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Learning Motivation-Achievement Theory Utilizing Deductive Approach

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Abstract

Motivation is considered as an inner force of accomplishments. It is perceived as a powerful force behind our behavior and actions that take place in every field of our lives. Especially academic motivation, referring to the achievement in the world of knowledge. In an educational setting, educators must have a general understanding of the term and its underlying mechanisms contributing to the success of students. This study sought to generate a theory of the relationship of motivation and academic achievement. With this purpose, this paper will utilize the deductive axiomatic approach in theory generation adapting the steps of Padua. There are three axioms constructed, namely, (1) Motivation is interdependent with achievement; (2) Motivation is a predictor of performance; (3) Motivation is associated with one's orientation towards a goal. From these axioms, six propositions were formulated; (1) High motivation enhances learning achievement; (2) Perceived academic achievement can sustain motivation; (3) Performance is associated with intrinsic motivations; (4) Performance is linked to extrinsic motivations; (5) Motivation should focus on performance orientation; (6) Motivation should be guided on mastery orientation. With these propositions, the Learning Motivation-Achievement Theory was developed. This theory emphasizes the strong positive correlation of motivation and learning achievement.

Keywords: Deductive axiomatic; motivation; achievement; Learning Motivation-Achievement Theory.

1. Introduction

The CoViD-19 Pandemic has challenged the educational landscape worldwide. The pandemic has pushed the educational sector on the pedestal of transitioning and adapting new learning modalities, multi-tasking through responding and learning new technology for online modes of instruction, and much more. Everything lies with one underlying motive-students' benefit. Student motivation is a major concern, irrespective of which learning modality is adopted. Thus, teachers at this time need to look into approaches for constructive student engagement that can help raise student's motivation.

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Acquisition of knowledge plays an important role in the progressive society that one can assert that people are living in the knowledge era at the present time. Success and academic achievement of students reflect the success of the whole educational system in terms of goal setting and fulfillment of individual needs. Elements and consequences contributing to learning and academic achievement are very broad, and the identification of these determinants is of great importance in solving the problems and insufficiencies available in the educational system.

In research from the authors [18] one of the facets involved to academic achievement and the enhancement of educational output is to create motivation in people for learning. In fact, some researchers believe that learning and motivation are so interconnected that there is no possibility of learning perception without motivation perception [32]. The strong positive correlation between motivation and academic achievement is an affirmation for this interconnection. According to the author [26], students with higher motivation for learning usually learn more rapidly and make greater progress in comparison with those with lower levels of motivation for learning.

The term motivation has various definitions. According to the author [6] motivation is defined as the desire and incentive of an individual to engage in a specific activity, while author [34] referred to motivation as students' effort to enhance performance. Students' motivation is paramount to academic success. The findings of author [36], showed a very strong positive correlation between students' motivation and their academic achievements. Similarly, the authors [18] observed that students who are highly motivated recorded significantly higher academic achievement than those who are lowly motivated.

Learning is an all-around mental phenomenon in which motivation is one of the key factors [25]. Intrinsic motivation is often referred to motivation inherent by students as opposed to extrinsic motivation coming from external sources, usually the teacher. Desirable educational practice has been widely considered to support intrinsic motivation [31]. Achievement motivation provides a structure for describing students' behavioral response to challenge, which then influences a variety of variables, such as preference for challenging tasks, persistence in the face of difficulty, school engagement, and achievement (Day, 2011).

Like achievement motivation, a student's intrinsic motivation includes a student's preference for challenging tasks, persistence, perceived competence, and academic achievement [14]. Research suggests that learning can be jointly influenced by these variables because both emotion and motivation interact with executive control to determine behavioral outcome. These findings demonstrate the link between achievement motivation and learning and further demonstrate the importance of a theory that integrates these variables.

Thus, this paper will investigate the importance of student's engagement and motivation in education by formulating the **Learning Motivation-Achievement Theory** that will contribute to academic achievement and enhancement of educational output of students.

2. Literature Review

Learning motivation has been widely discussed in education research [24]. In fact, students' motivation has been widely accepted as a key factor which influences the rate and success of learning. According to author [34],

motivation is an important component for learners to achieve success in any learning environment. Previous studies had shown that learners lacking in motivation often encountered academic difficulties in school. Therefore, the most important responsibility for teachers is to foster learners' motivation. According to author [19], learners' motivation was considered as a crucial factor in teaching and learning process at all levels of education. Motivated students will enjoy learning inside and outside the classroom. Mostly, these students believe in their ability and will take responsibility for their own learning.

Motivation itself has a vast scope to cater for, and several motivational theories are relevant to the formulation of axioms and propositions. These theories contribute to the essential outcomes of the learning process without being dependent on any other theories in the education domain.

