intends to adopt the convenience sampling technique to draw the samples. According to Gay and Diehl (1992), this approach ensures that identified subgroups in the population are proportionally represented in the sample in the same proportion as the overall population and produce a more representative and accurate sample. More clearly, convenience sampling ensures that each subgroup of a given population is sufficiently represented within the whole sample population of a study (Sarstedt et al., 2018).

3.4 Source of Data and Methods of Data Collection

This study employed a field study design by applying a cross-sectional study method. As explained by Cavana et al. (2001), the cross-sectional study involves gathering the data for a specific study only once or at one point in time to time for meeting the study objectives. With a view to avoiding the long-time consumption that characterizes longitudinal research cross-sectional method was chosen for this study (Sekeran, 2003). As the main tool of data, collection questionnaire was used for this study. Questionnaire technique is commonly used in social science research which involves asking individuals specific behaviors (Sekeran, 2003).

In this study, both qualitative and quantitative data were collected. Hence, necessary data was collected through a structured survey questionnaire, Focus Group Discussion (FGD)s and Key Informant Interview (KII)s. Considering the convenience of the respondents two FGDs were conducted consecutively in Shahjalal University of Science

and Technology and University of Chittagong. Beside these, six KIIs were conducted simultaneously for which the senior academic professionals like Dean, Head of the department, Director, and Professors of the selected universities were contacted directly.

3.5 Measurement

In the next couple of paragraphs, the survey instrument of the study has been presented. The survey instruments are described under this heading.

3.5.1 Development of Survey Instrument

The basis for the instrument development of this study arises from the research design and existing literature on pedagogy, andragogy and heutagogy as discussed in previous chapters. The instruments employed in this study aimed at data collection in the form of questionnaires. The survey questionnaire measured the variables of this study. Sekaran (2003) considered survey-based studies as one of the most appropriate data collection instruments. Thus, the survey questionnaire referred to 'Appendix-A' has been elaborated in the following paragraph.

The survey questionnaire has been designed into four sections. It is the rule of thumb that every variable is comprised of few items and not less than three items (Hair, et al., 2014). Therefore, all variables in the study consist of the minimum number of items to clarify the notion. Section 1 consists of eight demographic variables including gender, age, marital status, educational level, concerned department, service tenure, designation and type of employment. Section 2 consists of fourteen items that measure pedagogy style of teaching, six items that measure the andragogy style of teaching and seven items that measure heutagogy.

Hence, the total items of the questionnaire are thirty-five to attain the study objectives. In section one, different questions (items) about the demographic information of the respondents have been included with a different number of options and thus, the respondents were asked to provide their opinion in any one of those options for each item. Simultaneously, the respondents were asked to put their opinion through a 5-point Likert scale for the items covered under section two.

The measurement scales are adapted from existing measurement scales developed by different researchers that are widely used in different researches and thus, the measurement scales are not prepared by the researcher of this study.

3.5.2 Pedagogy Style of Teaching

Pedagogy is the earliest type of teacher-centered learning, in which the instructor selects what and how to teach, as well as how to assess the students' progress (Jumanovich & Eshboevna, 2019). In traditional words, it is a lecture-based classroom teaching approach that emphasizes knowledge transmission rather than application. As a result, it was discovered that during adolescence, students are mature enough to express their opinions and wishes for involvement, as well as to decide on the curriculum and learning techniques (Syamsul, 2018). In fact, teachers are given a responsibility by pedagogical models because they are the ones who decide how to teach. As a result, in a pedagogical paradigm, students are more reliant on the teacher and the subject content. (Akyildiz, 2019).

In pedagogy, the curriculum is made up of subjects. Learners are expected to learn systematically; as a result, they do not have the authority to select subjects based on their prior learning experiences. (Androutsos & Brinia, 2019). Grades and passing the

exams are their extrinsic motivation sources (Knowles, 1980). Hence, there are 14 items for operationalization of pedagogy style that are scored on a five-point rating scale: (1) not at all/strongly disagree; (2) once in a while/disagree; (3) sometimes; (4) fairly often/agree; and (5) frequently/strongly agree. Table 3.4 shows the operationalization of pedagogy style of teaching.

Table 3.4

Operationalization of Pedagogy

Variable	Survey Items	No. of Items
Pedagogy	1. Comfortable with Pedagogical style	1
	2. Students are accustomed with this style	1
	3. Habituated with Pedagogy since primary schooling	1
	4. Participated in Pedagogy training	1
	5. Cannot think other than Pedagogy	1
	6. Students' learning is assured through Pedagogy	1
	7. Attended ToT course and practice modern methods of teaching	1
	8. Pedagogy seems a traditional approach of teaching	1
	9. Higher level education needs Pedagogy	1
	10. Pedagogy articulates visions of the learning	1
	11. Pedagogy helps sharing the knowledge	1
	12. Pedagogy suggests new ways of looking at how to complete assignments	1
	13. Pedagogy emphasizes the importance of having a collective sense of learning	1
	14. Pedagogy expresses confidence that student will achieve	1

3.5.3 Andragogy Style of Teaching

It prepared the way for Knowles' word andragogy (adult learning) in 1970 (Muduli, Kaura & Quazi, 2018). Autonomous, self-directed, interactive learning is a key aspect of andragogy, and learners are driven by internal rather than external factors. Students in andragogy are more eager in putting what they've learned into practice right away, thus they prefer a problem-centered approach and expect respect and equal standing. Instrumental, self-directed, experiential, viewpoint transformation and contextual cognition are the five basic types of learning identified by researchers. Andragogy is a common theory of adult learning that falls under the category of self-directed learning (Jones, Penaluna & Penaluna, 2019). Andragogy, according to Hanselmann (1951), was not about adult schools but about assisting adults in the learning process, and he saw its goals as a continuation of pedagogy. Andragogy was designed to aid adult self-education, which he saw as a life process separate from school as an institution. As his book Einführung in die Andragogik (1957), Pöggeler is credited with being the first to attempt to give andragogy a scientific foundation. The book was extensively praised and regarded as a foundational work on the goals, motivations, content, techniques, and institutions of adult education.

Andragogy, according to Pöggeler (1957), should include the study of all systematic types of adult education and adult learning. To avoid making the goals and techniques of childhood and adolescent education uncritically valid for adults, he concentrated on the field's features. Rosenstock-Huessy was also among those who taught him the most fundamental aspects of adult pedagogy (Pöggeler, 1957). In this context, 7 items for operationalization of andragogy style are scored on a five-point rating scale: (1) not at all/strongly disagree; (2) once in a while/disagree; (3) sometimes; (4) fairly often/agree;

and (5) frequently/strongly agree. Table 3.5 shows the operationalization of andragogy style of teaching.

Table 3.5

Operationalization of Andragogy

Variable	Survey Items	No. of Items
Andragogy	1. Have an idea on Andragogy	1
	2.Andragogy includes discussion, problem-solving, etc.	1
	3. Andragogy requires that adult learners be involved in the identification of their learning needs and the planning of how those needs are satisfied	1
	4. Andragogy is problem-centered rather than content-oriented	1
	5. Higher level education needs Andragogy	1
	6. Andragogy assures accurate learning	1
	7. Andragogy reflects the prophecy of teaching	1

3.5.4 Heutagogy Style of Teaching

Hase and Kenyon introduced the notion of heutagogy around the turn of the century, and Blasche revived it in 2012 (Blaschke & Hase, 2019). It is now preferred to acquire, update, and upgrade information and skills for long-term learning in this era of digital technology. Heutagogy is student-centered, self-directed learning guided by technology-based learning design and founded on humanistic thought. It places a strong emphasis on learners deciding what they want to learn and how they want to learn, as well as on learning to generate possibilities (Anand, Pujar & Rao, 2021).

