PRESENTS

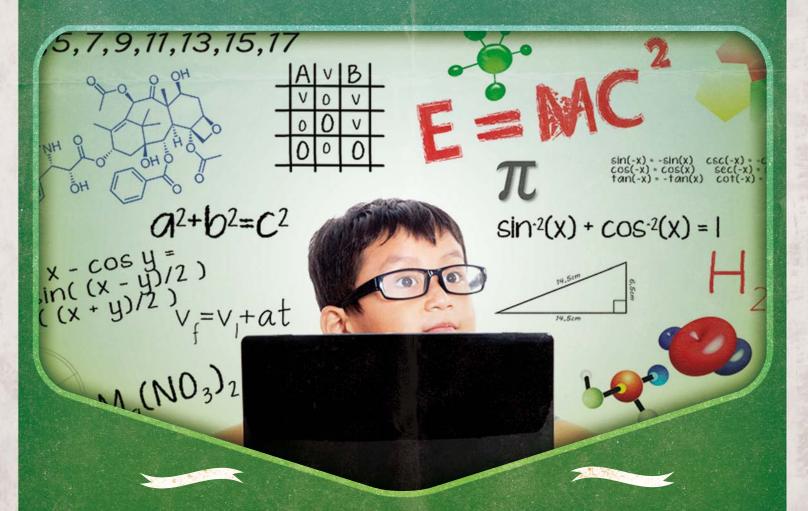
2ND INTERNATIONAL

ARGUNENT BASE NOURY CONFERENCE

SPOKANE, WASHINGTON RED LION AT THE PARK



AUGUST 5-7, 2015
VISIT ABIC.EDUCATION.WSU.EDU



2nd International Argument-Based Inquiry Conference

August 5 - 7, 2015

Red Lion Hotel at the Park W. 303 North River Drive Spokane, Washington



In February of 2013 a small conference was held at Pusan National University in Busan, Korea to explore the benefits of argument-based inquiry in science education classrooms. Argument-Based Inquiry centrally locates construction and critique of knowledge through emphasis on the epistemological framework of argument by engaging students in posing questions, gathering data, and generating claims supported by evidence. In doing so, it seeks to build students' grasp of disciplinary practices while simultaneously constituting an understanding of disciplinary big ideas. Recent reform efforts such as Common Core and Next Generation Science Standards in the United States call for such immersion in and integration of disciplinary practices and concepts, yet there are still many important theoretical and practical constraints to widespread adoption and implementation of such pedagogy. The 2013 conference was intimate, allowing time for rich and challenging discussions to begin examining some advantages and highlighting constraints.

The Second International Conference on Argument-Based Inquiry seeks to build on this initial success by bringing together researchers in science education, literacy, measurement, cognitive psychology, and mathematics education in a working conference to collectively examine and engage with the following key questions related to argument-based inquiry:

- What resources are critical for students to engage and optimize learning in argument-based environments, how do they manifest in different content domains, and how do these resources contribute to student success in ABI environments?
- Should we expect to see aspects of student learning transfer from these environments to other environments? What might those aspects of student learning be? What might be the characteristics of the learning environment that drive that transfer?

The conference will serve as a platform to explore the above issues related to ABI. Sessions are structured to emphasize conversation among participants in order to stimulate trans-disciplinary perspectives on the critical questions raised throughout the conference. We welcome you to the conversations as we seek to establish an on-going network of researchers that can support one another and address future research, development, and publication opportunities.

