Session A-1: Curricula and Program Planning
Chair: Mari Borr, North Dakota State University
Facilitator: Dominick Fazarro, University of Texas Tyler
Location: Ballroom E

Do Mathematics and Reading Competencies Integrated Into Career and Technical Education Courses Improve High School Student State Assessment Scores?
- Kristin B. Pierce, Volusia County Schools, Florida
- Victor M. Hernandez, University of South Florida

Who Participates in High School Career Academies? A Descriptive Analysis of Six-Year Enrollment Trends in a Local District
- E. Daniel Cox, University of South Florida
- Victor M. Hernández-Gantes, University of South Florida
- Edward C. Fletcher Jr., University of South Florida

An Examination of Teacher Mental Models on Change to STEM-Focused Curricula
- Janel Kerr, Idaho Division of Professional-Technical Education
- James Gregson, University of Idaho
- Laura Holyoke, University of Idaho

Session A-2: Program Relevance and Effectiveness
Chair: Mickey Kosloski, Old Dominion University
Facilitator: Marisa Castellano, Louisville University
Location: Ballroom F

Does the Number of Post-Secondary Agricultural Mechanics Courses Completed Affect Teacher Competence?
- Preston Byrd, Iowa State University
- Matt Shultz, Iowa State University
- Ryan Anderson, Iowa State University
- Thomas Paulsen, Iowa State University

Vocational Retraining and Self-Efficacy in the Unemployed
- Luther M. Maddy, Lewis-Clark State College
- John G. Cannon, University of Idaho
- Eric. J. Lichtenberger, Southern Illinois University at Edwardsville

Evaluating the Effectiveness of the Utah Career and Technical Education Introduction Course
- Debra Spielmaker, Utah State University

Session B-1: Knowledge Base for Teaching and Learning
Chair: Ryan Anderson, Iowa State University
Facilitator: Julie Dainty, Pittsburg State University
Location: Ballroom E

Social Cognitive Factors of Academic and Life Satisfaction in Meister High School Students in Korea
- Minwook Lee, University of Georgia
- Jay W. Rojewski, University of Georgia

Student Teachers’ Perceptions and Experiences with Performance Assessment for California Teachers
Determining the Science, Agriculture and Natural Resource, and Youth Leadership Outcomes of Students Participating in an Innovative Middle School Agriscience Program
- Peter Skelton, New Mexico State University
- Kristin S. Stair, New Mexico State University
- Tom Dormody, New Mexico State University
- Dawn Vanleeuwen, New Mexico State University

Session B-2: Accountability
Chair: Cathy Thomas, The Pennsylvania State University
Facilitator: Larae Watkins, University of Central Missouri
Location: Ballroom F

The Effect of Capstone Cooperative Education Experiences, and Related Factors on Career and Technical Education Secondary Student Summative Assessment Scores
- Elizabeth D. Richard, Temple University
- Robert W. Clark, Temple University

Treatment of Race/Ethnicity in Career-Technical Education Research
- Jay W. Rojewski, University of Georgia

The Quest for Continuous Improvement: A Qualitative Study on Diffusion of Outcomes Assessment Among Career and Technical Education Faculty Members at Rocky Mountain States Community Colleges
- Michele McFarlane, University of Idaho

Session C: Delivery Methods
Chair: Tara Shollenberger, High Point University
Facilitator: Elaine Adams, University of Georgia
Location: Ballroom E

Simulation and Virtual Technologies for Workforce Learning: Successes from Alternative Realities
- Lynna J. Ausburn, Oklahoma State University
- Floyd B. Ausburn, Oklahoma State University
- Gary Dotterer, Rogers State University
- Andre Washington, Langston University
- Paul Kroutter, University of Arkansas

Problem Based Learning in Agricultural Education: A Synthesis of Literature
- Jaclyn Tweeten, Iowa State University
- Courtney Taglauer, Iowa State University
- Joshua Day, Iowa State University
- Ryan Anderson, Iowa State University

Accessibility and Usage of Technology by North Carolina Agriculture Teachers
- Maegan R Williams, North Carolina State University
- Wendy J. Warner, North Carolina State University
- James L. Flowers, North Carolina State University
- D. Barry Croom, North Carolina State University
Do Mathematics and Reading Competencies Integrated Into Career and Technical Education Courses Improve High School Student State Assessment Scores?