Heutagogy should be viewed as a continuum of andragogical adult learning theory, aligned with the transition in graduate medical education from becoming competent

using core andragogy of self-directed learning to becoming an autonomous, self-determined learner once the professional has qualified, and the focus now shifts from competency to capability, proficient, and finally expertise (Blaschke, 2018). Moreover, Distance learning and the usage of Web 2.0 technology are two heutagogical strategies for meeting the self-directed learning needs of the autonomous professional learner. As a course and learning module designer and feedback provider who recognizes the demands and styles of these learners, designing curriculum and learning modules necessitates a particular set of teaching skills (Marcut & Chisiu, 2018). Therefore, 6 items for operationalization of heutagogy style are scored on a five-point rating scale: (1) not at all/strongly disagree; (2) once in a while/disagree; (3) sometimes; (4) fairly often/agree; and (5) frequently/strongly agree. Table 3.6 shows the operationalization of heutagogy style of teaching.

Table 3.6

Operationalization of Heutagogy

Variable	Survey Items	No. of Items
Heutagogy	1. Have an idea on Heutagogy	1
	2.In Heutagogy, students become more self-determined learners and follow a heutagogical path in the acquisition of new learning skills	1
	3. Heutagogy contains a flexible curriculum	1
	4. Heutagogy focuses on pure learning	1
	5. Heutagogy is not about learning content rather learning how to learn	1
	6.Combination of Andragogy and Heutagogy assures proper learning	1
	7. Andragogy reflects the prophecy of teaching	1

3.6 Pilot Study

A pilot study is regarded as a test where a small scale of the study is carried out before the full-scale actual study (Gay, Airasian & Mills, 2006). The major goal of carrying out a pilot study is to identify and eliminate any problem in the instrument before collecting the actual data from the targeted sample group. Researchers asserted that carrying out a pilot study with a sample size of 20-50 respondents is sufficient (Rossi, Wright & Anderson, 1983). Additionally, Cronbach's alpha coefficient is the most used test of inter-item consistency dependability.

In this research, the pilot study was conducted with a view to finding out the estimated time taken for the selected respondents to respond to the questionnaires, to deliver critical feedback on the length, clarity of scales and format, to comment on language, wordings, understanding of the questionnaires and also to test the reliability of the instruments used to conduct the study. This pilot study was conducted by applying the questionnaires during the face-to-face interviews with 20 respondents who were randomly selected from the public universities in Bangladesh. These respondents were required to rate the teaching styles at university level education. The respondents selected for the pilot test were taken from the actual population of this study.

One of the main benefits of administering the questionnaires during the interview is that the researcher could clarify doubts and ensure the respondents understanding on the questions. It was found from the pilot study that the approximate time taken to complete the questionnaires was in between 30 to 40 minutes. Some improvements were made to the questionnaire, namely questions on the demographic profile of the respondents. In the pilot study, some of the respondents made a comment that the questionnaires were too long. The questionnaire used in this study was 3 pages in length and contained three

different instruments with multiple items to measure the variables. All other sections in the questionnaire were therefore retained without any changes. After completion of the questionnaires, the researcher personally collected the questionnaires.

The reliability of the measurement instruments under the pilot study was tested using the Cronbach's alpha coefficient. Table 3.7 shows that the Cronbach's alpha for the instruments in the pilot research ranged from 0.609 to 0.688, indicating moderate reliability. According to Hair et al. (2018), Cronbach's alpha's lower limit is commonly regarded to be 0.7, however, in an exploratory study, it may be as low as 0.6. (Sekaran & Bougie, 2016). Furthermore, Greater than 0.7 Cronbach's alpha coefficients are considered good, but values of more than 0.5 are acceptable (Ramayah, 2011). Hence, the Cronbach's alpha cut-off value of 0.6 has been applied in this research. Moreover, Cronbach's alpha coefficient is used extensively to measure reliability (Venkatraman & Grant, 1986). Cronbach's alpha coefficient is a measure of internal consistency linked with scores produced from a scale or composite score.

It is difficult to have any validity linked with the scale or scores of the scale without dependability, hence reliability is critical. The guideline on the acceptable readings for Cronbach's alpha coefficient is illustrated under Table 3.7.

Table 3.7

Cronbach's Alpha Guideline

Alpha	**Strength**
<0.6 Weak	Poor
0.6 - <0.7	Moderate
0.7 - <0.8	Good
0.8 - <0.9	Very Good
0.9	Excellent

In conducting this study, using the Cronbach's alpha coefficient reliability tests were carried out on the three well-established questionnaires, namely, pedagogy, andragogy and heutagogy style of teaching. The instruments are dependable because the Cronbach's alpha coefficient values were within the acceptable range. Table 3.8 shows the output of the reliability tests.

Table 3.8

Cronbach's Alpha Coefficient of the Pilot Test

Variables	**Cronbach's Alpha**	**No. of Items**	**Strength**
Pedagogy Style	0.688	14	Moderate
Andragogy Style	0.661	7	Moderate
Heutagogy Style	0.609	6	Moderate

Few precautions were taken to limit response errors from the respondents' side, such as assurance of confidentiality in the covering letter was mentioned with the questionnaire. During the first contact, trust and confidence were built with the respondents requesting their kind cooperation.

3.7 Data Collection Procedure

This study employed a field study design by applying a cross-sectional study method. As explained by Cavana et al. (2001), the cross-sectional study involves gathering the data for a specific study only once or at one point in time to time for meeting the study objectives. With a view to avoiding the long-time consumption that characterizes longitudinal research cross-sectional method was chosen for this study (Sekeran, 2003). As the main tool of data, a collection questionnaire was used for this study. The

questionnaire technique is commonly used in social science research which involves asking individuals specific behaviors (Sekeran, 2003).

Prior to the data collection process, written permission was obtained from the respondents' organization to conduct the survey. The data collection was carried out from the first week of January 2021 until the end of April 2021. In order to obtain 108 samples as suggested by Krejcie and Morgan (1970), the researcher had a frequent meeting with the university authorities and distributed 108 questionnaires to the teachers directly who were selected through convenience sampling method from the public universities in Bangladesh.

Moreover, all respondents were requested personally to fill up the questionnaire and evaluate the leadership style of their immediate supervisors. Particularly, the respondents were requested to describe the way their immediate supervisors run and manage the organization and their relationship with the subordinates. Then the researcher tried to identify from their responses, whether either of the leadership styles was being practiced by the supervisors. In this regard, the respondents were given a week to complete the questionnaires and returned them to the researcher accordingly. Moreover, the respondents were advised not to indicate any information that could link them to the instrument for the purpose of maintaining confidentiality and anonymity.

3.7.1 Questionnaires Development

The questionnaire was prepared mainly on the basis of literature and research hypotheses as discussed in previous sections. The development of the questionnaire design, rating scale and wordings are made in line with the recommendations by Kaplan

and Saccuzzo (2009) to ensure the validity and reliability of the questionnaire. Consequently, vague wording, double-barrelled questions, and too technical jargons and terms are eliminated. Additionally, close-ended questions are constructed to restrict the respondents within the set of supplied alternative answers in measuring the objective and subjective perception of the questions.

According to Sekaran (2003), the close-ended questions assist the respondents to clearly understand the objective of the questions so that they can provide an appropriate response. These efforts are very vital because the anticipated responses are important in order to achieve a reliable statistical analysis for the final results (Hair et al., 2006). Moreover, the questionnaire was prepared in English to avoid any misunderstanding of the technical terms. The survey questionnaire is divided into four major sections detailed in Table 3.9 to fulfill the required information that contributes to the achievement of the research objectives. The full questionnaire is available in Appendix-A.

Table 3.9

Major Sections of the Questionnaire

Section	Title	Purpose
1	Respondent Profile	To obtain demographic information about the respondent
2	Pedagogy Style	To evaluate the degree of Pedagogy style at the university level
3	Andragogy Style	To evaluate the degree of Andragogy style at the university level
4	Heutagogy Style	To evaluate the degree of Heutagogy style at the university level

3.8 Techniques of Data Analysis

After collection of all data both descriptive and inferential statistics were used as techniques of data analysis. Descriptive statistics were applied to describe the data features quantitatively. Rather than taking the entire population, descriptive statistics can be used to summarize a sample (Venkatesan, 2019). It gives a summary of the sample and the observation made. The data analysis methods are selected based on the study questions and variable characteristics (Uprichard & Dawney, 2019). Several analyses techniques have been used for examining the hypothesis of the constructs established on the foundation of the literature review. In this study, data were analyzed using the SPSS version 21. The figure-wise analysis also is interpreted beneath each table. Lastly, data are presented analytically in a descriptive format.

