

## PHENOMENOGRAPHY: A QUALITATIVE RESEARCH METHODOLOGY IN BANGLADESH

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### ABSTRACT

Theoretical framework, in educational research, guides the qualitative research process which is selected based on the researchers' goals, purpose, or focus of investigation (Ornek, 2008). Phenomenography, a qualitative research framework, is an innovative research methodology for the developing countries whereas developed countries has already been taken up. They have been using this empirical research methodology since last two decades (United Kingdom, Australia, Finland, etc). Therefore, the aim of this paper is to discuss the phenomenographic research methodology in the easiest way so that the novice researchers (who are new in phenomenography) in Bangladesh can bestow this methodology into their qualitative research paradigm. This methodology may contribute new insight to the objects of investigations (students, teachers, staffs from educational institutions) and find out the solutions of the problems connected with the educational institutions in a real setting of Bangladesh.

**Key Words:** Phenomenography, Qualitative research, Teaching-learning context.

### INTRODUCTION

A substantial amount of research has been carried out on students' learning and teachers' conceptions of, and approaches to teaching/learning in higher education that has benefited from a particular research approach, termed as 'phenomenography'. It is a qualitative research approach that has originated in the mid-70s from the original work of Ference Marton and his colleagues at the university of Goteborg in Sweden, but the term had come to be used by Ference Marton himself in the 80s. (Mann, Dall'Alba, & Radcliffe, 2007; Marton, 1981; Richardson, 1999). This empirical research methodology has been taken up by many other researchers in the United Kingdom (Samuelowicz & Bain, 1992), Australia (Prosser, Trigwell, & Taylor, 1994), Finland (Lindblom-Ylänne, Trigwell, Nevgi, & Ashwin, 2006), HongKong (Marton, Watkins, & Tang, 1997), China (Gao & Watkins, 2002), Taiwan (Tsai & Kuo, 2007) and so on. Bangladesh, one of the developing countries, could be benefited by introducing this methodology at their educational systems. Therefore, the aim of this article to discuss the phenomenographic research methodology in the uncomplicated way so that the novice researchers (who are new in this research paradigm) in Bangladesh can understand this methodology and hence implement this methodology into their qualitative research arena. This methodology may contribute new insight to the objects of investigations (students, teachers, staffs from educational institutions) and find out the solutions of the problems connected with the educational institutions in a real setting.

### WHAT IS PHENOMENOGRAPHY?

Phenomenography is a qualitative research approach that has been designed to find out peoples' qualitatively different experiences of the world in terms of categories of descriptions. (Marton, 1981,1986). The term 'Phenomenography' has its Greek etymological root, which has derived from the two words 'phainomenon' (appearance) and 'graphein' (description). Therefore 'phenomenography' is a description of appearances (Hasselgren & Beach, 1997). Ference Marton (1986) defines phenomenography as –'a research method for mapping the qualitatively different ways in which people experience, conceptualise, perceive, and understand various aspect of, phenomena in, the world around them' (p. 31). In this research often depicts how people understand, distinguish, recognize, imagine, conceive or experience different aspects (characteristics) of the world around them, which can clearly be articulated in one word: "Conception" (Carbone, Mannila, &

Fitzgerald, 2007; Marton & Pong, 2005). Therefore, it is dealing with people's perceived understanding or experience of a particular phenomenon.

'Phenomenography' is a research approach, based on a second-order perspective which means how subjects (the person/population of the research) experienced/conceived an object (aspect of the world) in a given situation. It is the subject's conceptions derived from their understanding and experience towards the object. This is different from the first-order perspective in which the researchers are interested in how the object actually is (Marton, 1981; Sjöström & Dahlgren, 2002). For example, in the second order approach, the experiences or conceptions are revealed from the participants not directly from the researchers whereas in first order approach experiences are coming out from the researchers.

Later Michael Prosser (2000b), one of the pioneer phenomenographers, perceived this research approach as an appropriate research methodology to study teachers' and students' conceptions of teaching and learning, their approaches to teaching and learning, and along with the outcome of teaching and learning activities. The present study is based on the Prosser (2000b) definition of phenomenography where main focused on how Bangladeshi teachers will bestow this research methodology into their teaching learning context. Therefore, Bangladeshi education system could be benefited similar to other developed countries who has already investigated many of their educational problems by using this methodology.