Kristin B. Pierce, Volusia County Schools, Florida
Victor M. Hernandez, University of South Florida

Abstract

A quasi experimental study tested a contextual teaching and learning model for integrating reading and mathematics competencies through 13 introductory career and technical education (CTE) courses. The treatment group consisted of students in the 13 introductory courses taught by the CTE teachers who designed the units and the control group consisted of students in all other non-integrated sections of the 13 introductory courses. After a 26-week intervention, 9th and 10th grade student state reading and mathematics test scores were analyzed to determine if the mean change in post-test scores was greater in the treatment group than the mean change in scores in the control group. Quantitative analysis revealed that the integrated CTE courses were statistically significant in improving reading treatment group scores, but not statistically significant in improving mathematics treatment group scores.
Who Participates in High School Career Academies? A Descriptive Analysis of Six-Year Enrollment Trends in a Local District

E. Daniel Cox, University of South Florida
Victor M. Hernández-Gantes, University of South Florida
Edward C. Fletcher Jr., University of South Florida

Abstract

In response to increasing high school graduation requirements along with emerging skills in the workforce, the focus of career academies has evolved from one of keeping students enrolled in high school through graduation to a more robust preparation for college and careers for all students. This new focus may have resulted in a demographic shift in the students participating in career academies. To that end, the purpose of this study was to describe the demographics of students who participated in career academies in one Southeastern school district over the past six years. The findings indicated that a gender gap continues to exist among career academies. Findings also indicated that when compared to the population across the district’s high schools, while the career academies are becoming more racially diverse, there continues to be fewer students of color enrolled in career academies. Implications for administrators and future research opportunities are articulated.
An Examination of Teacher Mental Models on Change to STEM-Focused Curricula

Janel Kerr, Idaho Division of Professional-Technical Education
James Gregson, University of Idaho
Laura Holyoke, University of Idaho

Abstract

Following the National trend moving away from an Industrial Technology focus to a STEM-focused model, the Idaho State Division of Professional-Technical Education required a change to one of four STEM-focused curriculums for all Engineering and Technology Education programs. Selecting one of the four curriculum packages was necessary in 2012 for each program to retain a positive, active status in the state, as well as funding for program support (Idaho State Division of Professional-Technical Education, 2011b). The purpose of the study was to explore the role of mental models in influencing Idaho’s Engineering and Technology Education teachers’ decision making when faced with major curriculum change. The study provided teachers an opportunity to express their deeper assumptions and understandings of the transition and implementation process.
Does the Number of Post-Secondary Agricultural Mechanics Courses Completed Affect Teacher Competence?

Preston Byrd, Iowa State University  
Matt Shultz, Iowa State University  
Ryan Anderson, Iowa State University  
Thomas Paulsen, Iowa State University

Abstract

This study examines the effect of the number of college courses taken by agricultural educators on their perceived competence to teach agricultural mechanics. Agricultural educators in Iowa ranked their competence in 54 skill areas associated with agricultural mechanics. Teachers also indicated how many agricultural mechanics courses they had taken at post-secondary schools. Teachers who completed two or more courses had a moderate perceived competence in agricultural mechanics. Teachers indicating six or more classes exhibited a high perceived competence, but those with one or less had a low to slight perceived agricultural mechanics competence. A positive correlation is present between agricultural educators who take more courses at the post-secondary institutions and the competence of the teacher. Improving the competence of pre-service agricultural education teachers is recommended by looking at the current agricultural mechanics curricula at Iowa State University in order to improve teacher competence in the areas that agricultural educators indicated low competence.
Vocational Retraining and Self-Efficacy in the Unemployed

Luther M. Maddy, Lewis-Clark State College
John G. Cannon, University of Idaho
Eric J. Lichtenberger, Southern Illinois University at Edwardsville

Abstract

This study was designed to determine the effects of vocational retraining programs on the self-efficacy of unemployed persons. A total of 117 survey questionnaires were collected at labor department offices and other locations in three states. The survey included demographic information and measured general self-efficacy and job search self-efficacy. Participants were also asked whether they had enrolled in college or vocational retraining since becoming unemployed. Thirty-eight participants reported having enrolled in college or a vocational retraining program since becoming unemployed. Pearson correlation coefficients demonstrated a weak negative correlation ($r (115) = -0.185, p < .05$) between retraining programs and general self-efficacy. In addition, a weak, but not significant negative correlation ($r (115) = -0.086, p > .05$) was found between vocational retraining and job search self-efficacy. Unlike many previous studies, this study found attending college or vocational retraining programs had a negative impact on general self-efficacy.
Evaluating the Effectiveness of the Utah Career and Technical Education Introduction Course

