Content Analysis of Elementary Science Text Books Based on the Achievment Motivation Constructs

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Abstract

The textbook is considered one of the most important references and resources for students' learning in the education system. Because of the important role of the text book content in encouraging, providing learner educational needs, and making the students’ learning process easy, the science books content in primary school have been assessed and analyzed with respect to construct of advancement motivation and its indexes.

This study tried to answer following question:

1. How much did the science books' content of the grade one to grade three paid attention to the amount of achievement motivation construct and its component?
2. How much did the science books' content of the grade four and five paid attention to the amount of achievement motive construct and its component?

Method of research was content analysis.

The population of present study includes all 5 elementary science books during 2010-2011 school year. On this ground, all five science books content were analyzed by content analysis methods based on the attention they give to the achievement motive construct and its components.

The research tools included a checklist composed of 10 components and 125 secondary components based on the definition of achievement motive construct and its theory. Also the reliability of the tool has been calculated to be 0.93 based on the ratio of agreed – upon indexes to all other ones.

The findings of the study showed that

1. Science books to a high extent paid attention to advancement motivation constructs.
2. Among science books, grade 3 and grade 5 text books more dealt with motivation construct than 1, 2, 4 grades science books.
3. Grade one science books least paid attention to motivation construct.

Keywords: Elementary school books, Textbooks, motivation, education system, learning process, content analysis;

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1. Introduction

School textbook is one of the most important references and resources for students’ learning in any educational system and it is used for the formal study of a subject. In Iran like many other countries, the school books play important roles; therefore it is necessary to analyze these resources.

A type of analysis, which is very beneficial and important to the curriculum planners, authors, and the elementary-school curriculum decision-makers, is “content analysis”.

Bernard Berelson defined Content Analysis as “a research technique for the objective, systematic, and quantitative description of the manifest content of communications”. Content analysis is a research tool focused on the actual content and internal features of media. It is used to determine the presence of certain words, concepts, themes, phrases, characters, or sentences within texts or sets of texts and to quantify this presence in an objective manner. Texts can be defined broadly as books, book chapters, essays, interviews, discussions, newspaper headlines and articles, historical documents, speeches, conversations, advertising, theatre, informal conversation, or really any occurrence of communicative language. To conduct a content analysis on a text, the text is coded or broken down, into manageable categories on a variety of levels—word, word sense, phrase, sentence, or theme—and then examined using one of content analysis’ basic methods: conceptual analysis or relational analysis.

Moreover, content analysis aids in scientific and practical investigation of the concepts, motives, needs, attitudes, and all mentioned pieces in the educational content of books. This is so that these items can be compared with the curriculum plans in the elementary school education. This research has investigated and analyzed the content of science textbooks of the elementary school in the aspect of paying attention to achievement motivation construct and its components.

2. Achievement Motivation

Knowledge of motivation concepts, principles, and theories should be basic elements in a foundations of the textbooks in educational system. Murray (1938) explained that “need for achievement is consisted of defeating the obstacles, reaching for high standards, competing with others and moving ahead of them, and living with high standards”. (Rio, Translated by Mohammadi, 1997). McClelland (1961, 1965) and John Atkinson (1965) believe that the motive for achievement is seeking success in comparison with a high standard. Considering the researches conducted by McClelland it can be said that achievement motive is the result of school books, children's literature, and parent's educational methods. By realizing that school books are one of the most important references and resources for students' learning in the current education system, they can be considered one of the most important causes for suggesting students’ achievement motive. Therefore, the main objective of this research is to analysis content of Iranian science textbooks in elementary school in order to investigate the amount of attention these books pay to the “motivation construct for the country's achievement and its components”.

2.1. The Meaning of Achievement Motivation

Achievement motivation is a psychological concept that links personality traits and social background of an individual with his or her level of need for achievement. It is the desire and eagerness, or the effort an individual shows in order to reach a goal or to have control over objects, matters, individuals, thoughts, or a very high standard.

2.2. Achievement Motivation Theory

The achievement motive theory states that people who have a strong need for achievement often exhibit certain characteristics. They include: needing opportunities for promotion, requiring feedback so that success can be recognized, placing more importance on tasks than on relationships, having a preference for tasks that allow them to have power and control, needing to be recognized for successful outcomes due to their actions, to participate in tasks that exhibit their expertise, seeking tasks that are challenging so that expertise can be recognized and steering clear
of any likelihood of failure. According to Murray (as Hejell and Zigler, 1992 narrate) the achievement motivation is the motive that defeats obstacles and battles what is famous as “difficult”.

Korman (1974) explains that achievement motivation is consisted of a wish for moving ahead of a special behaviour which has become a base or standard (Korman, Translated by Shokre-Kon, 1991). Robins (1993) define the achievement motivation as a desire for leaping ahead of others and an effort for reaching success and achievement, with regards to certain standards.

McClelland (1965) was interested in how the achievement motive was created and what the social outcome of such motive is. His efforts were firstly concentrated on identifying the motive that causes an individual to have more interest for work compared to another person; and then clarify whether such motive can be created in people who have no interest in working. Atkinson (1964) expanded McClelland's studies in the field of achievement motive. According to him, people can be moved in two ways; a group by seeking success and a group by avoiding defeat. For establishing the motive for achievement, Weiner stresses on the concept of finding the reason in two areas of “success” and “defeat” and says that the reasons which individuals have for their success or defeat are important causes that determine both their behaviours that crave toward achievement and their future expectations from their activities. Although Spence and Helmrich (1978) rejected this assumption that the achievement motive is a simple construct and stated that the achievement motive consists of a multi-aspect construct.