#### **PHENOMENOGRAPHIC RESEARCH: DIFFERENT CONTEXT**

Marton (1981), later on Dall'Alba (2000) mentioned three different lines of phenomenographic research. The first line focuses on the qualitatively different ways of experiencing or comprehending learning and how it links with different approaches taken on by the learners and their outcomes, which has been described by Marton (1981) as 'general aspects of learning'. The second line is about associating such research with a specific content domain e.g. physics, science, engineering, medical science, vocational (nursing, automobile) etc. The third line of research is portrayed as "pure" phenomenographic research that concentrates on people experiencing or understanding different features of their reality, not in subjects studied in education, but in their daily lives. As for example, the people questioned about their conceptions concerning political scenarios, market prices and taxation. During the last three decades, large amounts of research have been carried out using this research methodology, hence the former two lines of research are more dominant than the last one. This paper intention is to provide a simpler detailed discussion about the former two domains of phenomenographic research so that trainee researcher could be benefited for implementing in their educational context.

#### **AIM OF PHENOMENOGRAPHIC RESEARCH**

The main aim of phenomenographic research is to discern the qualitatively different means of subject experience, and to conceptualise, interpret or grasp a range of phenomena and aspects of the world. The researchers in this paradigm believe that people are experiencing or conceiving particular phenomena in a limited number of qualitatively different ways (Bowden, 2000; Marton, 1986). Hence phenomenographers search for qualitatively different, but logically interconnected conceptions or understandings that a group of people endure for a particular context (Marton, 1994). The aim of the this research approach described more specifically by Prosser (2000b) for educational settings, as : "to develop an understanding of the relations between the teacher's and student's experiences of teaching learning, with the eventual aim of improving the quality of student learning" (p. 35). Therefore, it investigates teachers and students experience towards teaching learning situation in order to improve the quality of education.

#### **RELATION BETWEEN SUBJECT, OBJECT AND RESEARCHERS**

Experience (conception, understanding, perception, apprehension) is not a separate entity, rather it is relational (Bowden, 2005). Phenomenographic research does not consider them (subject and aspect of the world) as a separate entity in a given phenomenon rather it always seeks a relation between these two entities.

More clearly, the research subject (the person who experiencing the phenomenon) and the aspects of the world (object) are not considered as separated rather they form a relation between them (see Figure 1). Thus, experience sets up a relation between a person and a given phenomenon in the world, which is titled as 'a relational approach' (Limberg, 2000). Hence relational approach is simply the close relationship between subjects and aspects of the world through which researcher can gain the subject's experience. This relation can be explained further by the following 'Figure 1'

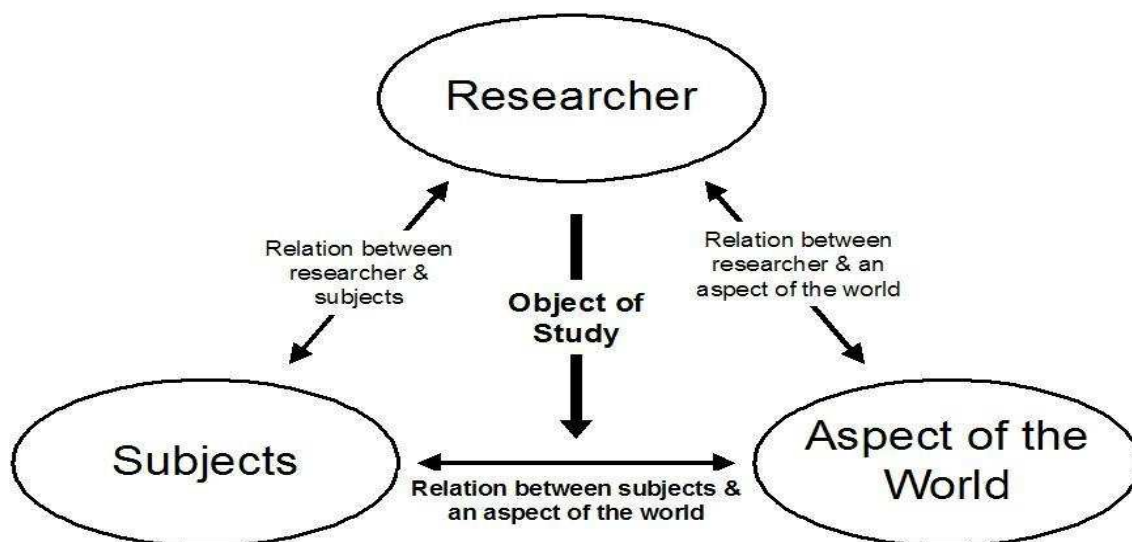


Figure 1: Relationship between objects with subjects and researcher (Based on Bowden 2005)

