

Improving Theory Application among Pre-Service Teachers

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## Abstract

This article describes the process of implementing Inter-collegially Supported Learning (Tigchelaar and Melief, 1997) and reflection using the ALACT model (Korthagen, 1985, 1988) an Elementary Masters in Teaching Program. This study takes a mixed-methods approach. A non-equivalent control group design using pre-test, self-regulated learning, and lesson plans as covariates are analyzed along with interviews with pre-service teachers about their thinking about teaching. The purpose of the study is to find ways to increase theory application in the practice of pre-service teachers.

## Improving Theory Application among Pre-Service Teachers

This article describes the process of implementing Inter-collegially Supported Learning (Tigchelaar and Melief, 1997) and reflection using the ALACT model (Korthagen, 1985, 1988) (Appendix A) in an Elementary Masters in Teaching Program at the University of Southeast Alaska in Juneau, Alaska. The aim of implementing Inter-collegially Supported Learning in our program is to structure a five-step individual reflection process about concrete teaching experiences through a series of questions, as well as to promote reflective discussion of the teaching experience. We expect our pre-service teachers to plan for and implement learned theory into their practice. While our pre-service teachers do a good job of planning their lessons based on theoretical understanding, implementation of these understandings in the classroom often falls short. The goal of this project then is to find ways (in this case through a structured reflection model) to increase the application of theoretical understanding to classroom practice.

Research shows teachers can systematically improve their practice by reflecting on their teaching (Korthagen and Kessels, 1999, Yost, et al., 2000, Cruickshank, et al., 2001, Korthagen et al., 2006). Reflection by pre-service teachers in particular supports their development from apprenticeship to practitioner (Hammerness et al. 2005, National Research Council, 2000). Flavell (1979) found that reflection or metacognition is essential for teachers to develop 'adaptive expertise' (Bransford et al., 2005) that is, efficiency and innovation in their teaching.

Many teacher preparation institutions in the United States, Great Britain, and Australia have implemented processes by which paired-placement of student teachers occurs. Paired placements do enhance learning and collegiality (Nokes et al, 2008,

Walsh, Elmslie, and Tayler, 2005, Brown and Roth, 2002, Wynn and Kromrey, 1999). However, these types of placements do not provide structured reflective thinking and action or develop a habit of these behaviors. There is also no evidence that paired placements alone increase the application of theory to practice.

### Method

This study takes a mixed-methods approach. The quantitative portion of the study uses a non-equivalent control group design; interviews with pre-service teachers provide qualitative data.

Pre-service teachers comprise two non-equivalent, self-selecting groups: six pre-service teachers (1 male, 5 female) with student teaching placements in Juneau, Alaska (Group One) and three pre-service teachers (2 male, 1 female) with student teaching placements in Sitka, Alaska (Group Two).

In August, University Advisers (UAs) are trained on the Explicit Theory in Lesson Plan Score Sheet (Appendix B) and the Application of Theory Observed in Lesson Delivery Score Sheet (Appendix C), the ALACT reflection model, and the Reflection Rubric (Appendix D). During lesson observations; only theory explicitly written into the lesson plan noted and scored.

Group One is pretested (their lesson plans are analyzed and teaching observed in the first month (September) of the program. At the beginning of October, Group One is trained in the ALACT reflection model. Group One then begins structuring their weekly reflections using the ALACT model. UAs continue to score Group One's lesson plans with the Explicit Theory in Lesson Plan Score Sheet and the Application of Theory

Observed in Lesson Delivery Score Sheet on a weekly basis. They also now collect and rate Group One's weekly ALACT model reflections with the Reflection Rubric.

The UA for group two is trained on the Explicit Theory in Lesson Plan Score Sheet (Appendix B) and the Application of Theory Observed in Lesson Delivery Score Sheet (Appendix C), and the Reflection Rubric (Appendix D) in August. This UA does not receive any training on the ALACT reflection model.

Group Two is pretested (their lesson plans are analyzed and teaching observed in the first month (September) of the program. Group two does not receive any training on the ALACT reflection model. Group Two is not given any structure to guide their weekly reflections. Group Two's UA continues to analyze their lesson plans with the Explicit Theory in Lesson Plan Score Sheet and the Application of Theory Observed in Lesson Delivery Score Sheet on a weekly basis. They also collect and rate Group Two's unstructured reflections with the Reflection Rubric.