Similarly, the quantitative data are analyzed using SPSS software and other statistical tools. Similarly, the qualitative data are analyzed descriptively. Furthermore, the study findings are presented in printed mode through report writing along with a digital copy. Moreover, a knowledge-sharing session on the draft report was conducted to disseminate the findings.

3.8.1 Statistical Package for Social Sciences (SPSS)

These prerequisites can be met with SPSS (Statistical Package for the Social Sciences). SPSS is a comprehensive statistical tool that provides social scientists with a wide range of options and statistical analysis (Lemenkova, 2019). It comes with a number of statistical tests that can be used to explain data and assess different research ideas. Some of these tests are widely used in the literature (for example, t-tests and correlation analysis), whereas others are used less frequently (e.g., discriminant analysis). With

SPSS it is convenient to create and edit a wide variety of tables and figures (charts) which describe and summarise one or more variables (Connolly, 2019).

Even though there are several statistical programs on the market, Sport and Exercise Science departments all over the world use SPSS. This is because SPSS has a large range of choices and is a user-friendly program (Yang & Zhang, 2020). Hence, the study data is analyzed with the application of SPSS software.

CHAPTER FOUR

ANALYSIS AND FINDINGS

4.1 Introduction

The results of the analysis are presented and discussed in this chapter. Both descriptive and statistical tools were used for data analysis. Descriptive analysis was used to explain the demographic information. The chapter is organized into eight sections. The overview of this chapter is covered in the first section. In the second section the data collection process, the response rate of the respondents and the non-response bias report are discussed. A detailed discussion is provided on the data collection and survey response process under the third section. The demographic profile of the respondents is focused on in the fourth section. Section five covers the analysis of the variables through the SPSS application. The Key Informant Interview (KII) results are illustrated in the sixth section. The result of Focus Group Discussion (FGD) has been discussed in section seven and section eight represents the result summary of the study.

4.2 Data Collection and Survey Responses

The data was collected during the first week of February 2021. The data collection process continued until the end of April 2021. With a view to ensuring an adequate number of responses, the researcher had to make several follow-up telephone calls and follow-up visits to the respondents. The response rate and non-response bias results are discussed below.

4.2.1 Response Rate

Out of 108 questionnaires, a total of 58 (53.70 percent) questionnaires were distributed initially among the respondents in January 2021. Another 50 (46.29 percent) questionnaires were distributed from mid-February to end-April 2021. Table 4.1 illustrates the response rate for the survey.

Table 4.1

Response Rate of the Questionnaire

Details	Frequency	Percentage (%)
Questionnaires distributed	108	100
Total Returned questionnaire	98	90.74
Unreturned questionnaire	10	9.25
Usable questionnaire for analysis (valid response)	98	90.74

During this time various initiatives as like as a reminder text message (Sekeran, 2003) and phone calls (Traina et al., 2005) have been made to the respondents for getting back the filled-in questionnaire within the least possible time frame (Silva, Smith & Bammer, 2002). As illustrated in Table 4.1, out of 108 distributed questionnaires, 98 (90.74 percent) questionnaires were returned and those were usable. Based on the argument of previous studies this rate is considered sufficient (Hair et al., 2017; Sekaran, 2003) that a 30 percent response rate is suitable for the survey study.

Furthermore, few researchers (O'Sullivan & Abela, 2007) asserted that 12 to 20 response rate is satisfactory while conducting the survey method for data collection. Moreover, it has been found in recent studies that the researchers accepted the response

rate of 36.31%; (Ebert et al., 2018), 38.45% (Naala et al., 2017) and 31.0% (Nair, 2015) for their analysis.

4.2.2 Non-Response Bias

Non-response bias is the type of bias displayed when some of the respondents choose not to respond to some of the questions or fail to respond or answer the questions (Heffetz & Reeves, 2019). Similarly, when the non-respondents are different in some meaningful ways from those who do respond non-response bias could also occur. Berg (2010) further noted this can affect the size and characteristics of the sample when the respondents fail to return the questionnaires or fill them.

Furthermore, due to the lack of comparable data, it is often difficult to link the responding and non-responding participants (Feng & Zou, 1997). Armstrong and Overton (1977) examined, using the early responses is the other best approach as compared to late responses when responses are received after several follow-ups. This method also assumes that those who respond late are similar to non-respondents (Feng & Zou, 1997). In order to overcome this problem of non-response bias, the researcher distributed 108 questionnaires, approximately two times the number of samples (54) required for the study based on the population. With a view to determining whether there were any differences between these two groups, the mean and standard deviation of demographic variables both early and late respondents were undertaken.

The respondents who provide responses within 30 days regarded as early responses and who provide responses after 30 days of questionnaire distribution are regarded as late responses (Vink & Boomsma, 2008). In this study, 46 respondents returned the filled-in questionnaire by 30 days and the remaining 52 respondents delivered their filled-in questionnaire after 30 days respectively. An analysis was carried out on a total of 98

samples received having a Chronic's alpha cut off value 0.67. Thus, it can be concluded that in this study there is no significant non-response bias and the sample is representative of the population of interest. There is a reasonable consistency of response pattern between early and late respondents. In this viewpoint, for statistical analysis, the responses from both late and early respondents were combined and used.

4.3 Profile of the Respondents

As discussed under methodology, the respondents for this research comprised teachers from the public universities located in Bangladesh. Section one of the questionnaire provides the respondents' demographic profile. The demographic profile of the respondents is discussed below.

4.3.1 Demographic Profile of the Respondents

The results of the demographic profile of the respondents are shown in Table 4.2 as obtained. Among the respondents, about 70 percent were male, and 30 percent were female. Almost 29 percent of the respondents were from the age group of 26 to 35 years. Respondents between the ages of 36 to 45 constituted 48 percent, about 22 percent of the respondents were between 46-55 years; while only 1 percent of the respondents were more than 55 years of age. Based on marital status, most of the respondents were married (80 percent), 17 percent were single and only 3 percent were divorced.

In the viewpoint of the education status, 41 percent were Masters degree holders; while 58 percent were found M. Phil or Doctorate and 1 percent were Ph.D fellow. Based on the respondents' length of service, the majority of them, that is almost 39 percent have working experience of more than 7-10 years. Almost 33 percent of the respondents have

working experience of more than 3-6 years, 26 percent have more than 10 years experience and only 2 percent have working experience of fewer than 2 years. From the Table below, there is some evidence to show that around 44 percent of the respondents have represented the faculty or department of social science, 33 percent have represented the faculty or department of science and 21 percent have represented the faculty or department of Business.

Regarding the employment type of the respondents, it was found 99 percent are full-time employee of the respective university and only 1 percent is on a probation period. In respect to the designation, among the respondents' 2 percent were the Dean of science and social science faculty, 23 percent were Professor, 26 percent were Associate Professor, 23 percent were Assistant Professor, and 24 percent were Lecturer. The demographic profile of the respondents is presented in Table 4.2.

Table 4.2
Demographic Profile of the Respondents

Demographics	**Item**	**Frequency**	**Percentage**
Gender			
	Male	69	70.4
	Female	29	29.6
Age Group			
	26 to 35	28	28.6
	36 to 45	47	48.0
	46 to 55	22	2.4
	55 >	1	1.0
Marital Status			
	Single	17	17.3
	Married	78	79.6
	Divorced	3	3.1

Education Level			
	Masters	40	40.8
	M.Phil or Doctorate	57	58.2
	Others (Ph.D Fellow)	1	1.0
Length of Service			
	<2 years	2	2.0
	3 to 6 years	32	32.7
	7 to 10 years	38	38.8
	More than 10 years	26	26.5
Type of Employment			
	Full Time	7	99.0
	Contractual/On Probation	1	1.0
Faculty / Department			
	Business	21	21.4
	Science	33	33.7
	Social Science	44	44.9
Designation			
	Dean	2	2.0
	Professor	23	23.5
	Associate Professor	26	26.5
	Assistant Professor	23	23.5
	Lecturer	24	24.5

4.4 Descriptive Statistic of the Construct

The descriptive statistic is used to describe the phenomena of interest (Sekaran & Bougie, 2010). It deals with the numerical summary of the variables by defining mean, standard deviation and variance (Zikmund, 2010; Sekeran, 2006). Thus, the latent constructs are described by the computation of mean and standard deviation in this study. Mean is the common measure of central tendency, which is defined as the average value of the data set (Sekaran & Bougie, 2010). On the other hand, the standard

deviation is the square root of variance and measure of dispersion, in the data set which provides an index of variability. For interval and ratio scale both mean and standard deviation are fundamental descriptive statistics. The researcher used a 5-point Likert scale in this study. The scores of less than 2.33 are of low level, and 2.33 to 3.67 are of a moderate level and 3.67 and above are considered as high level (Nik, Jantan & Taib's, 2010). Table 4.3 presents the overall mean for the latent constructs ranged between 1.48 and 4.03.

