

NATIONAL RESEARCH AGENDA

American Association for Agricultural Education
 2011- 2015 Research Priority Areas

Meaningful,
 Engaged
 Learning

Meaningful, Engaged Learning in All Environments

Key Outcome: *Learners in all agricultural education learning environments will be actively and emotionally engaged in learning, leading to high levels of achievement, life and career readiness, and professional success.*

Informed
 Choices

Background

Early discussions of teaching and learning were primarily philosophical and epistemological debates absent of empirical research on the human mind. Recent research in the cognitive sciences, human development and behavior, and in the social and cultural aspects of learning environments have provided educators with a much more sophisticated view of learning and of the creation of environments to develop meaningful learning (Bransford, Brown, & Cocking, 2000).

Learning is the active, goal-directed, construction of meaning. Meaningful learning occurs when learners go beyond a rote memorization of facts to the ability to interpret the interconnectedness of facts or material, regulate their understanding, transfer the understanding of concepts to new situations, and think creatively, solve problems, and/or experience a change in attitudes, opinions, skill development, and knowledge constructed (Darling-Hammond, George Lucas Educational Foundation, Barron, & Pearson, 2008). Further, meaningful learning is embedded in authentic environments or include real-world tasks or applications.

The role of the teacher in meaningful learning is to move from being the sole source of knowledge to becoming a facilitator of a holistic learning environment and engaged learning process. Successful learners in meaningful environments take responsibility for their learning, and they are active and goal-directed. Successful learners approach learning as a problem-solving process whereby they advance from novices to experts, they reflect on the process and the development of their expertise, and adjust the learning goals to advance in their thinking. In meaningful learning contexts, learners are metacognitive or can think about their own thinking, they can transfer knowledge and skills to new contexts, and are thereby prepared to meet the challenges required of the complex environments in the 21st century.

Challenges

Despite a very solid base of research on how people learn and of principles for transferring the science of learning to the practice of teaching, many

learning environments still rely heavily on rote memorization of narrow facts. While it's useful for learners to have a solid foundation in factual knowledge, the skills needed to be successful in the 21st century workforce are much more complex. Today's employees must be able to communicate effectively, work in teams, and develop creative solutions to complex problems while synthesizing a large and ever-changing base of information.

Today's learners are more diverse than ever. They come from differing cultural and socio-economic environments. They display diverse preferences for learning and they possess different levels of prior knowledge and academic preparation. Learners are motivated differently through extrinsic factors as well as intrinsic needs. Learners who are not engaged in meaningful learning are either at risk for failure or become adept at memorizing rote facts, but are not proficient at solving complex problems with an ever changing knowledge base. Given these variables and constraints, one of the challenges for teachers in engaging learners for meaningful learning is the problem of how to reach all students.

Whether due to a lack of preparation, ineffective models of preparation, or a reliance on personal assumptions versus evidence-based practice, a gap still exists between the science of meaningful learning and the practice of teaching for meaningful learning. Thus, a second challenge for developing meaningful learning environments involves the problem of preparing and developing teachers as adaptive experts in all learning contexts.

A final challenge to the problem of creating meaningful engaged learners involves the design, implementation, and assessment of pedagogies and models for meaningful learning. Learners, teachers, the subject matter, the context of the classroom, the cultural dynamics both inside and outside of the classroom, and the opportunities, constraints, and resources of the specific learning context all influence meaningful learning. Given such complexities, agricultural education professionals are challenged by the designing, developing, implementing, and assessing pedagogies for meaningful learning. Further, agricultural education professionals should measure the learner, teacher, and environmental

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Scientific &
 Professional
 Workforce

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 Effective
 Programs

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outcomes associated with a variety of meaningful learning pedagogies.

Opportunities to Respond

Designing, developing, and assessing meaningful learning environments that produce positive learner outcomes is essential to properly educating the citizens of the 21st century. Yet, this task is complex. First, many teachers rely on their own beliefs and assumptions regarding “what works” in classroom teaching through their own contexts and prior experiences. Further, teachers who are best able to teach meaningfully are those who have developed adaptive expertise (Crawford, et al., 2005). They are metacognitive, self-regulated, reflective learners who have reflected on the problems of their practice and applied solutions from evidence-based practices. Further, teachers who are adaptive experts have managed to develop such expertise in complex, ever-changing classroom environments (Darling-Hammond & Bransford, 2005).

Scholarship in learning and teaching has been a primary focus for research in agricultural education throughout its early disciplinary roots. Further, agricultural educators as a whole are engaged heavily in the practice of teaching and focus on fostering excellent teaching, and meaningful learning environments in their own teaching contexts. The design, development, and assessment of meaningful learning environments that produce

positive learner outcomes are essential to properly educating the citizens of the 21st century. Research is needed to achieve the goal of having all learners in all agricultural education learning environments actively and emotionally engaged in learning, resulting in high levels of achievement, life and career readiness, and professional success. Our areas of scientific focus should include:

- » Deepen our understanding of effective teaching and learning processes in all agricultural education environments.
- » Examine the role of motivation, self-regulation, metacognition, and/or reflection in developing meaningful, engaged learning experiences across all agricultural education contexts.
- » Examine the role of diversity and multiple perspectives in meaningful learning across agricultural education contexts.
- » Develop and assess various learning interventions and delivery technologies to increase problem-solving, transfer of learning, and higher order thinking across all agricultural education contexts.
- » Examine various meaningful learning environments in assorted agricultural education contexts for their impact on specific cognitive, affective, and psychomotor learning outcomes.

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ADDITIONS