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ABSTRACT

Tutoring is not a new idea nor a new practice in the world of teacher education. However, our understanding of how to better use tutoring as a vehicle for applying authentic knowledge and pedagogy is expanding rapidly. The purpose of this article is twofold. First, it provides an overview and rationale of a tutoring-field experience in which we engage our students. Second, it shares the various dilemmas and successes that our college students experience as they engage in this tutoring experience. (Contains 16 references.) (Author/SAH)

A Tutoring Field Experience as a Vehicle for Applying Authentic Knowledge and Pedagogy: Dilemmas and Successes

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Tutoring is not a new idea nor a new practice in the world of teacher education. However, our understanding of how to better use tutoring as a vehicle for applying authentic knowledge and pedagogy is expanding rapidly. The purpose of this article is twofold. First, we will provide an overview and rationale of a tutoring-field experience in which we engage our students. Second, we will share the various dilemmas and successes that our college students experience as they engage in this tutoring experience.

Research-based Nature of Tutoring Project

For the past five years, instructors of our MATH 222 course (Math for Elementary Teachers II) have required a tutoring field experience from their students. This field experience has developed based on the research concerning the teaching and learning of mathematics as well as from our informal research with our own students. Research in the learning and teaching of mathematics shows the difficulties elementary children have with arithmetic (Labinowicz, 1985 and others). However, research also highlights children's abilities to make sense of whole-number arithmetic (for example, Carpenter et al., 1998; Fusen, Smith & LoCicero, 1997; Kamii, 1986; Kamii & Dominique, 1997; Kamii, Leis, & Booker, 1998; Lambert, 1986; and Schifter, Bastable, & Russell, 1999). These studies illustrate how children who are taught through a more conceptually-based approach can invent and/or reproduce many inventive methods and procedures to find answers and make sense of whole-number arithmetic. Newer elementary mathematics curriculums have begun to integrate the ideas of the National Council of Teachers of Mathematics teaching and curriculum standards (NCTM, 1989, 2000) and are emphasizing a more conceptually-based approach to learning and teaching whole-number arithmetic. In MATH 222 we expose our students to the results of this research and the expectations of the newer curriculums. However, this process is less than smooth. Recent research by Eisenhart et al. (1993), Jacobs, Yoshida, and Stigler (1997), Mewborn (1999), Raymond (1997), and Vace and Bright (1999), reveals that students find it much harder to implement a more conceptual and meaningful approach to teaching and learning than in learning these approaches themselves.

In our informal research, we have analyzed our students' work, the process that we use to prepare our students for the experience, and the ways in which we evaluate our students in conjunction with this tutoring experience. This analysis has led us to identify three major categories (beliefs and understanding, instructional decisions, and reflection) which we feel are critical components of a meaningful tutoring field experience for both our students and the children they are tutoring. This analysis has caused us to make significant changes in how we prepare our students for the tutoring experience and how we assess them.

Based on the implementation of our formal and informal research, our tutoring project offers a highly structured environment. Students practice what they are learning in the course and also receive feedback during the process so that they can begin the process of implementing a more conceptual approach to teaching mathematics for meaning and understanding.

Brief Overview of Tutoring Project

For the past 5 years, MATH 222 instructors have implemented a four-week tutoring component in the course. In the first part of the tutoring project, our college students diagnose and tutor either a 2nd, 3rd, or 4th grade child in mathematics focusing primarily on the children's understanding of whole-number arithmetic. In particular, our students assess their child's understanding of the four basic operations, number facts, mental math strategies, place value, and standard addition and subtraction algorithms. This diagnosis is based on the work of Labinowicz (1985). After diagnosing their child, our students tutor their child for three, one-hour sessions, approximately once a week. During this process, students must turn in a number of written documents in order to analyze and summarize these experiences. These documents include: a diagnosis summary report, three tutoring reports, and a tutoring summary report. The diagnosis summary report documents the child's mathematical understanding based on the child's responses during the diagnosis. The tutoring reports outline what our students do with their child as well as their analysis and reflection of each tutoring session. The tutoring summary report summarizes the three tutoring reports, offering an overview and analysis of all three sessions.

However, before the diagnosis and tutoring actually begins, we spend a significant amount of class time preparing our students to diagnose and tutor their child in a reasonable manner. This preparation includes the use of case studies, exemplary tutoring ideas, and detailed class discussion. We also concentrate on helping our students develop a deep conceptual understanding of the mathematical material they will tutor.