2nd International **Argument-Based Inquiry Conference 2015**

PARTNERSHIPS

Washington State University

College of Education College of Arts & Sciences

University of Iowa

College of Education

University of Louisville

College of Education & Human Development

CONFERENCE COMMITTEE

Andy Cavagnetto, Washington State University—Chair Brian French, Washington State University Brian Hand, University of Iowa Shiv Karunakaran, Washington State University Greg Kelly, Pennsylvania State University Libby Knott, Washington State University Richard Lamb, Washington State University Jeonghee Nam, Pusan National University Lori Norton-Meier, University of Louisville Bill Sandoval, University of California, Los Angeles Larry Yore, University of Victoria Krenny Hammer, Conference Coordinator

Conference bags provided by

DÜŞÜNM:

AKADEMISİ DOŞÜNME BECERİLERİ, SİSTEMLERİ VE ARAŞTIRMALARI

Feature Sessions

Thursday, August 6th – 3:30 p.m.

Panel Discussion – Open Forum

Moderator

Larry Yore, Distinguished Professor Emeritus, Science Education University of Victoria

Panel Members

Ying-Chih Chen, Mary Lou Fulton Teachers College
Arizona State University
Libby Knott, College of Arts and Sciences
Washington State University
Lori Norton-Meier, College of Education & Human Development
University of Louisville
David Sloan Wilson, Anthropology & Biological Sciences
Binghamton University-SUNY, The Evolution Institute

Thursday, August $6^{th} - 6:30$ p.m.

Poster Session

Friday, August 7th – 3:30 p.m.

Panel Discussion – Open Forum

Moderator

Brian Hand, Professor, College of Education University of Iowa

Panel Members

Michael Ford, School of Education, University of Pittsburgh
National Science Foundation
Perry Klein, Faculty of Education
Western University
Richard Lamb, College of Education
Washington State University
Jeonghee Nam, Department of Chemistry Education
Pusan National University

Wednesday, August 5, 2015

3:00 p.m. – 6:00 p.m. Registration

6:00 p.m. – 7:00 p.m. Welcome Reception

Thursday, August 6, 2015

8:00 a.m. – 6:00 p.m. Registration

8:00 a.m. – 8:30 a.m. Continental Breakfast

8:30 a.m. – 9:00 a.m. Welcome – Framing the Day

9:15 a.m. – 10:15 a.m. Concurrent Sessions

10:15 a.m. – 10:30 a.m. Break

10:30 a.m. –11:30 a.m. Concurrent Sessions

11:30 a.m. – 1:00 p.m. Lunch (provided)

1:00 p.m. – 2:00 p.m. Concurrent Sessions

2:00 p.m. – 2:15 p.m. Break

2:15 p.m. – 3:15 p.m. Concurrent Sessions

3:15 p.m. – 3:30 p.m. Break

3:30 p.m. – 4:30 p.m. Group Session – Panel Discussion/Open Forum

4:30 p.m. – 6:30 p.m. Extended Break

6:30 p.m. – 8:30 p.m. Poster Session – Hearty Hors d'oeuvres

Friday, August 7, 2015

8:00 a.m. – 11:30 p.m. Registration

8:00 a.m. – 8:30 a.m. Continental Breakfast

8:30 a.m. – 9:00 a.m. Welcome – Framing the Day

9:15 a.m. – 10:15 a.m. Concurrent Sessions

10:15 a.m. – 10:30 a.m. Break

10:30 a.m. – 11:30 a.m. Concurrent Sessions

11:30 a.m. – 1:00 p.m. Lunch (provided)

1:00 p.m. – 2:00 p.m. Concurrent Session

2:00 p.m. – 2:15 p.m. Break

2:15 p.m. – 3:15 p.m. Concurrent Session

3:15 p.m. – 3:30 p.m. Break

3:30 p.m. – 4:30 p.m. Group Session – Panel Discussion/Open Forum

4:30 p.m. Closing

Argument-Based Inquiry Conference 2015

	Wednesday, August 5 th	
3:00 p.m 6:00 p.m.	Registration	
6:00 p.m. – 7:00 p.m.	Welcome: Tim Church, Associate Dean for Research	
Cesare's	Andy Cavagnetto, Conference Chair	
	Reception	
	Thursday, August 6 th	
8:00 a.m. – 8:30 a.m.	Registration (all day)	
Ballroom D	Continental Breakfast	
Daintooni D	Continental Dicariast	
8:30 a.m. – 9:00 a.m.	Welcome: Andy Cavagnetto, Conference Chair	
Ballroom A	Framing the Day: Larry Yore, University of Victoria	
9:15 a.m. – 10:15 a.m.	Concurrent Sessions	

