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Constraints Perceived and Suggestions Offered by the Bloom Taxonomy

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ABSTRACT

Bloom's Taxonomy serves as a valuable framework for assessing cognitive learning and skill development among agricultural students. However, students often face constraints in fully engaging with its hierarchical learning process. This study explores the perceived challenges and potential solutions for integrating Bloom's Taxonomy into agricultural education. Key constraints identified include limited practical exposure, inadequate instructional methods, and a lack of critical thinking exercises. Based on these findings, the study suggests curriculum modifications, enhanced experiential learning opportunities, and targeted pedagogical strategies to bridge these gaps. The proposed improvements aim to foster higher-order cognitive skills, ultimately enhancing agricultural education outcomes.

Keywords: Bloom's Taxonomy, Agricultural Education, Cognitive Development, Experiential Learning, Higher-Order Thinking, Pedagogical Strategies, Curriculum Enhancement

INTRODUCTION

Agricultural education plays a crucial role in preparing students for the challenges of modern farming, agribusiness, and sustainable agricultural practices. However, the effectiveness of agricultural education depends largely on the instructional strategies used to develop students' cognitive skills. Bloom's Taxonomy, a widely accepted educational framework, categorizes learning into six hierarchical levels—Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating (Bloom, 1956; Anderson and Krathwohl, 2001). This taxonomy serves as a guide for structuring curricula, designing assessments, and promoting higher-order thinking skills essential for problem-solving and decision-making in agriculture (Smith, 2023; Kolb, 1984; Patil and Kulkarni, 2020).

Despite its significance, the effective implementation of Bloom's Taxonomy in agricultural education is often hindered by various constraints. Students frequently encounter difficulties in progressing beyond basic knowledge retention to advanced cognitive skills such as critical analysis and innovation. Factors such as traditional lecture-based teaching methods, a lack of practical exposure, and limited use of problem-solving activities contribute to these challenges. Furthermore, the gap between theoretical learning and real-world agricultural applications further complicates students' ability to engage with higher-order thinking skills (Shulman, 1986; Krathwohl, 2002; Biggs and Tang, 2011).

Recognizing these limitations, this study aims to explore the constraints perceived by agricultural students in applying Bloom's Taxonomy and to propose solutions that can enhance their learning experience. By identifying these challenges and offering targeted pedagogical improvements, the study seeks to bridge the gap between theoretical knowledge and practical application, ultimately contributing to the advancement of agricultural education with following objectives (Smith, 2023; Singh and Meena, 2019).

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Objective:

1. To determine the Constraints Perceived and Suggestions Offered by the Bloom Taxonomy Amoung Agricultural Students

METHODOLOGY

The present study was conducted during the academic years 2024–25 at the Institute of Agriculture Research and Technology. The study focused on understanding the constraints perceived by agricultural students in applying Bloom's Taxonomy and identifying possible solutions to enhance its implementation in agricultural education.A total of 62 agricultural students were selected as respondents through a random sampling method. The sample comprised undergraduate students from different academic levels to ensure diverse perspectives. Data were collected using a pre-interview method with a structured schedule, allowing for systematic and comprehensive responses. The study followed an ex-post-facto research design, as it aimed to assess existing challenges without manipulating variables. Appropriate statistical tools were employed for data analysis and interpretation to derive meaningful conclusions regarding students' experiences and learning constraints.

RESULTS AND DISCUSSION

Constraints faced by the blooms Taxonomy fron students perspectives:

The analysis of the constraints perceived by agricultural students in applying Bloom's Taxonomy reveals key challenges that hinder effective learning. Among these, facility shortages emerged as the most significant constraint (53.13 %), indicating a lack of proper infrastructure, laboratory facilities, and field exposure essential for practical learning. This was followed by the need for enhancing practical learning (49.43 %), suggesting that students struggle to apply theoretical knowledge in real-world agricultural scenarios. Additionally, accessibility to study materials (38.73 %) was highlighted as a concern, emphasizing the necessity of well-structured resources such as digital content, textbooks, and reference materials to support cognitive development. The study also found that practical relevance of education (29.08 %) remains a challenge, as students feel a disconnect between academic content and real-world agricultural applications. Lastly, exam anxiety (27.03 %) was identified as a constraint, suggesting that assessment methods may contribute to stress and hinder deeper engagement with learning. These findings underscore the importance of improving infrastructure, incorporating experiential learning methods, and ensuring better access to educational resources to enhance agricultural students' cognitive and practical competencies. Addressing these issues will enable a more effective implementation of Bloom's Taxonomy in agricultural education, fostering critical thinking and problem-solving skills essential for the field (Table 1).

Suggestions faced by the blooms Taxonomy fron students perspectives :

The Table 2 presents suggestions offered by

Table 1 : Distribution of the respondents according to their constraints regarding the bloom taxonomy from students perspective

Sr. No.	Constaints	Per cent	Rank
1.	Enhancing Practical Learning	49.425	2
2.	Reducing Exam Anxiety	27.025	5
3.	Improving Practical Relevance	29.08333	4
4.	Addressing Facility Shortages	53.13333	1
5.	Providing Accessible Study Materials	38.725	3

Table 2 : Distribution of the respondents according to their Suggestion regarding the bloom taxonomy from students perspective

Sr. No.	Suggestions	Per cent	Rank
1.	Developing Agribusiness Skills	50.675	5
2.	Encouraging Hard Work and Mastery	69.74167	2
3.	Enhancing Communication Skills	70.04167	1
4.	Strengthening Faculty and Lab Facilities	55.00	4
5.	Ensuring Faculty Availability for all Courses	55.15	3

agricultural students for improving the implementation of Bloom's Taxonomy in their learning process. The highest-ranked suggestion was enhancing communication skills (70.04 %), emphasizing the importance of effective verbal and written communication in agricultural education and professional growth. Encouraging hard work and mastery (69.74 %) was the second most important suggestion, highlighting the need for perseverance and deeper understanding of agricultural concepts.

Students also stressed the importance of faculty availability for all courses (55.15 %) and strengthening faculty and lab facilities (55.00 %), indicating the necessity for well-equipped institutions with qualified educators and better practical learning environments. Lastly, developing agribusiness skills (50.68 %) was suggested to prepare students for entrepreneurial and business-oriented opportunities in the agricultural sector.

Conclusion:

The study highlights the constraints faced by agricultural students in applying Bloom's Taxonomy and suggests improvements to enhance their learning experience. Key challenges identified include facility shortages, limited practical learning opportunities, inadequate access to study materials, and high exam anxiety, all of which hinder students from fully engaging in higher-order thinking skills. Addressing these issues requires improving infrastructure, incorporating experiential learning techniques, and ensuring better alignment between theoretical concepts and practical applications.

The study also presents key suggestions from students, with enhancing communication skills, encouraging mastery and hard work, and ensuring faculty availability ranking as the most important. Strengthening faculty expertise, upgrading lab facilities, and integrating agribusiness skills into the curriculum were also suggested as crucial steps to improve agricultural education.

To effectively implement Bloom's Taxonomy in agricultural learning, it is essential to adopt student-centered teaching approaches, provide sufficient learning resources, and promote skill-based education. By addressing these constraints and implementing the suggested improvements, agricultural education can better equip students with critical thinking, problem-solving, and practical skills necessary for their professional success.

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