Table 4.3

Descriptive Statistic of the Latent Construct

Variables	**No. of Items**	**Mean**	**SD**
Pedagogy	14	4.03	0.81802
Andragogy	7	1.67	0.96084
Heutagogy	6	1.48	0.93329
Pedagogy, Andragogy, Heutagogy	27	4.03	0.81802

In summary, the mean and standard deviation for pedagogy style of teaching were 4.03 and .81 respectively. The andragogy style of teaching was 1.67 and .96 and heutagogy style of teaching was 1.48 and .93 respectively. As a whole, the mean and standard deviation for pedagogy, andragogy and heutagogy style of teaching is 4.03 and 0.8. This shows that respondents tended to have a moderate level of score under this study.

4.5 Assessment of SPSS Results

SPSS is a comprehensive statistical programme with a wide variety of options and statistical analyses available for social scientists (Lemenkova, 2019) that includes a number of statistical tests which can be used to describe data and examine various research hypotheses. SPSS was applied in this research to analyze the study data and interpret the statistical results. Hence, this study applied the application of SPSS and elaborate discussion on the study findings are mentioned as follows.

4.5.1 Pedagogy Style of Teaching

The study reveals that among the respondents 41.8% agreed that they are comfortable with the pedagogy style of teaching; whereas, 31.6% strongly agreed that they are comfortable with the pedagogy.

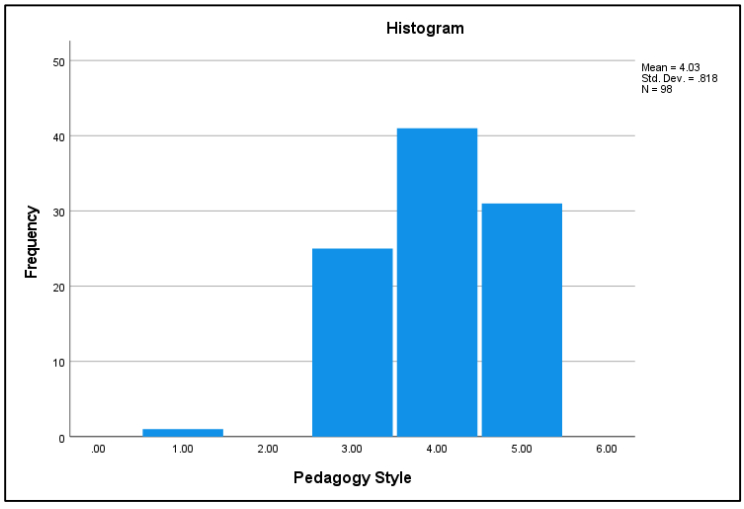

Figure 4.1

Respondent's comfort with Pedagogy

Among the respondents, only 6% participated in pedagogy training, and 24.5% did not receive any training on pedagogy. 45% of the respondents agreed that they cannot think other than pedagogy. Although it is well established that teaching professionals should

attend the Training of Trainers (ToT) course for their professional excellence but 58.2% of the respondents did not attend such training and do not apply modern teaching methods. Moreover, only 1% attended ToT course.

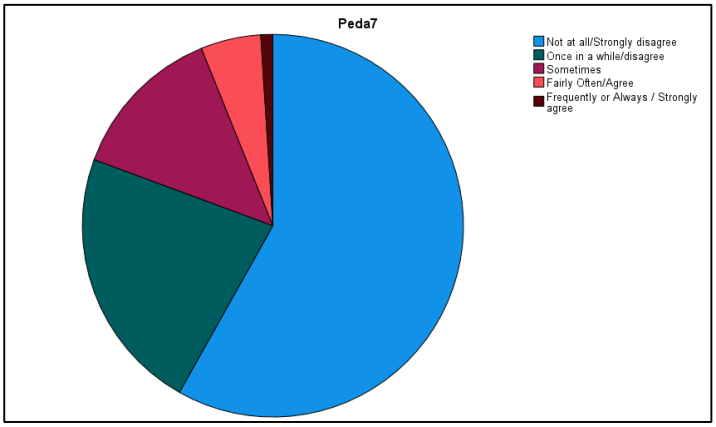

Figure 4.2

Response on ToT course

Very few of the respondents (4.1%) strongly agreed that higher-level education needs pedagogy; while the majority (65.3%) mentioned that higher-level education needs pedagogy sometimes.

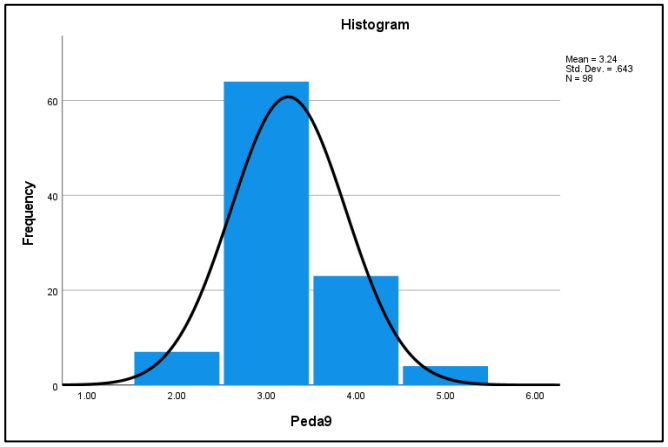

Figure 4.3

Pedagogy in Higher Education

4.5.2 Andragogy Style of Teaching

Surprisingly it is revealed in the study that most of the respondents (59.2%) have no idea on Andragogy and only 8.2% have idea about it.

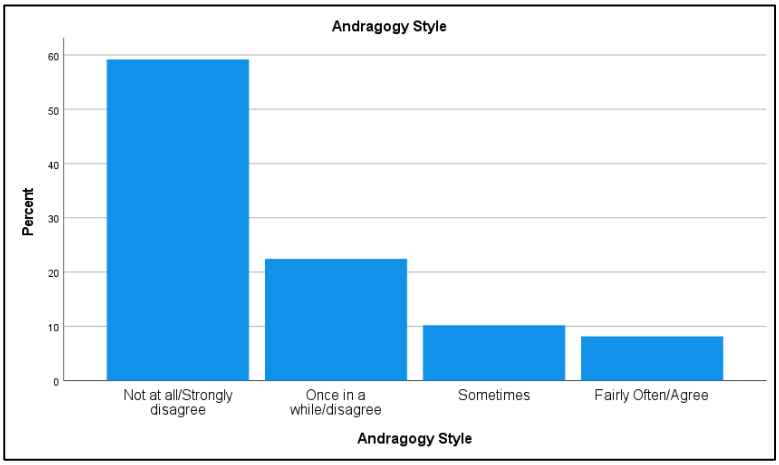

Figure 4.4

Idea on Andragogy

Most of the respondents (46.9%) agreed that higher level education needs andragogy style of teaching.