<u>Individual Paper Presentations</u> Audubon Room

Argument Writing as Discovery: Effects on Cognitive Load, Reasoning, and Learning in Science Perry D. Klein, Western University

Does learning through argument writing depend on the learner generating the claim? Upper elementary students wrote arguments about buoyancy. Students were randomly assigned to argue for a prescribed explanation or for a self-selected explanation. Effects of writing conditions and prior knowledge on cognitive load, reasoning, and learning were assessed.

A Research Tool for Tracing Idea Development in Evidence-Based Online Discussion Forums Matthew J. Benus, Indiana University Northwest

A research tool is presented that traces idea development within online discussion groups and the participatory behaviors that individual members of the learning community use to support dialogue about evidence-based ideas derived from shared resources. The tool includes 4 categories within 5 levels concerning ideas; development, building, relationship, and consolidation.

<u>Individual Paper Presentations</u> Manito Room

Mission to Planet Markle: Analysis of Elementary Students' Arguments Made Visible as Products Melanie Peffer, Georgia State University

Students engaged in problem-based learning (PBL) learn content and inquiry skills. Although PBL is a powerful instructional approach, circumstances in which it is most effective are not well understood. We examine developmentally appropriate products-as-arguments generated by first through fifth grade students during PBL.

A Comparison of Two-Year and Three-Year Teacher Implementation Cycles in Argument Based Inquiry Classrooms: Teacher Factors That Influence Student Learning (K-3)

Lori Norton-Meier, University of Louisville

The results from this three-year mixed methods study examines the differences in teachers who participate in two-year or three-year implementation cycles. The findings will illuminate the complexity of children's language development that can occur when a teacher's implementation includes focusing on the big ideas of science, creating student-centered learning opportunities, and providing dialogic spaces in the classroom where children are engaging in argumentation.

10:15 a.m. – 10:30 a.m.	Break
10:30 a.m. – 11:30 p.m.	Concurrent Sessions

<u>Individual Paper Presentations</u> Audubon Room

Evolution, Prosociality, and Argument-based Inquiry David Sloan Wilson, Binghamton University

Argument-Based Inquiry is a particular pedagogical approach to learning. Most pedagogical approaches require a social environment that fosters cooperation, civility, and professionalism among students and teachers. Evolutionary theory can help in the construction of such social environments.

Amiable Refutation: Preparing Ourselves for Scientific Argument

Michael Wallace, WSU Extension

Can we really build an educationally beneficial community of practice within the field of Inquiry for young learners? What can we learn from similar attempts to implement cooperative learning? Extension Educator Michael Wallace proposes structural activities intended to scaffold young people in the social context effective scientific argumentation.

<u>Individual Paper Presentations</u> Manito Room

Different Roles of Argumentative and Explanatory Writing in Learning of Science

SaeYeol Yoon, Delaware State University **Brian Hand,** University of Iowa

This study explores different roles of argumentative and explanation writing in learning of science. First, authors explore differences between two writing tasks drawing from Walton's perspectives. Then, in a case study, authors unpack how three fifth-grade students have richer understandings of science through two writing tasks over the unit.

The Art of Justifying: How It Arises, What It Comprises, and Thoughts on Applying To Science
Libby Knott, Washington State University

The presenter focuses on different forms of justification arising in mathematical exploration and inquiry, explores the contexts in which they arise, and attempts to categorize different types of justifications, and the role they play in generalizing. The presentation will explore possible parallels, connections and extensions of these ideas to ABI in science.