Thus, this research methodology is to investigate the relationship between the subjects and objects (aspect of the world) in a given situation by the researcher (phenomenographer). Therefore, phenomenographic research approach focuses on non-dualistic<sup>1</sup> ontological perspective which is neither an objective approach (independent of human account) nor it takes a subjectivist approach (focus on internal structures by the subject) (Mann, et al., 2007; Marton & Booth, 1997). Hence the subject and aspect of the world of a study are not independent rather they are intertwined with each other. Let us consider an example provided by Ornek's (2008) work where the existence of relationship between object and subject is more clear. When children are asked to create the number six, one may come up with 4+2, another might say 5+1, and other can reply with 3+3. Their decisions may come from their experiences related to the number 6; it could be reflections, or many other possibilities. In all the scenarios, though, 6 is created with a pair of numbers: 4 and 2, 5 and 1 or 3 and 3. As a result, researchers simply cannot deal with an object without understanding or having experienced it in some way. In the above case, the subject (children) and the object (counting numbers) are not independent; rather they are intertwined with each other.

In order to understand people's experience, Marton and Booth (1997) described referential and structural aspects of the experience (see Figure 7). The referential aspect of the experience is mentioning or highlighting the direct object or a particular meaning of the object. It is defined as a particular phenomenon which we are undergoing (experiencing) as the way it is, whereas the structural aspect is defined as how people acted towards something (an action), how they go carry out something, how something is acted upon or carried out (González, 2011; Marton & Tsui, 2004). The structural aspect of an experience has two sides, outer structure and internal structure of an object. The external structure of the way of experiencing a specific phenomenon concerned is to discern it from the outer context. This is called as external horizon. On the other hand, the internal structure of the way of experiencing a particular phenomenon is to discern the parts of that phenomenon and how they are interrelated as a whole object, which is called as internal horizon (Marton & Booth, 1997). Hence external and internal horizons, together form the structural aspects of people's

<sup>1</sup> non-dualistic ontological perspective means the people (subject) and phenomenon (object) are not separated, rather they are connected.

experience of phenomenon. Marton and Booth have drawn a graphical presentation of the way of experiencing as following Figure 2:

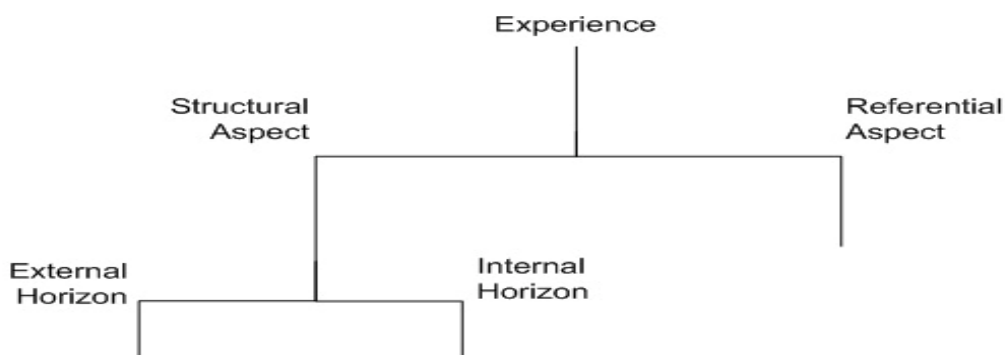


Figure 2: Component of Experience, Source: Marton & Booth, 1997, p. 88

The structural and referential aspects are not separated (though different) rather they are dependent and intertwined (Marton & Pong, 2005). Trigwell (2000) addressed a similar statement, ‘the structural and referential are also two internally related components of an experience’ (p. 74). In phenomenographic research this referential aspect is often called the ‘what’ aspect of an experience whereas the structural aspect is called the ‘how’ aspect of an experience. In an educational research context, students’ learning experience can be categorised as (i). referential aspects, for example, what students think about learning, their experience or comprehension of learning as a direct object and (ii) structural aspects, how students carry out or go about their learning (Marton & Booth, 1997). The structural aspect is further divided into structural aspect: (i). students’ act of learning, focusing on structure and (ii). referential, focusing on their intention towards the act (see Figure 3). Here, the structural aspect which has been called the ‘how’ component, relates to the approaches to learning and teaching categories (Trigwell, 2000).