Feld, Ruhland, and Gold (1967) and Ruble concluded in their studies that the achievement motive can be of two types: internal or external.

Reinor and Entin (1983) stated that the predicting of a path characteristic identifies the individual's amount of success in future. Reinor (1970) points out that any achievement goal which is far in terms of reaching, is less important than a goal which is in near future (Rio, Translated by Seyyed-Mohammadi, 1997).

Herman (1997) identified the ten evident characteristics that persons with high achievement motive possess compared to those who have a low achievement motive. He defines ten characteristics of achievement motivation as follows:
1- High level of wish; 2- Strong motive for moving up; 3- Long-term preservation and endurance in facing assignments with midrange difficulty level; 4- Interest for doing the halted work; 5- Possessing a dynamic understanding of time and realizing that matters happen quickly; 6- Having understanding of the future; 7- Doing a task in the right way; 8- Paying attention to the basis for selecting a friend, colleague, and a model; 9- Re-understanding through good activity in work; and 10- Behaviour that consists of taking low amount of risk.

2.3. Motivation Construct

To teach quantitative concepts such as duration, intensity, and direction is not going to help teachers understand how or why students develop adaptive, positive, or effective thought patterns. At a very general level, these thought patterns include goals, beliefs, and attitudes that are involved in how students approach learning situations, engage in the process of learning, and respond to learning experiences. Some examples are self-worth or self-concept of ability, attributions, self-regulated learning, and achievement goals. It is needed to pay more attention to how teachers can become more successful in socializing these adaptive motivation patterns in students.

2.4. Hierarchical Model of Achievement Motivation

A new model of achievement motivation combines the two most prominent theories: the achievement motive approach and the achievement goal approach. Achievement motives are the need to achieve and the fear of failure; these direct a person toward positive or negative behaviours. The three types of achievement goals are performance-approach goals, performance-avoidance goals and mastery goals. The performance-approach goal is when a person improves to be better at something than others are. Performance avoidance is improving to not look inept in front of others. A mastery goal is when a person improves simply for the sake of getting better regardless of outside social influences.
3. Methodology of Research

Bearing in mind all above about achievement Motivation, its theories and construct, content of science textbooks of elementary school have been analyzed by regarding the achievement motive construct and its components, including:

1- High level of wish;
2- Strong motive for moving up;
3- Long-term preservation and endurance in facing assignments with mid-range difficulty level;
4- Interest for doing the halted work;
5- Possessing a dynamic understanding of time and realizing that matters happen quickly;
6- Having understanding of the future;
7- Doing a task in the right way;
8- Paying attention to the basis for selecting a friend, colleague, and a model;
9- Re-understanding through good activity at work
10- Behaviour that consists of taking low amount of risk. Considering the essence of the study, the content analysis research methodology has been used.

3.1. The Statistical Population

The research's statistical population includes all 5 elementary school science Textbooks during the 2010-2011 school year. All five books were analyzed by content based on the attention they give to the achievement motive construct and its components.

3.2. Content Analysis and Measurement Instruments

In this study in order to analyze science textbooks content on the basis of the achievement motive construct and its theory, a check list was built. It was included ten components and 125 secondary-components.

4. Research Findings

The research findings are as follows:
1- Considering question number one "How much attention have the content of grade one, two, and three Science textbooks paid attention to the amount of achievement motive construct and its components?" and with respect to the achievement motive construct components, the content analysis of grade one, grade two, and grade three science textbooks of elementary school shows that the most amount of frequency in grade one is related to foreseeing components (with 14.4 percent) and the lowest amount of frequency is related to the components namely dynamic understanding of time (with 1.38 percent).

The content analysis of grade two science textbook of elementary school shows that the most amount of frequency is related to the components i.e. attention to the competency basis for selecting a friend (with 2.14 percent). Considering achievement motive construct components, the content analysis of grade three science textbooks of elementary school shows that the most amount of frequency in grade three is related to "preservation" components with 14.5 percent and the lowest amount of frequency is related to the components i.e. seeking promotion (with 4.2 percent).

2- In order to answer question number two of this study “How much attention have the content of grade four, and five school science textbooks paid to the amount of achievement motive construct and its components?” and with respect to the achievement motive construct components, the content analysis of grade four science textbooks of elementary school shows that the most amount of frequency in grade four is related to “preservation” components (with 15 percent) and the lowest amount of components is related to the dynamic components understanding of time (with 3.20 percent).
With regard to the achievement motive construct components, the content analysis of science textbook of grade five elementary school shows that the most amount of frequency is related to “interest for continuing an unfinished task” components (with 15.95 percent) and the lowest amount of frequency is related to the components i.e. paying attention to good competency basis for selecting a friend (with 2.67 percent).

5. Discussion and Conclusion

The most frequency for the achievement motive construct components in science textbooks of elementary school is related to the “interest for continuing an unfinished task”, “preservation”, “foreseeing”, and “doing something well”. The least abundance is related to dynamic components understanding of time, paying attention to competency basis in selecting a friend, and seeking promotion.

In addition to this the analyzed units related to achievement motives in the science textbooks state that the most amount abundance and attention to the achievement motive construct components is related to grade five to 26.37 percent and the least abundance is related to grade one with 13.39 percent.

We can conclude based on the data provided by the content analysis forms that science textbooks to a great extent paid attention to the achievement motive construct in the 2010-2011 school year. It can be said that among five science textbooks of elementary school, those of grade four and five have paid high attention to the achievement motive construct and those of grades one and two have done so to a lower degree.

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References


