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EPISTEMOLOGICAL BELIEFS AND THE APPLICATION OF HIGHER ORDER THINKING SKILLS AMONG ELEMENTARY MASTER TEACHERS IN THE SCHOOLS DIVISION OF COTABATO

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ABSTRACT

This study examined the relationship between epistemological beliefs and the application of higher-order thinking skills (HOTS) among elementary master teachers in the Schools Division of Cotabato. Anchored on Schommer's Epistemological Belief Theory and Bloom's Revised Taxonomy, the study employed a mixed-methods research design integrating quantitative and qualitative approaches. Data were collected from 300 elementary master teachers using survey questionnaires, while selected participants were engaged through in-depth interviews.

Findings revealed that teachers exhibited moderate to high levels of epistemological beliefs in terms of certainty of knowledge, source of knowledge, and control of learning. Similarly, teachers demonstrated very high levels in the application of HOTS across instructional design, authentic assessment, art of questioning, formative feedback, and metacognitive support. Correlation analysis indicated weak but significant relationships between certain dimensions of epistemological beliefs and HOTS practices, particularly in formative feedback and metacognitive support. Regression results further showed that source knowledge and control of learning significantly influenced instructional design and authentic assessment.

Qualitative findings supported these results by highlighting teachers' beliefs in collaborative knowledge construction, effort-based learning, and reflective teaching practices. The study concludes that epistemological beliefs play a meaningful role in shaping teachers' application

of HOTS and recommends strengthening professional development programs to enhance both belief systems and instructional practices.

INTRODUCTION

Quality education in the 21st century extends beyond knowledge transmission and emphasizes the development of higher-order thinking skills (HOTS), including analysis, evaluation, and creativity. Global initiatives such as Sustainable Development Goal 4 advocate for equipping learners with critical thinking and problem-solving skills necessary for lifelong learning. In the Philippine context, the Department of Education has integrated HOTS into the MATATAG curriculum, positioning teachers as key agents in fostering deeper cognitive engagement .

Despite these reforms, many classrooms remain rooted in traditional, teacher-centered approaches that limit opportunities for higher-order thinking. Studies have identified challenges such as time constraints, large class sizes, and deeply ingrained instructional habits that hinder the effective integration of HOTS. Furthermore, while teachers recognize the importance of HOTS, their implementation is often constrained by insufficient training and resources.

A critical but underexplored factor influencing HOTS implementation is teachers' epistemological beliefs—beliefs about the nature of knowledge and learning. These beliefs shape instructional decisions, classroom practices, and the extent to which teachers promote critical and creative thinking. However, limited research has examined the relationship between epistemological beliefs and HOTS in the Philippine elementary context.

This study aims to address this gap by examining how epistemological beliefs influence the application of HOTS among elementary master teachers in Cotabato. The findings are expected to inform instructional practices, teacher development programs, and educational policy.

METHODS

This study employed a mixed-methods research design consisting of two major phases: a quantitative descriptive-correlational approach and a qualitative phenomenological inquiry. The quantitative phase examined the relationship between epistemological beliefs and HOTS, while the qualitative phase explored teachers' lived experiences and instructional practices .

The participants included 300 elementary master teachers selected through simple random sampling across three congressional districts of Cotabato. For the qualitative phase, purposive sampling was used to select participants with relevant teaching experience and demonstrated use of HOTS.

Data were collected using a structured questionnaire based on Schommer's Epistemological Questionnaire and Bloom's Revised Taxonomy. The instrument measured epistemological beliefs in terms of certainty of knowledge, source of knowledge, and control of learning, as well as HOTS application across five domains: instructional design, authentic assessment, art of questioning, formative feedback, and metacognitive support.

Data analysis involved weighted mean to determine levels, Pearson correlation to examine relationships, and multiple regression to identify significant predictors. Qualitative data were analyzed using thematic analysis to identify patterns and themes.
Ethical considerations such as informed consent, confidentiality, voluntary participation, and respect for professional integrity were strictly observed.

RESULTS

The findings revealed that teachers demonstrated moderate epistemological beliefs in terms of certainty of knowledge (WM = 3.15), indicating a balanced view of knowledge as both stable and evolving. Source knowledge (WM = 3.87) reflected agreement that knowledge comes from multiple and collaborative sources. Control of learning (WM = 4.27) showed strong agreement that learning is influenced by effort and strategy.

In terms of higher-order thinking skills, teachers exhibited very high levels across all domains: instructional design (WM = 4.47), authentic assessment (WM = 4.39), art of questioning (WM = 4.46), formative feedback (WM = 4.34), and metacognitive support (WM = 4.38). These results indicate that teachers consistently integrate HOTS into their instructional practices.

Correlation analysis revealed weak but significant relationships between epistemological beliefs and HOTS. Source knowledge showed significant relationships with authentic assessment, questioning, and feedback, while control of learning demonstrated significant relationships with formative feedback and metacognitive support. Certainty of knowledge showed minimal influence.

Regression analysis indicated that source knowledge and control of learning significantly predicted instructional design and authentic assessment, although the overall predictive strength was modest.

Qualitative findings supported these results, highlighting teachers' emphasis on collaborative learning, reflective practices, and student-centered instruction.

DISCUSSION

The findings underscore the role of epistemological beliefs in shaping instructional practices and the integration of higher-order thinking skills. Teachers who view knowledge as evolving and derived from multiple sources are more likely to implement learner-centered strategies that promote analysis, evaluation, and creativity.

The high level of HOTS application suggests that teachers are actively incorporating critical thinking strategies into their teaching. However, the weak correlations indicate that while epistemological beliefs influence practice, other factors such as institutional support, training, and classroom context also play significant roles.

The strong influence of control of learning on formative feedback and metacognitive support highlights the importance of growth-oriented beliefs in promoting self-regulated learning. Teachers who believe that learning is shaped by effort and strategy are more likely to provide feedback that encourages reflection and improvement.

Despite these positive findings, the modest predictive power of epistemological beliefs suggests the need for further research and intervention. Strengthening teachers' beliefs about knowledge and learning through professional development may enhance their ability to implement HOTS more effectively.

CONCLUSION

This study demonstrated that epistemological beliefs significantly influence the application of higher-order thinking skills among elementary teachers, although the relationships are generally weak. Teachers exhibited high levels of HOTS integration, particularly in instructional design, questioning, and metacognitive support.

The findings highlight the importance of fostering progressive epistemological beliefs that support inquiry-based and learner-centered teaching. Enhancing teachers' understanding of

knowledge as dynamic and collaborative can improve their instructional practices and promote deeper learning among students.

It is recommended that educational institutions strengthen training programs focused on epistemological development and HOTS integration. Future research should explore additional variables that may influence instructional practices in diverse educational contexts.