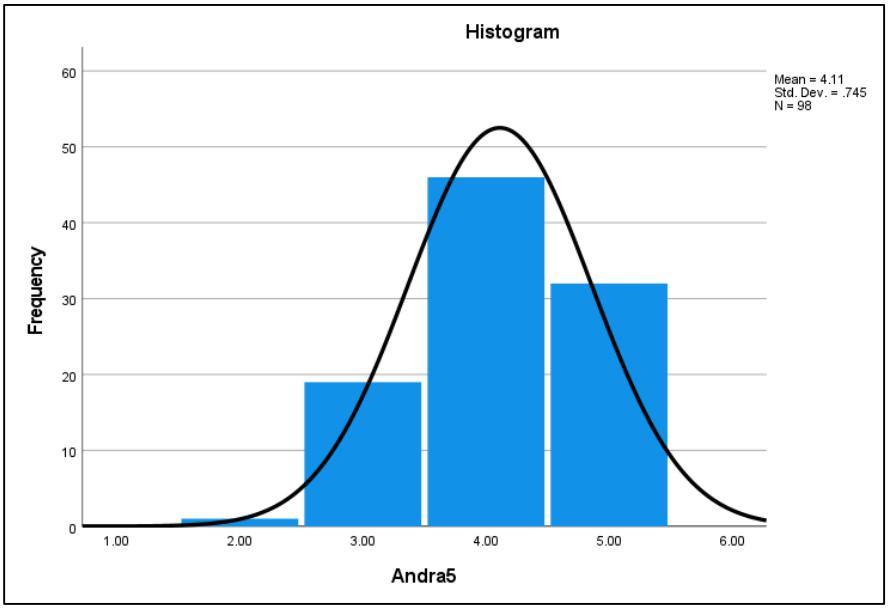

Figure 4.5

Andragogy in Higher Education

Among the respondents, 53.1 % agreed that andragogy style reflects the prophecy of teaching.

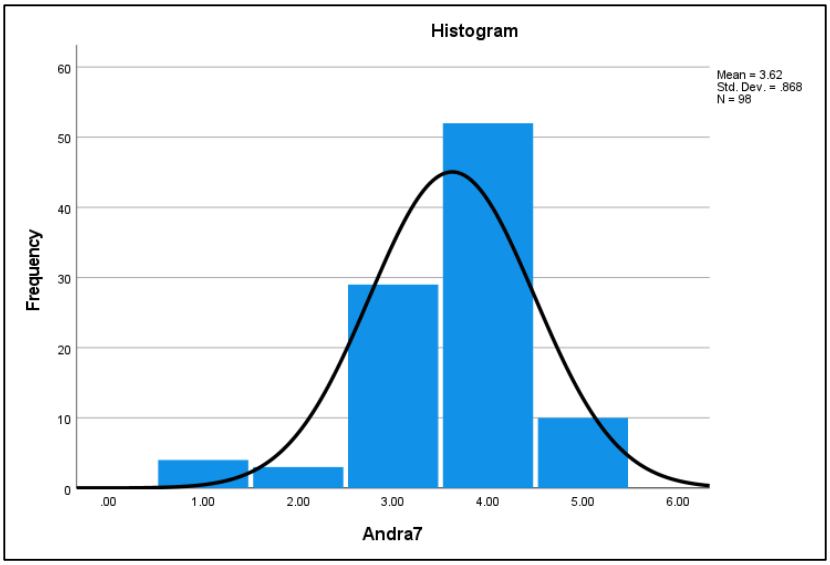

Figure 4.6

Reflects the Prophecy of Teaching

4.5.3 Heutagogy Style of Teaching

It has been found in the study that the majority of the respondents (71.4%) have no idea about heutagogy.

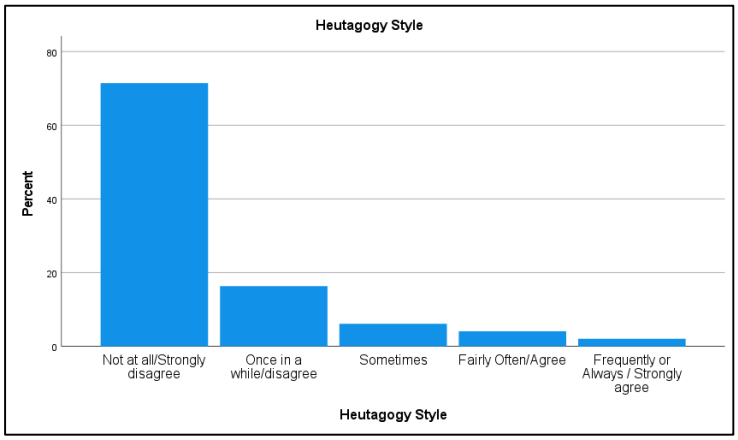

Figure 4.7

Idea on Heutagogy

60.2% of respondents agreed that heutagogy is not about learning content rather learning how to learn. Similarly, 92.9% of the respondents agreed that a combination of andragogy and heutagogy assures proper learning.

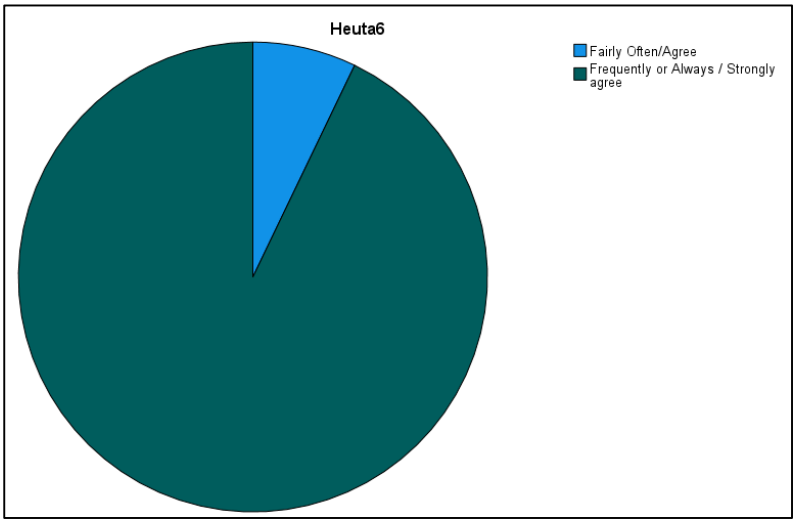

Figure 4.8

Combination of Andragogy and Heutagogy

4.6 Result of Key Informant Interview (KII)

With a view to obtaining the research objectives, seven Key Informant Interview (KII)s were administered carefully where the senior-level teaching professionals like Dean of Faculty, Chairman/Head of departments and Professors of different public universities (Appendix-F) participated and enriched the data collection process with their valuable opinions. Hence, the KII results are discussed below.

4.6.1 Key Informant Interview (KII) – 1

1. Teaching experience and idea about Pedagogy

   The use of pedagogy in higher learning institutions is not well addressed. Since university teachers have no foundation training on teaching-learning methods, and they had no previous training on this issue, except one/two lectures by IQAC in recent years, they do not have any experience of pedagogy-based teaching-learning experience.

2. Benefits and disadvantages of Pedagogy

   A teacher is able to create a learning-friendly environment and motivate and engage students in the learning process if he has knowledge in pedagogy. Training in pedagogy makes him confident and skilled in the scientific teaching-learning process.

3. Teacher-student relationship through Pedagogy

   Since teachers have seldom knowledge about pedagogy, they are not much more concerned about the teacher-student relationship and how does it influence the learning process. Sometimes, we may find a very good teacher who can influence students with his capacity but it rarely depends on scientific knowledge of pedagogy.

4. Andragogy as a modern teaching approach

   The question is not clear to me.

5. Transitional change between Pedagogy and Andragogy

   The question is not clear to me.

6. Application of Heutagogy

   Teachers use their style/self-created approach of delivering/disseminating knowledge and it is widely practiced. Sometimes, it gives a good result but the risk is always there for not getting the expected outcome. On the other, Heutagony can only be effective at the advanced level. Undergraduate students do not have enough maturity to compare the knowledge and getting adjusted with the process.

7. Directions towards the modern teaching-learning approach.

   To get maximum benefit following outcome-based learning, teachers must know modern teaching-learning approaches. Foundation training in teaching pedagogy needs to make mandatory for newly appointed teachers and after completion of the courses permanent position and promotion to a higher post can be offered. UGC or IQAC of the respective university can launch this training as it is offered in other services.

4.6.2 Key Informant Interview (KII) – 2

1. Teaching experience and idea about Pedagogy

   More than 12 years of teaching but did not find any structured training on pedagogy teaching style in my university.

2. Benefits and disadvantages of Pedagogy

   As a basic style of teaching newly joined teachers must know pedagogy and apply the style for ensuring their lectures. Students easily accept this style although it is an ancient approach to teaching.