Main Categories of Dilemmas and Successes

As we analyzed our students' (written) tutoring documents, three main categories emerged as essential for a mathematically and pedagogically meaningful tutoring experience. Specifically, these categories involve: beliefs and understanding, instructional decisions, and analysis and reflection. Within each category, subcategories occur (see Figure 1). For the remainder of this article we will highlight, through the use of cases, some of the various dilemmas and successes that our students experience in these three main areas throughout their tutoring experience.

Beliefs and Understanding: Mathematics

Our students' beliefs and understandings about mathematics and how mathematics is learned and should be taught significantly influence the depth of analysis that they can provide of their child's mathematical understanding. These beliefs and understandings also dictate students' choice of activities and perceptions of what occurs during the tutoring sessions.

Students often misuse standard mathematical terms. Common areas of difficulty include: differentiating between operational concepts, basic fact knowledge, and mental math strategies as well as differentiating between concepts and procedures (i.e., the concept of multiplication as opposed to the procedure for calculating products). For example, Travis's tutor, a conscientious and fairly mathematically strong student, confuses place value and fact knowledge when she highlights Travis' increased understanding of facts in the "fact knowledge" section of her tutoring summary report:

> I was very pleased to see that after our first two sessions that Travis was beginning to see and understand the use of ten within our number system. With the use of Unifix cubes and the 100's board he was adding such numbers as 45 plus 30 without using his fingers. He understood that if he was at 45 he had to add 3 sets of ten to that. He also realized that if he was on 45, ten more would be 55, then more then [sic] that would be 65, and then the third ten would be 75.

This tutor does not realize that she has been working with place-value concepts since this is not a traditional activity that explicitly uses place-value vocabulary. In addition, she assumes that simply because they were adding values, they must be working on basic fact knowledge.

In contrast, Dalton's tutor, another mathematically strong student, does a nice job of distinguishing between basic fact knowledge, mental (fact) strategies, and counting.

> Dalton seems to be developing basic fact knowledge. Although he did not utilize his fact knowledge in the story problems (relied on fingers), he did simplify the written addition problems presented. For example, when presented with 9+6, he broke 6 into 2 sets of 3: 9+3=12 and 12+3 =15. For the problem 8+7, Dalton wanted to use the cubes; he stated that 2 could be taken from the 7 and then added to the 8. He seemed to be close to using the landmarks of five and ten. However, when he found that he couldn't use the cubes he resorted to mouthing the numbers up from 8 and used counting strategies for the remainder of the problems.

This tutor understands that Dalton's use of counting demonstrates deficiencies in his fact knowledge. In addition, she differentiates between mental math strategies that were used to solve addition situations and basic recall of facts to solve an addition problem.

Beliefs and Understanding: Teaching and Learning Mathematics

Some of our students have very traditional views of how mathematics is taught and learned. Their views of the role of the teacher/tutor in the learning process and the responsibilities of the student in that same process are apparent in the choices that make in the tutoring process and in the way they reflect on their experiences. Some common beliefs include: the teacher is a person who tells, shows, and/or explains, practice is a way to gain understanding, and children's errors are often due to inattentiveness, carelessness, or forgetting rather than due to a fundamental lack of understanding of an underlying concept.

Alyx's tutor, another mathematically strong student, shows some growth in her understanding of the role of the teacher/tutor through this tutoring experience. In the following excerpts, we note that this tutor initially plans a lesson to show her tutee Alyx how the standard algorithm works. However, as she reflects on both her own and her child's experiences during this tutoring session, she realizes that her belief (showing is a good teaching model) is inadequate. Through reflection she acknowledges a need to modify her approach for future sessions. For her first tutoring session, Alyx's tutor outlines her tutoring plan:

> Concerning algorithms, I plan to simply present addition and subtraction problems to Alyx for her to work out. I will watch her carefully and question her as to how she came to the answer or why she worked out a problem in a particular way. . . . In working out

> the subtraction problems, I plan to first show Alyx that you can't always just subtract the smaller number from the larger number in each place value, but that in some cases it is necessary to regroup numbers. I will then work the algorithm through, step by step with Alyx, explaining to her how the algorithm works.

In this plan we plainly observe this tutor's emphasis on explaining and showing. However, during this tutoring session, Alyx clearly struggles to make sense of the situation.

> . . . In another problem 75-18, Alyx changed the 7 to an 8 instead of a 6. I asked her why she changed it to an 8, and she said she didn't know. However, she did quickly erase the 8 and wrote a 6 down instead. I asked Alyx why she regrouped the numbers in order to subtract, but she didn't seem to understand.