Debra Spielmaker, Utah State University

Abstract

This quantitative study evaluated three career education constructs and evaluated outcomes of a compulsory Career and Technical Education (CTE) Introduction course. All Utah public school seventh-grade students are required to enroll in this school yearlong course. A repeated-measures design used preexisting data to analyze 6,078 pre- and postsurvey responses collected at the beginning of the course and again at the end of the course during the 2011-2012 school year. The evaluation was viewed through a postpositivist lens and employed a theory-based evaluation model as the framework for analysis. The research questions addressed four student variables: career planning, career self-efficacy, career knowledge, and course evaluations. Gender differences along school counselor relationships were also evaluated as possible predictors on course evaluations.
Social Cognitive Factors of Academic and Life Satisfaction in Meister High School Students in Korea

Minwook Lee, The University of Georgia
Jay W. Rojewski, The University of Georgia

Abstract

The purpose of this research was to test Lent’s (2004) social cognitive model of well-being with a sample of students who were enrolled in Korean Meister high schools. The participants were 720 seniors majoring in mechanical engineering. Structural equation modeling was used to test the fit of the hypothesized models to the data. Results indicated support for the social cognitive model of well-being in the culturally different situation. The predictors accounted for 60.5% of variance in academic satisfaction and for 50.5% of the variance in life satisfaction. Limitations and recommendations for future research on the model were discussed.
Student Teachers’ Perceptions and Experiences with the Performance Assessment for California Teachers

Ann M. De Lay, California Polytechnic State University
Wendy J. Warner, North Carolina State University

Abstract

The teacher is the most significant factor for academic success. In an effort to ensure that well-prepared teachers are entering the classroom, various accountability measures for teacher education have been established. The purpose of the study was to discover the impact of the Performance Assessment for California Teachers (PACT) on the roles of student teachers in [western state] and improve the experience for future teachers. Seven PACT completers representing the three universities using PACT as part of their credentialing program were selected to participate in a focus group interview. Results indicated student teachers perceived the PACT as introducing additional stress and doubt to their student teaching experiences. While student teachers received considerable support, additional layers were needed in the areas of increased PACT awareness among cooperating teachers and trainings on developing technology skills among student teachers.
Determining the Science, Agriculture and Natural Resource, and Youth Leadership Outcomes of Students Participating in an Innovative Middle School Agriscience Program

Peter Skelton, New Mexico State University
Kristin S. Stair, New Mexico State University
Tom Dormody, New Mexico State University
Dawn Vanleeuwen, New Mexico State University

Abstract

The Memorial Middle School Agricultural Extension and Education Center (MMSAEEC) is a youth science center focusing on agricultural and natural resources. The purpose of this quasi-experimental research study was to determine if relationships exist between leadership skill development, natural resource achievement, and science achievement of students who participate in the program as compared to students at a comparison middle school. Results from this study indicate improved overall science test scores as well as improved portions of the agricultural and natural resource standardized test. Weak associations existed between YLLSD scores among MMSAEEC participants and a comparison program. MMSAEEC participants also indicated a higher interest in STEM careers. Based on these results, the MMSAEEC model is a viable model for encouraging science achievement in middle school programs though additional improvements are necessary, especially in the improvement of educational opportunities for female participants and improvements to life science achievement for participants.
The Effect of Capstone Cooperative Education Experiences, and Related Factors, On Career and Technical Education Secondary Student Summative Assessment Scores

Dr. Elizabeth D. Richard, Temple University
Dr. Robert W. Clark, Temple University

Abstract

Research has discussed the benefits of cooperative education experiences for secondary career and technical education students. Yet, in this era of high stakes testing and program accountability, the amount of time that students are permitted to participate in cooperative education has diminished, fearing that time spent out of the classroom would result in lower test scores. Unfortunately, there is little empirical evidence to suggest a relationship between cooperative education and performance on summative assessments. This baseline study of secondary career and technical education students in Pennsylvania indicated that students who participated in capstone cooperative education experiences scored significantly higher on summative assessments, as measured by NOCTI scores, than those students who did not participate. Additionally, this study determined that student GPA, IEP status, length of time on co-op or quality of Training Plan could not significantly account for any established mean differences.
Treatment of Race/Ethnicity in Career-Technical Education Research