Intrinsic and Extrinsic Motivation Theory. According to authors [31], intrinsic motivation defines an activity done for its own sake without the anticipation of external rewards and out of a sense of the sheer satisfaction it provides (1990). Some studies show that intrinsic motivation and academic achievement share significant and positive correlation. Intrinsic motivation can direct students to participate in academic activities to experience the fun, the challenge, and the novelty away from any external pressure or compulsion and without expectations of rewards [31].

Self-determination Theory. This theory addresses intrinsic and extrinsic motivation further. It explains it in terms of self-regulation, where extrinsic motivation reflects external control of behavior, and inherent motivation relates to true self-regulation [31]. SDT tells us that intrinsic motivation is closely related to the satisfaction of basic psychological needs of autonomy, competence, and relatedness, and illustrates how these natural human tendencies relate to several key features in the learning process. Relatedness provides the feeling of safety and connectedness to the learning environment where such enables and enhances students' academic performance and motivation [35].

ARCS Model. ARCS is an abbreviation for Attention, Relevance, Confidence, and Satisfaction. The ARCS model is an approach to instructional design that focuses on the motivational aspects of the learning environment by addressing four components of motivation which are arousing interest, creating relevance, developing an expectancy of success, and increasing satisfaction through intrinsic and extrinsic rewards [22]. The ARCS model stresses capturing students' attention as critical to gaining and sustaining their engagement in learning and shows how this can be accomplished through the use of attractive and stimulating medium or learning material that is relevant to their experiences and needs. It recognizes how confidence is related to the students' anticipation of success and how positive feelings about the learning process led to greater satisfaction from the acquisition of knowledge [22].

Social Cognitive Theory. SCT refers to the acquisition of knowledge by direct observation, interaction, experiences, and outside media influence [3]. SCT illustrates how people gain and maintain several behavioral patterns and provides basic intervention strategies like interactive learning, which allows students to gain confidence through practice [7].

Expectancy Theory. This is originally developed to explain how the work environment can motivate employees, strives to show the relationship between the expectations of success and anticipation of rewards and the amount of effort expended on a task and how it relates to the overall performance [30]. In the educational context this would translate into the student perception that their effort will lead to good or better performance (expectancy) followed by student's belief that their performance will lead to achieving the desired goal and rewards (instrumentality) and lastly, the value of the rewards is satisfactory and support the goals of the student (valence) [16].

These reviews of related literature and studies would provide a substantial understanding of why a theory in learning motivation achievement should be expounded. The different theories and articles have shown that motivations remain a vital recipe for learning and achievement.

3. Statement of the Problem

This study sought to establish and formulate a theory in education, which is the Learning Motivation-Achievement Theory for the purpose of making the teaching- learning process successful by way of academic achievement and enhancement of educational output of students.

4. Research Design and Framework

The theory proposed in this paper on learning motivation and achievement was conceptualized through the deductive form of reasoning. Deductive reasoning is a logical process in which a conclusion is based on the concordance of multiple premises that are generally assumed to be true [19]. Deductive reasoning is sometimes referred to as top-down logic. As claimed by the authors [24], applying deductive reasoning by the researcher would involve the researcher working from top-down thinking starting with a theory to hypothesis and then to observations to add to or contradict the theory.

In this study, the process in formulating the **Learning Motivation-Achievement Theory** is anchored on the deductive axiomatic approach illustrated below following the steps in generating a theory adapted from Padua (2012) and Cabello (n.d.).

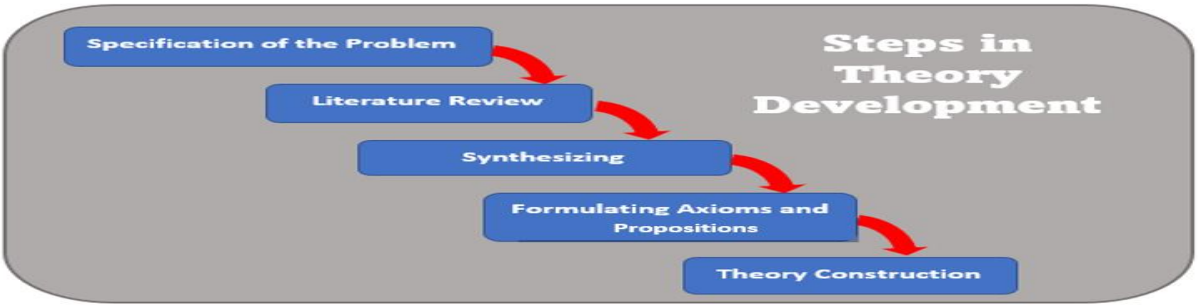

Figure 1: Deductive Axiomatic Approach in Theory Development

(Adapted from Padua)

Specification of the Problem. As claimed by author [8], the formulation of the research problem and its objective are the most important decisions in designing research in all types of systematic and theory-oriented research. Specification of the problem is the first step in formulating a theory using the deductive axiomatic approach.