11:30 a.m. – 1:00 p.m. Ballroom D Lunch

<u>Individual Paper Presentations</u> Audubon Room

Moving from Instruction to Learning: A Case of Nationwide Professional Development Project Murat Gunel, TED University

This paper presents ABI based PD project results within 21 states of Turkey. Participant teachers attended a longitudinal in-service PD. The data collected from the students include academic achievement tests, and critical thinking tests as well as video records of implementations, observation protocols, surveys and interviews. Results of the findings for the project are presented and discussed.

Teaching Scientific Reading and Writing as Investigation and Inquiry Tools in Secondary Science Classrooms Cynthia Greenleaf, WestEd

In this paper the presenter introduces an instructional approach to integrate science reading, writing and argumentation with science inquiry practices. They will present evidence from implantation studies of students' growth in literacy practices as well as teacher and student surveys evidencing increased engagement in inquiry practices to teach and learn science.

<u>Individual Paper Presentations</u> Manito Room

The Process of Generating an Argument at a Mechanistic Knowledge Level

Lauren Barth-Cohen, University of Miami Jonathan Shemwell, University of Maine Daniel Capps, University of Maine

This presentation examines the process of how arguments develop at the mechanistic knowledge level. The analysis documents three candidate mechanisms of change, rejection, addition and conflict between intuitive knowledge pieces that propelled changes in individual's arguments about historical bedrock geology. The results illustrate the productive use of knowledge within argumentation.

Teachers' Understanding of How to Foster Conjecturing, Generalizing, and Justifying In Middle Grades Mathematics

Kristin Lesseig, Washington State University, Vancouver

A yearlong study of a middle grades math team revealed how teachers developed shared understandings of conjecturing, generalizing, and justifying, and ways to promote students' engagement in these practices. These findings will ground discussion around instructional strategies that teachers have identified as important levers to advancing argumentation in the classroom.

<u>Individual Paper Presentations</u> Willow 1

Supporting Teachers' Transition to Argument Based Inquiry: A Report on the EUCAPS Project
Andy Cavagnetto, Washington State University

This paper will summarize the EUCAPS professional learning project and highlight key findings emerging from the three-year project. Implications for traditional professional learning models will be discussed.

Scientific Discourse in Three Elementary Classrooms: Teacher's Role of Questioning in Engaging Students in Argumentation

Ying-Chih Chen, Arizona State University

This study identified four teachers' roles—dispenser, moderator, coach, and participant—to support students' dialogic interaction and cognitive thinking from three elementary argument-based inquiry classrooms. This study suggests that an essential component of teacher professional development should include the study of teacher roles of questioning for establishing argumentative discourse.

2:00 p.m. - 2:15 p.m.

Break

<u>Individual Paper Presentations</u> Audubon Room

Teacher Assessment Literacy in the Argument-Based Inquiry Classroom

Chad Gotch, Washington State University

This presentation will discuss ESEA waiver requirements in Oregon, the assessment mandates presented by these requirements, and the ways in which the ABI classroom supports and challenges teachers in this reform context. Two specific channels of assessment—constructed responses and student talk—will serve as pillars for the discussion.

Argument-Based Inquiry: A State Perspective Ellen K. Ebert, Office of the Superintendent of Public Instruction, Washington

This session will use a discussion format to examine key questions related to Argument-Based Inquiry and a state perspective. Session focus questions are: What are the policies at the state level that support movement to ABI and what are potential obstacles? How can ABI researchers support and advance OSPI initiatives?

<u>Individual Paper Presentations</u> Manito Room

The Stabilization of Accepted Performances and Progress of Scientific Practice through Critique

Michael J. Ford, University of Pittsburgh
National Science Foundation

Argumentation is the foundation of scientific practice. This is substantiated through Rouse's (2007) three features that distinguish practice from other accounts of social regularities. Evaluation and critique are competencies that underlie performances within practices and stabilize them. The stabilization of practice through critique implies quality control and open-endedness, effecting progress.