Jay W. Rojewski, The University of Georgia

Abstract

This study examined how researchers of career-technical education have treated the construct of race/ethnicity in recent studies. Fifty-one of 71 articles published in the Career and Technical Education Research (CTER) over a 7-year span (2005-2011) were included. A content analysis found that only one-quarter (n=13, 25.49%) of eligible studies reported the racial/ethnic composition of their samples. Race/ethnicity was most likely to be reported only (n=10) when it was used in some type of inferential analysis. Further, only two-thirds (n=34, 66.67%) of published studies reported the gender of research participants. The authors argue that the lack of precise descriptions of sample composition, including gender and race/ethnicity, weakens the potential impact of career and technical education research, and severely limit our inability to determine the representativeness of samples studied and our ability to generalize findings to larger populations. Additional implications and suggestions for future research are offered.
The Quest for Continuous Improvement: 
A Qualitative Study on Diffusion of Outcomes Assessment Among Career and Technical 
Education Faculty Members at Rocky Mountain States Community Colleges 

Michele McFarlane, University of Idaho

Abstract

The purpose of this investigation was to explore the effectiveness of procedures used to introduce outcomes assessment to Career and Technical Education faculty at community colleges (N=21). Rogers’ Diffusion of Innovations theory was utilized to investigate the process of adopting outcomes assessment by Career and Technical Education faculty. Results found faculty members needed to accept the relative advantage of the new process before they were willing to make changes to the status quo. Equally influential to adoption was the presence of knowledgeable department chairs and support staff to help train and guide faculty members towards adoption.
Simulation and Virtual Technologies for Workforce Learning:
Successes from Alternate Realities

Lynna J. Ausburn, Oklahoma State University
Floyd B. Ausburn, Oklahoma State University
Gary Dotterer, Rogers State University
Andre Washington, Langston University
Paul Kroutter, University of Arkansas, Fort Smith

Abstract

Grounded in diffusion of innovations theory, this study presents quantitative and qualitative empirical evidence of several types of learning in screen-based virtual environments (VEs) and hands-on simulation technology. Successes for these technologies are presented for 6 areas: achievement of “presence” in VEs, orientation learning, transfer of training, procedural knowledge, workplace readiness for people with disabilities, and overcoming language problems for ESL students. This evidence is presented to support the diffusion of these instructional innovations through the sister workforce development systems of CTE and HRD. Further research is recommended on the outcomes of virtual and simulation technologies through mixed-method research designs to capture both quantitative and qualitative indicators of learning successes.
Problem Based Learning in Agricultural Education: A Synthesis of Literature

Jaclyn Tweeten, Iowa State University
Courtney Taglauer, Iowa State University
Joshua Day, Iowa State University
Ryan Anderson, Iowa State University

Abstract

An important factor in teaching is to select the appropriate teaching method for students. Problem based learning, a method of teaching, gives students a higher order thinking ability as they need to seek answers to problems unknown to them. This study sought to synthesize literature reported by many early investigators and researchers who have examined problem based learning in agricultural education. This revision was designed to address the relationship between problem based learning and the problem solving approach, determine what educators can do to incorporate problem based learning and make recommendations to educators in how to incorporate problem based learning in their curriculums. Future research is needed to determine if problem based learning supplements students in specific subjects, how agricultural educators operationalize problem base learning in their curriculum and the relationship between success in the workplace and problem based learning theory.
Accessibility and Usage of Technology by North Carolina Agriculture Teachers

Maegen R. Williams, North Carolina State University
Wendy J. Warner, North Carolina State University
James L. Flowers, North Carolina State University
D. Barry Croom, North Carolina State University

Abstract

This study examined the integration of technology into the instructional process in North Carolina agricultural education classrooms. The study used survey research methodology to collect information on the availability of instructional technology and the frequency of instructional technology use by North Carolina agriculture teachers. The study found most teachers had access to digital projectors and digital cameras. Agriculture teachers also had convenient access to a teacher desktop computer and teacher laptop computer. The most commonly used software included Internet browsers and software for managing student records. Use of technology by agriculture students was less frequent and commonly consisted of Internet searching and use of reference materials on CD-ROMs. It is recommended the findings of this research study be used to inform future professional development offerings. Also, there should be additional investigation of appropriate learner-centered approaches to technology integration and continued research on the availability and utilization of educational technology in agriculture classrooms over time.
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