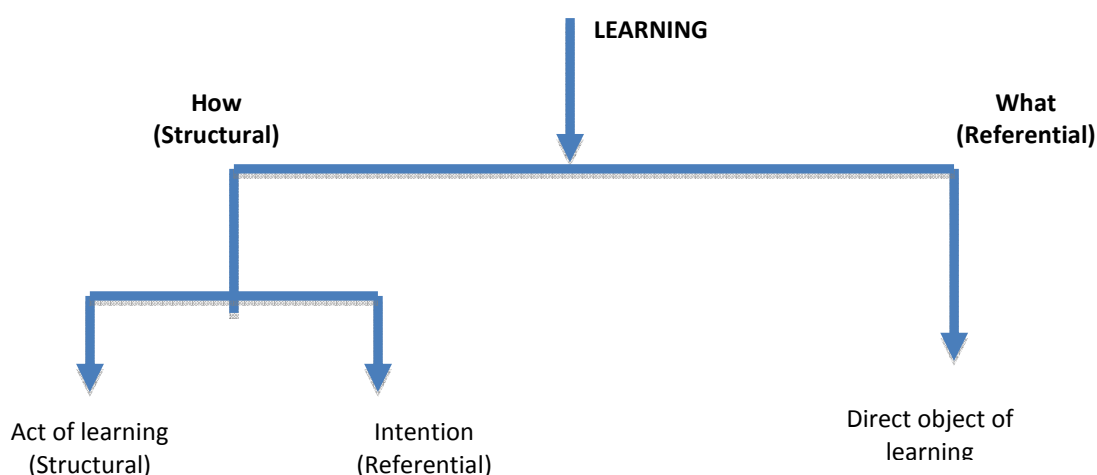


Figure 3: Experience of learning, source Ellis et al.(2006b)

#### METHOD OF DATA COLLECTION

Interviews are one of the primary media of data gathering in phenomenographic research (Åkerlind, 2005a; Åkerlind, Bowden, & Green, 2005b; Marton & Booth, 1997). Phenomenographic data may also be gathered by other methods (Walsh, 2000). For example, the researcher can interpret people’s conception by studying their behaviour under certain controlled situations (Marton, 1986), it can be conducted by using open-ended

questionnaires (Bliuc, Casey, Bachfischer, Goodyear, & Ellis, 2012). However, most phenomenographic studies used interviews as the medium of data collection (Åkerlind, 2005a; Limberg, 2000). Another argument is in relation to sample size or the number of participants needs to be considered during data collection. Trigwell (2000) recommended fifteen to twenty interviewees in this research practice. He had stated that a reasonable amount of variations could be provided by a minimum of ten to fifteen participants, whereas effective management of the gathered data could be brought about and allowed by a maximum of twenty (Trigwell, 2000). Moreover, this methodology requires as much variation in experience as possible. This is achieved with participants from various disciplines, level of experiences, teaching position, age and gender (Åkerlind, 2004). Therefore, for effective data management and maximum variation could be achieved by focusing on the appropriate number of participants. The following guidelines ought to be precisely adhered to during the data collection period.

1. Each interview should conduct with an open and friendly framework which allow interviewees to explore their understanding, experiences or ideas as fully as possible (Åkerlind, et al., 2005b; Bowden, 2000).
2. Especial care and guidelines should be taken when follow up questions would be required during the interview (Åkerlind, et al., 2005b; Prosser, 2000b).
3. There is another recommendation regarding 'bracketing' researchers own experience, own idea or concept while using follow up questions (Åkerlind, et al., 2005b; Green, 2005; Prosser, 2000b). Besides the researcher should take a non-leading role during the interview to create an environment where interviewees could reflect their awareness completely.
4. The data collection will be taken place as one interview basis. If the participants describe his/her awareness completely during the semi-structure interview session then no need to go back to interviewees for additional interviews (Green, 2005).