The Development of a Learning Progression for Scientific Argumentation

J. Bryan Henderson, Arizona State University Jonathan Osborne, Stanford University Anna MacPherson, Stanford University Andrew Wild, Stanford University

The presenters introduce a hypothesized three-tiered learning progression for scientific argumentation. The learning progression accounts for the intrinsic cognitive load associated with orchestrating arguments of increasingly complex structure. This learning progression also makes an important distinction between construction and critique. Validity evidence is presented based on Item Response Theory.

3:15 p.m. – 3:30 p.m.	Break
2,20 4,20	Cuana Sassian
3:30 p.m. – 4:30 pm	Group Session
Audubon Room	
	Panel Discussion – Open Forum
	Moderator: Larry Yore , University of Victoria Panelists:
	Ying-Chih Chen, Arizona State University
	Libby Knot, Washington State University
	Lori Norton-Meier, University of Louisville
	David Sloan Wilson, Binghamton University
	What resources are critical for students to engage and optimize learning in argument-based environments, how do
	they manifest in different content domains and across ability levels, and how do these resources contribute to student success in ABI environments?
4:30 p.m. – 6:30 pm	Extended Break
6:30 p.m. – 8:30 pm	Hearty Hors d'oeuvres
Ballroom D	Poster Session
Poster Presentations:	High School Students and Critical Reading of
	Questionable Science Texts on the Internet
	Anita Tseng, Stanford University

Freshmen to Argue About SSI

The Importance of Context in Supporting College

Barbara J. Barnhart, University of Pittsburgh

Virtual Mentoring in an Argument-Based Middle School Video Game

Deena L. Gould, Arizona State University

The Influence of Epistemic Beliefs on Pre-Service
Teachers' Engagement in Argumentative Discourse
Heather Barker, Middle Tennessee State University

Conditional Collaboration: Examining the Impact of Socio-Environmental Conditions on Classroom Cooperative Engagement

Joshua Premo, Washington State University

Change of the Beginning Science Teachers' Beliefs and Teaching Practice in Argument Based Inquiry

Jeongin Kwon, Pusan National University Jeonghee Nam, Pusan National University Eunjee Son, Pusan National University

Examining the Relationships between Students' Views on the Use of Models and Representation

Kyungwoon Seo, University of Iowa

Supporting English Language Learners in the Argument-Based Classroom: Student Produced Videos to Document Claims

Laura Grant, Washington State University

Investigation about the Cognitive Process of Student's Modeling At Modeling Emphasized Argument-Based Chemistry Experiment

Dongwon Lee, Pusan National University **Jeonghee Nam,** Pusan National University **Yoeun Kang,** Pusan National University

Using Peer Assessment as a Tool for Scaffolding Student's Argumentation in Argumentation Based Inquiry

Seonwoo Lee, Pusan National University **Jeonghee Nam**, Pusan National University

A Review of Discourse's Outcomes for English Language Learners in Mathematics and Science Classrooms Lindsay Lightner, Washington State University

Development of Student Critical Thinking Skills through Inquiry Based Science Writing with Multimodal Representation

Yejun Bae, University of Iowa

Self-Explanation in Argumentation: The Impact on Learning and Critical Thinking Performance Zhe Wang, Washington State University

	FRIDAY, August 7 th	
8:00 a.m. –	Registration	
Ballroom D	Continental Breakfast	
8:30 a.m. – 9:00 a.m.	Welcome: Andy Cavagnetto, Conference Chair	
Ballroom A	Framing the Day: Brian Hand, University of Iowa	
9:15 a.m. – 10:15 a.m.	Concurrent Sessions	

<u>Individual Paper Presentations</u> Audubon Room

The Argument-based Strategies for STEM Infused Science Teaching (ASSIST) Teaching Approach: An

Overview

Mark McDermott, University of Iowa

The Argument-Based Strategies for STEM Infused Science Teaching (ASSIST) approach is a comprehensive model combining characteristics of effective STEM learning environments, research supported argument-based teaching strategies, and communication practices. Theoretical ideas underpinning the approach as well as practical tools to utilize the approach will be discussed.