Literature Review. To develop a theory, it is important to research the academic precedents related to the theory. Thus, the second step in theory development is reading literature review to find out everything about the topic and to determine what has already been tested, proven and refuted. Relevant literature is an essential feature of any academic research and project [28]. Literature review is the building block of all academic research activities, regardless of discipline, to build on and relate to existing knowledge and is a must in finding basic truths and undebatable facts related to the point of interest. An effective and well-conducted review as a research method creates a firm foundation for advancing knowledge and facilitating theory development [28].

Synthesizing. Synthesizing. The process of combining separate elements into a whole and making connections among and between numerous and varied source materials that may contribute to formulate the assumptions, axioms, and propositions. This stage summarizes the literature review findings, using common themes that have been identified from the sources and observing the relationships among the information to be used in the process of developing the theory. Synthesizing is an essential step in categorizing and developing meaningful assumptions or axioms and propositions that are relevant in formulating a theory [11].

Formulating Axioms and Propositions. After collecting, analyzing, and synthesizing the different related literature and studies, extensively elaborating the relevance of the gathered information, establishing the relations of the information, the formulation of assumptions or axioms and propositions starts. Formulating the axioms and propositions are a vital stage in theory development. Theory is defined by axioms, statements that are always true while the propositions support the axioms [14]. These axioms and propositions are important elements in constructing a theory.

Theory Construction. The last stage in developing a theory utilizing deductive axiomatic approach is theory construction. A theory is a set of ideas, concepts, principles, or methods used to explain a wide set of observed facts. A theory is a generalized statement of abstractions or ideas that asserts, explains, or predicts relationships or connections between or among phenomena, within the limits of critical bounding assumptions that the theory explicitly makes [10]. According to authors [12], they define and explain the meaning of a theory very well, as a set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena.

5. Results and Discussions

Specification of the Problem

The specific topic of interest investigated in this paper is the role of student's motivation and engagement in education. Motivation affects determination, effort, energy, and uplifts student's enthusiasm to whatever activities are presented to them. Researchers published different articles and constructed theories to highlight the relationship of motivation and engagement in terms of students' achievement. Thus, students' levels of motivation are reflected in their engagement and contribution to the learning environment. With this, the researcher would like to develop a theory that will sustain the positive impact of motivation and engagement as it applies to educational settings and the process of learning in general. Thus, this paper develops the **Learning Motivation-Achievement Theory**.

Axioms

Three (3) axioms were derived out of the literature and studies used and reviewed as basis for formulating the six (6) propositions which then served as framework for developing this theory on learning motivation-achievement. The following axioms are: (1) Motivation is interdependent with achievement; (2) Motivation is a predictor of performance; (3) Motivation is associated with one's orientation towards a goal.

Axiom 1 Motivation is interdependent with achievement.

Studies have shown the relationship between motivation and achievement. The notion is accepted that motivation can lead to successful learning. High achievers have greater integrative motivation compared to lower ones. The authors [29] say that motivation is a very important factor which determines the success or failure in second language learning, for motivation can directly influence the frequency of using learning strategies, willpower of learning, goal setting, and the persistence in learning. Learning motivation influences the learners' autonomous learning ability and determines the learners' confidence in overcoming learning difficulty [29]. Thus, motivation is one of the crucial factors in determining the achievement of the students. Hence, it is concluded that **motivation is interdependent with achievement**.

Axiom 2 Motivation is a predictor of performance.

The authors [5] argue that achievement is seen as one's competence in relations with the world of knowledge. This means that if someone has high knowledge, he also has high achievements. While motivation is one of the important aspects in learning. Students with high motivation in learning will be directly proportional to their learning achievement. Conversely, students with low learning motivation tend to have low learning achievements [5]. With this, it shows that **motivation is a predictor of performance**.

Axiom 3 Motivation is associated with one's orientation towards a goal.

A study of achievement attributions provides a framework for examining processes within different goal/reward structures [12]. Goal motivations energize cognition, affect, and behavior in achievement settings. Thus, motivation and achievement of an individual are the product of a complex set of interacting goals that reflect personal, family, and cultural values. Moreover, it attributes motivation goals as cognitive representations of the different purposes that students may have in different achievement situations and are presumed to guide

students' behavior, cognition, and feelings as they become involved in academic work. Therefore, this paper believes that **motivation is associated with one's orientation towards a goal**.