## DATA ANALYSIS

After collecting the data, the single most important and challenging part of phenomenographic research is to analyse the verbatim transcripts of the interview data (Åkerlind, 2005a; Prosser, 2000a). The interview will be audio-recorded and/or video recorded (video recording is optional) and will be initially transcribed verbatim, then analysed qualitatively. The aim of data analysis is to identify and discern the subjects' qualitatively different experiences or understanding in a limited number of categories. In order to achieve this, the data analysis will be guided by the research questions of a particular research. In this research methodology, there is no single technique for data analysis (Marton, 1986). González (2010), for example, employed five steps while Sjöström & Dahlgren (2002) employed seven. The author, here, has preferred the seven steps of Sjöström & Dahlgren (2002) to explain the procedure of data analysis in phenomenographic research method because of two reasons : first, these seven steps are easy to understand for the novice researchers and second, these steps do not conflict with González's (2010) five steps. The steps are as follows:

*(i). Familiarisation step:* the transcripts will be read several times in order to become familiar with their contents. This step will correct any mistakes within the transcript.

*(ii) Compilation step:* The second step will require a more focused reading in order to deduce similarities and differences from the transcripts. The primary aim of this step is to compile teachers' answers to the certain questions that have been asked during interviews. Through this process, the researcher will identify the most valued elements in answers.

*(iii). Condensation step:* This process will select extracts that seem to be relevant and meaningful for this study. The main aim of this step is to sift through and omit the irrelevant, redundant or unnecessary components within the transcript and consequently decipher the central elements of the participants' answers.

*(iv). Preliminary grouping step:* the fourth step will focus on locating and classifying similar answers into the preliminary groups. This preliminary group will be reviewed again to check whether any other groups show the same meaning under different headings. Thus, the analysis will present an initial list of categories of descriptions.

(v). *Preliminary comparison of categories*: this step will involve the revisions of the initial list of categories to bring forth a comparison among the preliminary listed categories. The main aim of this step is to set up boundaries among the categories. Before going through to the next step, the transcripts will be read again to check whether the preliminary established categories represent the accurate experience of the participants.

(vi). *Naming the categories*: After confirming the categories, the next step will be to name the categories to emphasise their essence based on the groups' internal attributes and distinguish features between them.

(vii). *Final outcome space*: in the last step, the researcher hopes to discover the final outcome space based on their internal relationships and qualitatively different ways of understanding the particular phenomena. It will then represent the categories in a hierarchy.

### OUTCOMES OF PHENOMENOGRAPHY

Similar to other research methodologies, this research approach should follow a coherent method from the beginning to the end. In order to identify faithful outcomes from this methodology, Bowden (2000) states that the study should begin with a clear intention, it should be organised with a particular purpose. Similarly, Marton (1994) says that, "whatever phenomenon or situation people encounter, we can identify a limited number of qualitatively different and logically interrelated ways in which the phenomenon or the situation is experienced and understood". Therefore, phenomenographic research outcomes will come out in a limited number of categories. These categories are logically and hierarchically organised (Marton, 1994) which is called 'categories of description' and they are derived from the subject's experience in a particular situation after careful interpretation. Åkerlind, Bowden et al. (2005b) further added that the categories of description should be 'neatness' which means categories of experience should be kept apart from individual experience. Hence, categories of description should not be come up with researcher's own understanding rather researchers should interpret the participants experience (researchers should not focus on individual participant experience). Collier-Reed, Ingerman, & Berglund (2009) states that individuals will not be able to recognise 'their' contribution to the categories of description.

Moreover, the categories of description include some variation that distinguishes the particular category from other categories. Thus categories of description depict different ways of experiencing a phenomenon collectively which represent a 'structured set' (Åkerlind, 2005a). Therefore, categories of description come up with structural relationships between different categories. This structural relationship, often formed as a chart, table, etc., represents the 'outcome space', which is the final outcome of this research methodology (Marton, 1994). Thus, the phenomenographer does not aim to articulate merely a set of different connotations (meanings) for a phenomenon. Rather, he/she seeks to identify reasonably (logically) structured various meanings of categories that have a logical connection with one another, and also a connection that is hierarchical.