3. Teacher-student relationship through Pedagogy

   Pedagogy is almost a teacher-centric approach and students can participate very often.

4. Andragogy as a modern teaching approach

   There is a need for andragogy at a higher level of education.

5. Transitional change between Pedagogy and Andragogy

   Still not visible as pedagogy is widely applied.

6. Application of Heutagogy

   By applying the knowledge of heutagogy students' learning will be more pragmatic.

7. Directions towards the modern teaching-learning approach.

Teachers must study, study and study. Especially, the young generation does not study. They just work for the sake of their job, but they must know the latest concepts of education. A combination of pedagogy, andragogy and heutagogy may bring a radical change in higher education.

4.6.3 Key Informant Interview (KII) – 3

1. Teaching experience and idea about Pedagogy

   I have been teaching my students with pedagogy.

2. Benefits and disadvantages of Pedagogy

   I am comfortable with pedagogy as I can design my classes at my own.

3. Teacher-student relationship through Pedagogy

   Our students are habituated with this style.

4. Andragogy as modern teaching approach

   There is no harm to know latest concepts.

5. Transitional change between Pedagogy and Andragogy

   Need more training to see the changes.

6. Application of Heutagogy

   Not possible until the teachers are well trained.

7. Directions towards the modern teaching-learning approach.

   University Grants Commission may endorse and encourage to the application of modern knowledge and concepts of education.

4.6.4 Key Informant Interview (KII) – 4

1. Teaching experience and idea about Pedagogy

   Attended ToT and similar training at the time of joining the university job, but do not see any training on pedagogy or another teaching style.

2. Benefits and disadvantages of Pedagogy

Pedagogy is a traditional approach of teaching. It is good for the basic level of students but the student of University level must be oriented with other methods as well.

3. Teacher-student relationship through Pedagogy

Students may often feel monotonous and thus, student-teacher relationship may be disturbed.

4. Andragogy as modern teaching approach

Many countries have already started applying this method but we do not have vast knowledge and we like to follow the traditional method.

5. Transitional change between Pedagogy and Andragogy

We have to struggle as our teachers are not well trained and most of the university follows traditional methods of teaching.

6. Application of Heutagogy

Before applying a structured training, session must be designed and well circulated. Ministry of education and UGC may jointly organize this type of sessions.

7. Directions towards modern teaching-learning approach.

It is the responsibility of a teacher to plan his lecture and classes that will benefit the students and help them to enjoy their education. Few guidelines and engagement of subject experts may be considered to accelerate this process.

4.7 Result of Focus Group Discussion (FGD)

Despite primary data and key informant interviews, the researcher conducted three different focus group discussions (FGD) in three public universities. Teachers of different categories and disciplines participated in the FGDs and shared their ideas to help the study result. The FGD findings are mentioned below.

4.7.1 Focus Group Discussion (FGD) – 1

Venue: Shahjalal University of Science & Technology (SUST)

No. of Participants: 6

Status of Participants: Dean/Head of Dept./Professor

Table 4.4

FGD Response

Item	Response
1. Teaching experience and idea about Pedagogy	University teachers have no foundation training on teaching-learning methods, and they have no previous training on this issue, except one or two lectures by IQAC in recent years.
2. Benefits and disadvantages of Pedagogy	Proper Training on pedagogy makes teachers confident and skilled in the scientific teaching-learning process.
3. Teacher-student relationship through Pedagogy	Pedagogy is almost a teacher-centric approach and students can participate very often.
4. Andragogy as a modern teaching approach	There is no harm to know the latest concepts.
5. Transitional change between Pedagogy and Andragogy	We have to struggle as our teachers are not well trained and most of the university follows traditional methods of teaching.
6. Application of Heutagogy	It is time for public Universities to think ahead and apply new concepts in education.
7. Directions towards the modern teaching-learning approach	UGC or IQAC of the respective university can launch this training as it is offered in other services.

4.7.2 Focus Group Discussion (FGD) – 2

Venue: Chittagong University

No. of Participants: 15

Status of Participants: Dean/Head of Dept./Professor

Table 4.5

FGD Response

Item	Response
1. Teaching experience and idea about Pedagogy	Many of the teachers, particularly the young generation have no idea about the Pedagogy style of teaching. Moreover, they did not attend such training before.
2. Benefits and disadvantages of Pedagogy	Very good to deliver a lecture but not appropriate for higher education.
3. Teacher-student relationship through Pedagogy	Cannot be assured all the time.
4. Andragogy as a modern teaching approach	University-level teachers should have an understanding of the latest approaches to teaching.
5. Transitional change between Pedagogy and Andragogy	Changes are visible in higher education of developed countries; although not that much in this country.
6. Application of Heutagogy	The best approach of teaching for senior students; especially those who prefer self-learning.
7. Directions towards a modern teaching-learning approach	University teachers must know the modern approaches to teaching to ensure proper learning.

4.7.3 Focus Group Discussion (FGD) – 3

Venue: University of Dhaka

No. of Participants: 6

Status of Participants: Dean/Head of Dept./Professor

Table 4.6

FGD Response

Item	Response
1. Teaching experience and idea about Pedagogy	Still, now most of the teachers are habituated with the pedagogy style of teaching.

2. Benefits and disadvantages of Pedagogy	Pedagogy is known for lecture-type learning but cannot promise higher-level education.
3. Teacher-student relationship through Pedagogy	Due to the blessings of ICT students look for new approaches rather than traditional methods of teaching..
4. Andragogy as a modern teaching approach	Most of the teachers do not know about andragogy.
5. Transitional change between Pedagogy and Andragogy	Universities have experienced the change globally. We may think of such changes at a significant level.
6. Application of Heutagogy	Heautagogy is a new concept for our teachers. Therefore, it will take time to see its result.
7. Directions towards a modern teaching-learning approach	University authorities may organize different sessions to enrich the teachers with modern concepts and methods.

4.8 Result Summary

In this section, the summary of the study result is entirely presented which includes the research objectives and presented below in table 4.8. Moreover, the results of the study findings reveal that study objectives were addressed sequentially in the study.

Table 4.7

Summary of Result

R0	Research Objectives	Results
RO_1	To explore the appropriate teaching-learning approaches at higher education	*Met*
RO_2	To find out the causes of practicing traditional methods at higher education	*Met*

RO_3	To determine the idea about modern teaching-learning practices at higher education	*Met*
RO_4	To determine the existence of Andragogical and Heutagogical practices at the university level	*Met*
RO_5	To determine the suitable teaching-learning approach at the university level	*Met*

4.9 Chapter Summary

This chapter focuses on the statistical analysis of the quantitative data obtained from the respondents. The chapter presented the data collection process, a data cleaning process, the profile of the respondents, non-response bias, multicollinearity, and descriptive analysis of the constructs. Furthermore, the chapter presented the results of the SPSS analysis. The findings revealed the existing teaching teaching-learning practices at higher education in university level. Furthermore, the chapter presented the findings in the light of the research objectives. The next chapter will discuss further the findings, implications, limitations, suggestions for future research directions and conclusions**.**

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1 Introduction

As reported in chapter five, this chapter delivers the discussions and implications of the findings from the research. There are four sections in this chapter. The first section is followed by a summary of the findings. Study recapitulation has been discussed in section two. Section three focuses on the discussion of the research findings. The implications of the study are highlighted in section four. In the following parts of the section, a discussion on the and limitations of the research is provided. In the final part of the chapter, the recommendations for future research and conclusion are included.

5.2 Recapitulation and Interpretations of Findings

The discussion focuses mostly on the research issues raised in the first chapter of this study.. The study findings are interpreted and discussed with the assistance of relevant previous studies. The detailed discussion and interpretations of the result findings by research questions and the objectives are mentioned below:

5.2.1 Is the Practiced Teaching-Learning Approach Appropriate at Higher Education?

The first research question of this study is that is the practiced teaching-learning approach appropriate in higher education? On the basis of the study analysis and findings this research question is addressed as follows:

The study findings revealed that the use of pedagogy in higher learning institutions is not well addressed. Since university teachers have no foundation training on teaching-learning methods, and they have no previous training on this issue, except one/two

lectures by IQAC in recent years, they do not have any experience of the pedagogy-based teaching-learning experience (FGD-1). Although it is well established that teaching professionals should attend the Training of Trainers (ToT) course for their professional excellence but 58.2% of the respondents did not attend such training and do not apply modern teaching methods. Surprisingly, the majority of the respondents (65.3%) mentioned that higher-level education needs pedagogy sometimes.