Propositions

The formulation of the three axioms led the researcher to construct six propositions. These propositions are as follows: (1) High motivation enhances learning achievement; (2) Perceived academic achievement can sustain motivation; (3) Performance is associated with intrinsic motivations; (4) Performance is linked to extrinsic motivations; (5) Motivation should focus on performance orientation; (6) Motivation should be guided on mastery orientation.

Proposition 1 High motivation enhances learning achievement.

Student motivation and learning behavior constitute a key factor in the achievement of standards [27]. Students with high motivation to learn and with good learning behavior tend to achieve the required competency standards (Axiom 1). Learning motivation, both from the students themselves, as well as from outside, will determine students' learning behavior (Axiom 3). Motivation is not only important in encouraging students to learn, but also in helping students in achievement. Thus, this paper suggests that **high motivation enhances learning achievement**.

Proposition 2 Perceived academic achievement can sustain motivation.

According to author [40], suggests that our behavior is generally motivated by a desire to achieve certain goals (Axiom Literature suggests that motivation and academic achievement are related to one another (Axiom 1). Based on the author [42] that the final process of motivation is completing an action that can provide satisfaction. According to author [37], students' idea of academic achievement can be valued as a desirable or critical goal across many educational settings (Axiom 1). That is, academic self-concept influences motivation. This implies that motivation emerges principally because of academic achievement. Thus, students' motivation is heightened when they are successful. With that, this paper proposes that **perceived academic achievement can sustain motivation**.

Proposition 3 Performance is associated with intrinsic motivations.

Indicators of intrinsic motivation, such as interests, ideals and ability directly influence the learning behavior of the students [27]. Intrinsic learning motivation is the driving force that arises from the students in the form of desire, aspiration, and ability. Author [38] suggested that motivation has the power contained within the individual, which causes the individual to act (Axioms 2 and 3). The authors [15] likewise find intrinsic motivation to be an encouragement that comes from inside a person, related to satisfaction (Axiom 3). Intrinsically motivated students will think about questions far beyond the confines of the classroom because the presence of the teacher or the fear of a low grade are not the underlying drivers for their thinking. Hence, this paper proposes that **performance is associated with intrinsic motivations**.

Proposition 4 Performance is linked to extrinsic motivations.

In educational settings, extrinsic motivations include the sum of recognitions, grades, and

competition in learning [1] (Axiom 1 and 2). Learning for recognition is the pleasure in receiving a tangible form of recognition for success in learning. Grades represent the desire to be favorably evaluated. Learning competition is the urge to outperform others in learning, an aspect tied to the notion of performance and motivation [1]. Thus, extrinsic motivations as reflected in the aspects of recognition, grades, and competition are evident in students' motivation for learning. Therefore, this paper proposes that **performance is linked to extrinsic motivations**.

Proposition 5 Motivation should focus on performance orientation.

Students' motivation is oriented towards ego-involvement (Axiom 3), and the goal is to demonstrate their competence to others (Axiom 1). A performance orientation revolves around the idea of motivation with the intention for self-embodiment. It is when an individual underlines the aim of manifesting competence in the eyes of others. Learning and performance goal orientations predict differential patterns of affective, cognitive, and behavioral responses when individuals encounter adversity on a challenging task [35]. According to authors [35], found that a performance goal orientation is associated with a belief that high ability is a primary determinant of success. Thus, this paper proposes that **motivation should focus on performance orientation**.

Proposition 6 Motivation should be guided on mastery orientation.

Motivation is perceived depending on the individual's delineation of goals (Axiom 3), specifically, the academic achievement is motivated by acquiring lots of information from the learning activities that leads to enhancement of skills, knowledge, and abilities. For authors [20], mastery orientation encompasses this attitude that involves the drive for self-growth (Axiom 2). This portrays the advancement in competence and utilizes task-oriented criteria for appraising competent-relevant behaviors (Axiom 1). According to author [13], it is the mastery goal orientation that promotes a motivational pattern likely to promote long term and high-quality involvement in learning. With this, the paper proposes that **motivation should be guided on mastery orientation**.

Theory

Figure 2: Schematic Diagram of

Learning Motivation-Achievement Theory

Among the factors influencing students' learning, motivation becomes one of the most momentous factors that may affect students' learning achievement. According to the author [29] that motivation is a very important factor which determines the success or failure in learning, for motivation can directly influence the frequency of using learning strategies, willpower of learning, goal setting, and the persistence in learning. This summary model illustrates the interactions of learning motivation and achievements, utilizing some of the similarities of the widely used theories of motivation and achievement. Thus, this theory is developed and shall be called the **Learning Motivation-Achievement Theory.**

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