



Teaching Nature of Science through Literacy: An Early Childhood Preservice Teacher Study

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BACKGROUND

1. An understanding of Nature of Science (NOS) is a crucial component of scientific literacy.
2. Early childhood teachers may have strengths in literacy, and can use those strengths to build on their NOS understandings and teaching.
3. Using children's literature can support teaching and learning (Akerson, et al, 2011)

AIM

Using Pedagogical Content Knowledge as a theoretical framework (Magnusson, et al, 1999), we focused on:

- (1) preservice early childhood teachers' ideas about NOS and
- (2) their abilities to translate NOS ideas to young children.

METHOD

Qualitative design (Bogdan & Biklen, 2003)
 Data included VNOS B responses, lesson plans, reflections, course interactions, teacher log, preservice teacher created children's books, and classroom observations over the course of a semester. Data analysis included review of data by all researchers, with attention to NOS content knowledge and ability to translate that knowledge to young children.

RESULTS

1. Preservice teachers' NOS Conceptions changed over the course of the semester, becoming better and more refined. In all cases NOS conceptions improved.
2. Seventeen of twenty preservice teachers planned to teach NOS in their field placements, with twelve also reflecting on their instruction. These same twelve were also successful in explicitly including the NOS aspects into their stories designed for children, indicating they were able to translate these ideas into formats accessible by children.

NOS Aspect	Pre Inad	Pre Ad	Pre Infor	Post 8 Inad	Post 8 Ad	Post 8 Infor	Post 15 Inad	Post 15 Ad	Post 15 Infor
Tentative	1	18	1	3	7	10	1	9	9
Obs/Inf	11	8	1	4	10	6	1	8	10
Empirical	11	7	2	3	11	6	0	5	15
Creative	3	6	11	2	12	6	2	5	15
Subjective	5	13	2	2	8	10	0	4	14
Social/Cultural	1	1	2	1	10	9	0	3	12
Theory/Law	20	0	0	2	8	10	0	1	4

Table showing changes in preservice teacher NOS conceptions over the course of the semester.

Inad=inadequate, Ad=adequate, and Infor=informed

CONCLUSION

1. Inclusion of literacy to teach about NOS is a powerful tool for early childhood teachers.
2. Over half of the preservice teachers were able to translate all NOS elements into formats for young children. Six others not as successful with two relying on implicit methods.
3. Recommend requiring preservice early childhood teachers to explicitly reflect on their NOS understandings and teaching.

REFERENCES

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