The Impact of the SWH on the Development of Reflective Thinking in 12th Graders

Sozan Omar, King Saud University

The research aims to identify the impact of the Science Writing Heuristic (SWH) on developing reflective thinking of 42 chemistry students in 12th grade. A quasi-experimental method was used with single group design. Khawaldah's (2012) five fields' reflective thinking instrument was used. Results illustrated a statistically significant difference only in the field of generating meaning.

<u>Individual Paper Presentations</u> Manito Room

Student Written Discourse in Chemistry Laboratory Reports Leads To Better Understanding of Chemistry Concepts

Thomas Greenbowe, University of Oregon **Marian De Wane**, University of California, Irvine

This preliminary study investigates the influence a laboratory instructional strategy—the Science Writing Heuristic (SWH)—had on improving students' understanding of buffer solutions and electrochemistry. The SWH approach helps students do inquiry science laboratory work by structuring the laboratory notebook in a format that guides students to answer directed questions instead of using a traditional laboratory report.

Implementing an Argument-Based Inquiry Initiative in Introductory Chemistry: The Science Writing and Workshop Template

Sadler McKnight, University of the West Indies Norda Stephenson, University of the West Indies

This study explored how the implementation of one argument-based inquiry approach, the Science Writing and Workshop Template (SWWT), impacted introductory chemistry students' laboratory examination and critical thinking performance. The SWWT showed efficacy in improving students' laboratory and critical thinking scores over their traditional counterparts. The implications of the study are discussed.

10:15 a.m. – 10:30 a.m.

Break

<u>Individual Paper Presentations</u> Audubon Room

Examining Prospective Science Teachers' Understanding on Chemical Changes Using Virtual Chemistry Laboratory

Fatma Yaman, Bozok University

This study aims to investigate Prospective Science Teachers' (PST) understanding and argumentation skills on chemical changes using SWH approach with Virtual Chemistry Laboratory. The results show that the implementation is useful in terms of promoting PST' understanding, recording observation, generating claim and evidence related to microscopic level of representation.

Using a Visual Online Tool to Teach Argumentation Skills to Biology Undergraduates: Case Studies Joan Sharp, Simon Fraser University Hui Niu, Simon Fraser University John Nesbit, Simon Fraser University

A new online argumentation visualization tool, the Dialectical Map (DM), was used to facilitate the teaching of argumentation skills. Argumentation and critical thinking skills of undergraduate biology students using the DM appear to have improved. Findings are interpreted with caution due to the small sample sizes in the case studies.

<u>Individual Paper Presentations</u> Manito Room

The Importance of Evidence Construction in Argumentation

Lauren Barth-Cohen, University of Miami Jonathan Shemwell, University of Maine Daniel Capps, University of Maine

The presenters introduce the notion of evidence construction; the process of turning a scientific observation (data) into evidence for an argument. They present contrasting cases of evidence construction in which observing to "collect" the evidence was more or less effortful, and argue that evidence construction contributes to the building of knowledge.

Pre-Service Elementary Teachers' Use of Claims-Evidence-Reasoning Framework in Science Units Nicole J. Glen, Bridgewater State University

This presentation will showcase a study of pre-service elementary teachers' uses of a claim-evidence-reasoning framework to teach science. It will generate a discussion of what scaffolds and experiences are needed to help pre-service teachers use argumentation, given what they are struggling with while building upon the successes in their lessons.

11:30 a.m. - 1:00 p.m. Ballroom D

Lunch

1:00 p.m. - 2:00 p.m.

Concurrent Sessions

<u>Individual Paper Presentations</u> Audubon Room

Contemplating Epistemic Frames Usefulness in Explaining Professional Development Outcomes Todd Campbell, University of Connecticut

This paper will explore the extent to which epistemic frames, as long-term social norms or classroom cultures more reflective of scientific activity, emerge out of professional development focused on constituting knowledge with science practices like argumentation and modeling.