This outcome space gives a total experience of subjects in a specific phenomenon that ensures all the possible range of experiences that a number of people have experienced in a given situation (Åkerlind, 2005c). Marton and Booth (1997) introduced three criteria for evaluating the quality of the outcome spaces: (i). Something unique or distinctive about the way of experiencing the feature of the phenomena should be reflected by the individual category of outcome space. (ii) The categories are logically linked and have a relationship that is frequently hierarchical; and (iii). The outcome space should be parsimonious, i.e. the main variations in experience should be presented by as few categories as possible.

### TRUSTWORTHINESS (RELIABILITY AND VALIDITY)

Establishing trustworthiness in phenomenographic research is important like other qualitative research methodology. By checking the validity and reliability of the research, trustworthiness is ensured in qualitative research (Åkerlind, 2012). Phenomenographers should emphasise validity and reliability checks in order to

establish rigour in their research (Collier-Reed, et al., 2009). A brief description of these two factors is mentioned below:

*Validity check in phenomenography* :Validity in phenomenographic research is considered as the extent to which the research findings are replicated in phenomenon under investigation (Åkerlind, 2005c). In such research, two types of validity checks are commonly practiced (Åkerlind, 2005c; Kvale, 1996; Mann, et al., 2007). They are the communicative validity checks and the pragmatic validity checks.

The ability of the researcher to convince the relevant research community that the research methods and the concluding interpretations of the results of the study are deduced properly is known as 'Communicative Validity Check'. (Åkerlind, 2005c; Kvale, 1996). According to Åkerlind (2005c) such validity is checked by the prevalence of research seminars, conference presentations and acceptance of peer-reviewed journals. The pragmatic validity check signifies how the outcome of the research is beneficial or helpful to the target audience. (Åkerlind, 2005c; Kvale, 1996). Through the usefulness and significance of research findings, this validity will be checked.

*Reliability in phenomenography*: Reliability, in qualitative research, refers to 'replicability' of results. This is ensured through the use of appropriate methodological procedures to obtain quality and consistency in data analysis (Åkerlind, 2005c; Kvale, 1996). According to Åkerlind (2005c), two types of reliability checks are commonly used in interview-based qualitative research – the intercoder reliability check (two researchers independently code interview transcripts and compare) and the dialogic reliability check (agreement between researchers is reached through discussion). The researcher will be responsible for initially analysing data and finding out the categories. Later, the categories of description will be confirmed through discussion with other researchers who are involved with the project or other expert researchers who had expertise in phenomenographic analysis. Moreover, to further ensure reliability, the researcher aims to make their interpretive steps especially detailed with examples. Therefore, this research will describe detailed step-by-step descriptions of the analysis of the data.

#### **EDUCATIONAL BENEFITS OF PHENOMENOGRAPHIC RESEARCH**

The results of Phenomenographic research can benefit the higher educational system of Bangladesh. In order to improve the quality of university teaching in Bangladesh, then we must look the teachers' conceptions or understanding towards their own subjects, as well as students' conceptions or understanding towards their learning of particular subjects. It is evident from the previous findings that learning about good teaching and becoming an expert teacher depends on a process of conceptual change (Martin & Ramsden, 1992). Teachers might undergo staff development programs but the practical teaching-learning situation will not be changed unless the teachers change their conceptions. Therefore, previous research has found that teachers' conceptual changes have real impact in professional development (see Ho, Watkins, & Kelly, 2001; Ramsden, 1991). If teachers change their conceptions, only then will teachers' development programs be successful. Therefore, the practical significance of this research methodology is related to changing teachers' conceptions of teaching, which will have impact on their approaches to teaching; understanding students' learning practices which will result in better learning outcomes; and also to have impact on teachers' professional development in higher educational institutions in Bangladesh. In addition, curriculum developers and education planners could be benefited by understanding teachers and students experience towards teaching-learning situation.

#### **CONCLUSION**

In conclusion, let me summarise it all: Through this paper, I am not claiming that phenomenography is superior to all other theoretical frameworks, rather I would contend that it provides a positive means to examine alternatives where others fall short. It is supported by other prominent researchers, as for example Svensson (1997) stated "It represents a reaction against, and an alternative to, the then dominant tradition of positivistic, behaviouristic and quantitative research (p. 171). Therefore, the practical implications of this research methodology are: to change the conceptions of teachers in order to have an effect on their teaching

approaches; understanding the learning practices of students that will produce better learning outcomes. In the end, it will also lead to the professional development of teachers in higher educational institutions in Bangladesh, with a greater impact.

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