The collection of data from both groups continues until the end of their student teaching in May, for a total of 30 weeks. Both groups are also post-tested in May with the LPI. Pre-service teachers in both groups are interviewed about their thinking about teaching at mid-year (December) and at the end of their student teaching in May.

This study is limited by the small and unequal groups, limiting the power of the quantitative analysis. However, this study takes advantage of examining a real situation in real time and is enhanced by interviews with participants.

#### Data Sources

Both groups of pre-service teachers completed the Learning Process Inventory (Gordon et al, 2007) prior to beginning their student teaching assignments. The learning

Process Inventory measures self-regulated learning and will be used as a covariate. The 26-item Likert scaled survey measures how often the learner uses self-regulatory learning (Gordon et al.).

Both groups of pre-service teachers' lesson plans are rated weekly by their University Advisor for explicit application of theory to practice, Explicit Theory in Lesson Plan Score. In this rating the UA simply counts the number of times the pre-service teacher's lesson plan directly addresses theory taught in their university courses. In addition, the UA counts the number of times direct application of theory is observed during the pre-service teacher's lesson delivery, Application of Theory Observed in Lesson Delivery Score Sheet. These observations comprise a composite score, where the first month observations serve as pre-test data and final month observations serve as post-test data.

Group Two interns write weekly reflections on their lessons and lesson delivery in any style they choose. They will not be aware of or use the structured ALACT model. These reflections will be given to their UA and will be rated by the UA on the Reflection Rubric.

In Group One only, pre-service teachers and University Advisers learn the ALACT (action, looking back, awareness of essential aspects, creating alternative methods of action, and trial) model (Korthhagen, 1985, 1988) five-step reflection process prior to pre-service teachers beginning student teaching. In this group, pre-service teachers complete the five-step written reflection at the end of each school week, and then meet with their Inter-collegial Support group to discuss their reflections and develop questions for the University Adviser. The University Adviser meets at the start of the

next week with the group (in addition to their regular classroom visits) and addresses their questions. The UA rates the structured ALACT model-based written reflections on the Reflection Rubric.

The reflection questions are based on the ALACT (action, looking back, awareness of essential aspects, creating alternative methods of action, and trial) model developed by Korthagen (1985, 1988). The final phase of the five step process is the first phase of the process, action, and the beginning a new cycle. The model is therefore, a spiral model, engaging the intern in on-going professional development. The reflection questions mirror the five phases of the ALACT process:

Phase 5 of the previous cycle/Phase 1 of the current cycle (Action) - What did I want to achieve? What did I want to pay particular attention to? What did I want to try out?

Phase 2 (Looking back) - What were the concrete events? What did I want? What did I do? What did I think? How did I feel? What did I think the students wanted, thought, did and/or felt?

Phase 3 (Awareness of essential principles) - What is the connection between the answers to the previous questions? What is the influence of the contexts/the school as a whole? What does this mean for me? What is the problem or the positive discovery?

Phase 4 (Creating alternatives) - What alternatives do I see? What are the advantages and disadvantages of each? What do I resolve to do next time? What don't I know and how will I learn it?

## Results

The LPI scale was administered to all EMAT participants at the beginning of the program and will serve as a covariate within the overall design. While the population

was small, overall reliability of the scale was quite acceptable ( $\alpha = .76$ ). Despite the small population size, LPI scores were roughly normally distributed, indicating its usefulness as an inferential predictor variable ( $\mu = 146, \sigma = 14.8$ ). Mean differences between the cohorts were observed; however, due to the small and uneven size of the groups, t-test results were not significant ( $t = .71, p = .50$ ). Table 1 displays descriptive statistics for each group.

Table 1. LPI descriptive statistics for Juneau (Group One) and Sitka (Group Two) cohorts.

Cohort	N	Mean	Standard Deviation
Juneau	6	147.0	16.95
Sitka	3	139.3	9.86

#### Significance

Reflecting with a peer develops a habit of practice new teachers might continue throughout their career. We believe a habit of collaborative reflection also supports teachers making connections between theories taught at the university and their practices in the classroom thereby increasing the use of research based pedagogy, teacher inquiry, and the development of adaptive expertise.



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