5.2.2 Is There any Root Causes of Practicing Traditional Methods of Teaching at Higher Education?

The second research question of this study is that is there any root cause of practicing traditional methods of teaching in higher education? On the basis of the study analysis and findings this research question is addressed as follow:

This study reveals that among the respondents 41.8% agreed that they are comfortable with the pedagogy style of teaching; whereas, 31.6% strongly agreed that they are comfortable with the pedagogy. 45% of the respondents agreed that they cannot think other than pedagogy. SPSS results further revealed that most of the respondents (59.2%) have no idea about Andragogy and only 8.2% have an idea about it. Therefore, traditional methods are still followed at higher-level education in Bangladesh.

5.2.3 Is the Idea of Modern Teaching-Learning Practices Suitable at Higher Education?

The third research question of this study is that is the idea of modern teaching-learning practices suitable at higher education? On the basis of the study analysis and findings this research question is addressed as follows:

Pedagogy is a traditional approach to teaching. It is good for the basic level of students but the student of University level must be oriented with other methods as well (KII-4). Furthermore, Pedagogy is almost a teacher centric approach and students can participate very often (FGD-1). Many countries have already started applying Andragogy method but we do not have vast knowledge and we like to follow the traditional method (KII-4).

5.2.4 Is there any existence of Andragogical and Heutagogical practices at the University level?

The fourth research question of this study is that is there any existence of Andragogical and Heutagogical practices at the university level? On the basis of the study analysis and findings this research question is addressed as follow:

By applying the knowledge of Heutagogy students' learning will be more pragmatic (KII-2). There may be a struggle as the teachers of public universities are not well trained and most of the university follows traditional methods of teaching (FGD-1). But most of the respondents (46.9%) agreed that higher-level education needs andragogy style of teaching.

5.2.5 Is there any suitable Teaching-Learning approach at University level Education?

The fifth research question of this study is that is there any suitable teaching-learning approach at university level education? On the basis of the study analysis and findings this research question is addressed as follows:

Among the respondents, 53.1 % agreed that andragogy style reflects the prophecy of teaching. It has been found in the study that the majority of the respondents (71.4%) have no idea about heutagogy. 60.2% of respondents agreed that heutagogy is not about learning content rather learning how to learn. Similarly, 92.9% of the respondents agreed that a combination of andragogy and heutagogy assures proper learning. Hence, this is the right time to think of and start the application of andragogy and heutagogy as the modern teaching-learning approach at university level education.

5.3 Limitations of the Study

This study has a few limitations. The primary limitation is that despite several communications and regular contact it was quite difficult to maintain the interview schedule of the respondents and meet them. Among other limitations, a few are mentioned as follows.

The samples for this research were drawn from teachers who are working in the public universities only; thus, the study variables examined in the study come from respondents of the public sector only. Hence, the findings gathered from this study do not represent what happens in private universities. The respondents in this research were hesitant as many of them are not acquainted with the study title and its variables.

The sample size of 98 used in the data analysis is considered to be at the minimum level required for a similar type of study. If more respondents participated in this research better result could be obtained from this study. The result of this study is limited to the perception of the university teachers towards the teaching-learning style of pedagogy, andragogy and heutagogy.

Moreover, despite of confirmed schedule and commitment of the respondents it became difficult to conduct the FGDs at satisfactory level. Additionally, class room observation was not possible due to the pandemic situation caused by COVID-19. In spite of the aforesaid shortcomings, this study is a good effort to investigate the teaching-learning style of pedagogy, andragogy and heutagogy. This research is the first of its kind, and some level of results under the study are indicated in the findings.

5.4 Recommendations

With a view to conquering the above limitations, this study recommends that future studies be conducted on other variables related to teaching-learning practices. As this study is cross-sectional in nature, thus, future studies should consider data collection over a long period of time to have sufficient time for it. This study uses only the teacher of specific public universities as the respondents; teachers of other universities including the private universities should be covered in future studies. The present study employs a quantitative research design along with FGDs and KIIS at short scale; a mixed triangulation design at a large scale may be employed in future research.

The current study was conducted in the selected public universities in Bangladesh. An opportunity is there to replicate the research in other educational institutions in Bangladesh as well. The study findings further suggest that pedagogy makes learners aware of the knowledge and skills that are required. Andragogy teaches them how to utilize the skill under controlled conditions, but Heutagogy teaches them how to use their creative, cognitive, communicative, collaborative, and digital talents in any situation. The study found that andragogy and heutagogy are more effective teaching-

learning approaches for producing erudite, knowledgeable, and capable professionals at the undergraduate level.

In brief, traditional methods are still followed at higher-level education in Bangladesh. Meaningfully, a set of recommendations are made as below for the policymakers to address the issue in the wider context. University teachers should attend the Training of Trainers (ToT) course for their professional excellence. These teachers must know modern teaching-learning approaches. Foundation training needs to be mandatory for the newly appointed teachers. Only after completion of the Foundation course permanent positions and promotions to higher posts can be offered. Above all, University Grants Commission (UGC) or IQAC of the respective university can launch such training as it is offered in other services.

5.5 Conclusion

In light of the study and on the basis of the research findings, it can be concluded that the study revealed the teaching-learning practices at university-level education in Bangladesh; whereas, the concept of andragogy and heutagogy is not well known among the majority of the teachers. The study has also provided empirical evidence of a significant need for a modern teaching-learning approach in higher education. In addition, the present study has contributed to the body of knowledge by providing empirical evidence about the concepts of pedagogy, andragogy and heautagogy.

Moreover, all the research objectives and research questions were answered. The study findings emphasize the application and importance of andragogy and heutagogy style of teaching. In a nutshell, it is expected that this study will help throw some light on the significance of andragogy and heutagogy as a modern teaching approach and how they can benefit the universities as a whole.

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APPENDIX A: SURVEY QUESTIONNAIRE

Teaching-Learning Practices in Higher Education: An Exploratory Study at University Level in Bangladesh

Dear Respondent,

Heartiest thanks for contributing time to complete this survey. Your contribution is highly appreciated.

The purpose of this study is to get your valuable opinions about a number of factors that are relevant to your organization. This is not a test. There is no correct or wrong answer to any question.

Your responses to this questionnaire will provide us with valuable feedback about exploring the teaching-learning practices at higher education level in Bangladesh. Furthermore, as you reflect on the questions, you likely will obtain new ideas to improve the education system at university level.

The information you provide will be treated as ***strictly confidential***. All analyses will be conducted on an aggregate level with no reference to individual responses.

The whole process will take you about 20-25 minutes. Don't worry or puzzle on an individual question. Response quickly and record your immediate thoughts.

If you have any question please contact the undersigned. This research is being conducted under the support of NAEM.

Thank you very much for kind cooperation in this study.

Dr. Khan Sarfaraz Ali
Associate Professor & Dean
Cox's Bazar International University
Cell: 01817528067, e-mail: sarfarazbim@gmail.com

APPENDIX 1: DEMOGRAPHIC PROFILE OF THE RESPONDENTS

[Please put tick (√) on the item that reflects your answer from the list of options that followed each question]

1. Gender:

   Male □ Female □

2. Age:

   25 years and less □ 26 - 35 year □ 36- 45 years □

   46- 55 years □ More than 55 years □

3. Marital Status

   Single □ Married □ Divorced □ Widowed □

4. Educational level

   Bachelor/Graduate degree □

   Masters/Equivalent degree □

   M. Phil/Doctorate □

   Others (if any) □

5. Department/Faculty

   Business □ Science □ Social Science □

6. Tenure of service in this organization

   2 years and less □ 3 - 6 years □ 7 - 10 years □

   More than 10 years □

7. Designation

   Lecturer □ Assistant Professor □

   Associate Professor □

   Professor □ Dean □

8. Type of Employment

   Full time □ Contractual □ Part-time □

APPENDIX 2: QUESTIONNAIRE ON TEACHING STYLE

(PEDAGOGY, ANDRAGOGY, HEUTAGOGY)

Pedagogy: The institution and teacher decide what the student will learn and how they will learn it
Andragogy: The teaching of adults (which can be pedagogical, heutagogical, or a blend of both)
Heutagogy: The student decides what to learn and how and is supported by outside resources, including the teacher

Please place tick (√) on the number in each box that you think correct for each question.