Delineating the Characteristics of a Professional Development Program within ABI Context through a Science Teacher Training Project-AmgenTeach in Turkey

> Murat Gunel, TED University Burcu Kilic, Middle East Technical University Kutlu Tanrıverdi, TED University

This paper aims to delineate the characteristics of the teacher Professional Development (PD) program that was implemented within Argument-Based Inquiry (ABI) context, in the 2014-15 academic year, in Turkey. The extent of the impact of the PD program on target groups was reflected through participant evaluation forms.

<u>Individual Paper Presentations</u> Manito Room

Integration of Argument-Based Inquiry within Problem-Based Learning in Medical Education Brian Pinney, Des Moines University

SKIPPs (Scientific Knowledge Integrated into Patient Presentation) are a pilot program that integrates a Problem-Based Learning format with Argument-Based Inquiry and writing-to-learn opportunities. Written explanations are designed to be at faculty level and patient level. Initial results are positive.

An Exploration into Using Argument-Based Inquiry in a Mathematics Transition to Proof

Shiv Karunakaran, Washington State University

This presentation will report on results from a preliminary study examining the effects of using an argument-based inquiry approach to teaching an undergraduate transition to mathematical proof course. It will also feature lessons learned from the preliminary study as it influences an upcoming second iteration of the course.

2:00 p.m. –	2:15 p.m.

Break

2:15 p.m. – 3:15 p.m.

Concurrent Sessions

<u>Individual Paper Presentations</u> Audubon Room

Computational Model as a Means to Examine Complex Systems of Interactions in a Science Classroom Richard Lamb, Washington State University

The discussion is focused on the use and exploration of a relatively new set of research tools designed to examine the student learning. Computational modeling allows researchers to probe the complexity of learning at a system level and provide evidence for cognitive change and transfer.

Examining What Can Be Transferred From Dialogical Environments as Part of Argument-Based Inquiry Brian Hand, University of Iowa

This discussion is focused on examining the concept of transfer, both proximal and distal, that emerge as a consequence of student involvement within argument-based inquiry. Researchers are now beginning to engage with the concept of transfer being much more than content knowledge.

<u>Individual Paper Presentations</u> Manito Room

Teachers Mathematical Knowledge for Teaching to Narrow a Gap between Middle School Mathematics Teachers' Perception and Practice on Student-Centered Instruction

Kyong Mi Choi, University of Iowa **Jihyun Hwang**, University of Iowa **Jessica Jensen**, University of Iowa

In this study, the authors investigate how teachers' perception/ practice of student-centered instruction in middle school mathematics classrooms is correlated with their mathematical knowledge for teaching.

Embedding Modeling within Argument Based Inquiry Jeonghee Nam, Pusan National University, Korea **Hey Sook Cho**, Pusan National University, Korea **Aeran Choi**, Ewha Womans University, Korea

The purpose of this study was to investigate the effect of embedding modeling in argument based inquiry and the cognitive process of students modeling. The results showed that argument based modeling strategy had an impact on students' cognitive, modeling and writing ability.

3:15 p.m. – 3:30 p.m.

Break

3:30 p.m. − 4:30 pm	Group Session	Friday	
Audubon Room			
	Panel Discussion – Open Forum		
	Moderator: Brian Hand, University	sity of Iowa	
	Panelists:		
	Michael Ford, University of F	Pittsburgh	
	National Science	ce Foundation	
	Perry Klein, Western Univers	ity	
	Richard Lamb, Washington S	State University	
	Jeonghee Nam, Pusan Nationa	al University	
	Should we expect to see aspects of student from these environments to other environments the those aspects of student learning the characteristics of the learning environthat transfer?	nments? What be? What might be	
4:30	Closing Remarks		

Please hand in your evaluation before departing.

SAFE TRAVELS

THANK YOU!



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