SL.	Following items will examine your thinking about the **TEACHING** style	(1) Not at all / strongly disagree	(2) Once in a while / disagree	(3) Sometimes	(4) Fairly Often/Agree	(5) Frequently, if not Always/Strongly Agree
1.	Comfortable with **Pedagogical** style					
2.	Students are accustomed with this style					
3.	Habituated with Pedagogy since primary schooling					
4.	Participated in Pedagogy training					
5.	Cannot think other than Pedagogy					
6.	Students' learning is assured through Pedagogy					
7.	Attended ToT course and practice modern methods of teaching					
8.	Pedagogy seems a traditional approach of teaching					
9.	Higher level education needs Pedagogy					
10.	Pedagogy articulates visions of the learning					
11.	Pedagogy helps sharing the knowledge					

12.	Pedagogy suggests new ways of looking at how to complete assignments					
13.	Pedagogy emphasizes the importance of having a collective sense of learning					
14.	Pedagogy expresses confidence that student will achieve					
15.	Have idea on **Andragogy**					
16.	Andragogy methods include discussion, problem-solving etc.					
17.	Andragogy requires that adult learners be involved in the identification of their learning needs and the planning of how those needs are satisfied					
18.	Andragogy is problem-centered rather than content-oriented					
19.	Higher level education needs Andragogy					
20.	Andragogy assures accurate learning					
21.	Andragogy reflects the prophecy of teaching					
22.	Have idea on **Heutagogy**					
23.	In Heutagogy, students become more self-determined learners and follow a heutagogical path in acquisition of new learning skills					
24.	Heutagogy contains flexible curriculum					
25.	Heutagogy focuses on pure learning					
26.	Heutagogy is not about learning content rather learning how to learn					
27.	Combination of Andragogy and Heutagogy assures proper learning					

APPENDIX 3: FOCUS GROUP DISCUSSION (FGD) CHECKLIST

1. Teaching experience and idea about Pedagogy
2. Benefits and disadvantages of Pedagogy
3. Teacher-student relationship through Pedagogy
4. Andragogy as modern teaching approach
5. Transitional change between Pedagogy and Andragogy
6. Application of Heutagogy
7. Directions towards modern teaching-learning approach.

APPENDIX 4: KEY INFORMNAT INTERVIEW (KII) CHECKLIST

1. Teaching experience and idea about Pedagogy
2. Benefits and disadvantages of Pedagogy
3. Teacher-student relationship through Pedagogy
4. Andragogy as modern teaching approach
5. Transitional change between Pedagogy and Andragogy
6. Application of Heutagogy
7. Directions towards modern teaching-learning approach.

APPENDIX B: RELIABILITY TEST

Table B1

Pedagogy Style of Teaching

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.688	.708	14

Table B2

Andragogy Style of Teaching

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.661	.675	7

Table B3

Heutagogy

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.609	.631	6

Table B4

Construct Reliability and Validity

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Pedagogy Style	88.8980	63.783	.286	.662
Peda2	88.9898	63.783	.310	.661
Peda3	88.9490	65.327	.142	.673
Peda4	90.5918	64.636	.155	.673
Peda5	89.5204	67.056	.069	.676
Peda6	89.3163	64.301	.262	.664
Peda7	91.2449	61.341	.395	.651
Peda8	89.3571	62.046	.354	.655
Peda9	89.6837	64.425	.325	.662
Peda10	89.7041	63.427	.396	.656
Peda11	89.5612	67.589	.007	.681
Peda12	89.8571	64.742	.259	.665
Peda13	89.9694	63.082	.385	.656
Peda14	89.7653	55.089	.103	.752
Andragogy Style	91.2551	60.687	.440	.647
Andra2	89.5510	61.466	.558	.645
Andra3	89.3980	64.778	.308	.663
Andra4	89.2653	64.919	.286	.664
Andra5	88.8163	67.718	-.007	.682
Andra6	88.8878	66.967	.061	.678
Andra7	89.3061	62.029	.396	.653
Heutagogy Style	91.4388	62.022	.360	.655
Heuta2	89.0510	63.121	.370	.657
Heuta3	88.6837	64.383	.329	.661
Heuta4	88.6837	65.023	.242	.666
Heuta5	88.3980	66.943	.075	.676
Heuta6	88.0000	67.938	.043	.676

APPENDIX C: DEMOGRAPHIC PROFILE

Table C1

Gender of the Respondents

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	69	70.4	70.4	70.4
	Female	29	29.6	29.6	100.0
	Total	98	100.0	100.0	

Table C2

Age of the Respondents

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	26 - 35 years	28	28.6	28.6	28.6
	36 - 45 years	47	48.0	48.0	76.5
	46 - 55 years	22	22.4	22.4	99.0
	More than 55 years	1	1.0	1.0	100.0
	Total	98	100.0	100.0	

Table C3

Marital Status of the Respondents

Marital Status					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	17	17.3	17.3	17.3
	Married	78	79.6	79.6	96.9
	Divorced	3	3.1	3.1	100.0
	Total	98	100.0	100.0	

Table C4

Education Level of the Respondents

Education level					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Masters or Equivalent	40	40.8	40.8	40.8
	M.Phil or Doctorate	57	58.2	58.2	99.0
	Others (Ph.D Fellow)	1	1.0	1.0	100.0
	Total	98	100.0	100.0	

Table C5

*Concerned Faculty/Dept. of the Respondents***Dept. or Faculty**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Business	21	21.4	21.4	21.4
	Science	33	33.7	33.7	55.1
	Social Science	44	44.9	44.9	100.0
	Total	98	100.0	100.0	

Table C6

Service Length of the Respondents

Tenure of Service					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 years and less	2	2.0	2.0	2.0
	3 - 6 years	32	32.7	32.7	34.7
	7 - 10 years	38	38.8	38.8	73.5
	More than 10 years	26	26.5	26.5	100.0
	Total	98	100.0	100.0	

Table C7

Designation of the Respondents

Designation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Lecturer	24	24.5	24.5	24.5
	Assistant Professor	23	23.5	23.5	48.0
	Asociate Professor	26	26.5	26.5	74.5
	Professor	23	23.5	23.5	98.0
	Dean	2	2.0	2.0	100.0
	Total	98	100.0	100.0	

Table C8

Employment Type of the Respondents

Employment Type					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Ful Time	97	99.0	99.0	99.0
	Contractual / on Probation	1	1.0	1.0	100.0
	Total	98	100.0	100.0	

APPENDIX D: BRIEF PROFILE OF THE KII RESPONDENTS

1. Professor Ahsanul Hasan (Dean, EEE, KUET)
2. Professor Dr. Md. Kamrul Hossain (Dean, University of Chittagong)
3. Professor Dr. Md. Manzoorul Kibria (University of Chittagong)
4. Professor Dr. Mezbah-ul-Islam (University of Dhaka)
5. Professor Dr. Faisal Ahmed (Dean, SUST)
6. Professor Dr. Md. Ismail Hossain (SUST)
7. Professor Dr. Rabiul Islam (University of Rajshahi)

APPENDIX E: LIST OF THE FGD PARTICIPANTS

SHAHJALAL UNIVERSITY OF SCIENCE AND TECHNOLOGY (SUST)

1. Prof. Dr. Faisal Ahmmed
2. Prof. Dr. Ismail Hossain
3. Prof. Dr. Neaz Ahmed
4. Prof. Tahmina Islam
5. Prof. Dr. Md. Al- Amin
6. Prof. Dr. Nazrul Islam

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1. Prof. Dr. Mezbah-ul Islam
2. Prof. Dr. Shahin Khan
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5. Prof. Dr. Md. Rabiul Islam
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Requested not to disclose.