After completing the session, the tutor reflects over her experiences:

> In opposition to what I concluded in the diagnosis, Alyx showed me that she did know how to regroup numbers. However, she often forgets to regroup when doing subtraction problems, so I plan to present her with more algorithm subtraction in upcoming tutoring sessions. I was a bit uncertain as how to use other means to address and tutor algorithms besides just giving Alyx algorithm problems to work along with my guidance. Perhaps I ought to focus more on place value and use what she knows about place value of numbers to help her understand the concepts behind algorithms and why they work.

Alyx's tutor illustrates a "naive" understanding of Alyx's failure to properly regroup (which she attributed to forgetfulness). However, she does begin to realize the inadequacies of a "show and demonstrate" approach. In the following two tutoring sessions, this tutor has Alyx use Unifix cubes and then groups of straws to model addition and subtraction algorithms in order to help Alyx develop a more conceptually-based understanding of algorithms.

Instructional Decisions

As our students begin the actual tutoring process, they make a variety of different types of instructional decisions which include planning for the tutoring sessions and decision making as they execute and follow through with their tutoring plan. Instructional decisions present during the planning stages include:

* the activities and tasks in which our students will engage their child;
* the sequencing of these planned tasks;
* the length of time spent on these tasks;
* the logistics of following with their diagnosis conclusions or previous reflections.

Their decision making during the execution stage of their tutoring plan involves:

* our students' use of questions;
* our students' attention to strategy or comprehension rather than practice;
* our students' responses to the child;
* decisions made at critical moments resulting in missed or seized opportunities.

Planning Decisions: Choice and Timing of Activities

When planning their tutoring sessions many of our students struggle at the first stage, choosing tasks. They often choose mathematically inappropriate tasks because they ignore an obvious need, do not understand the mathematical concept themselves, or because they target what appears to be an obvious success for a child. For example, when targeting operational concepts, and stories in particular, the tutors might give little attention to the child's need to work on the comparison (missing addend) subtraction stories and focus more on take-away stories. In addition, our students demonstrate their own lack of mathematical understanding when they reveal their disappointment when a child does not use or record subtraction for a comparison story or when they expect that a child must subtract to solve a subtraction problem. They often do not view children's strategies of counting up or using an addition fact as a valid way to answer a subtraction problem.

Following through on diagnosis results or previous reflections is crucial in tutoring a child. For example, because a child demonstrates some success with solving stories or using facts such as doubles, sums to ten, or strategies such as doubles plus or minus one or bouncing off tens in one session, it does not necessarily mean that the child's understanding is complete. We expect our students to revisit these ideas with their child across tutoring sessions (if only briefly) to see if the child maintains these demonstrated skills over time or if further work in this area is needed. However, some tutors work on an area for only one session and then never revisit it, believing that once demonstrated, an idea or skill is guaranteed. Thus, one function of the tutoring reports is to help us determine whether or not our students demonstrate continuity across sessions when appropriate. For example, Reynaldo, a second grader, struggles with the basic actions inherent in story situations. However, his tutor fails to consistently revisit this area in each session. As Reynaldo's tutor reflects over her first tutoring sessions, she writes:

> He [Reynaldo] seems to do better when he can both hear and look at a problem because he forgets what he is working with. He was guessing a bit at first when telling the action for the story, but when he started to think about it, he was right 5 out of 7 times. . . . In our next session I am going to work more with story problems.

However, in the next tutoring session, the tutor does not revisit the topic of stories. This tutor fails to follow through with an appropriate choice of activity. Fortunately, in this case, the tutor does return to stories and operational concepts during the last tutoring session.

Planning Decisions: Sequence of Activities

Sequencing of tasks is another important aspect of instructional planning decisions. Our students struggle to introduce an idea in order to build on the child's current understandings at an appropriate time. For example, one student began working on the use of addition and subtraction algorithms with a child whose place-value comprehension was inadequate. If this tutor had instead begun the tutoring session with place value tasks, then she could have led her child to think about numbers and to find sums and differences with models, providing a much smoother progression to understand algorithms.

Another example of our students struggling to provide an appropriate sequence of activities occurs as Reynaldo struggles to recall very basic facts. His tutor, however, begins her tutoring of basic facts with the game of Cover-Up. In this game, the child rolls two dice, finds the sum, and then covers up that sum (if uncovered) or any other combination of numbers that produces that sum. Only later in the session does the tutor explore doubles. For a child who has demonstrated no known facts, this was inappropriate sequencing since playing this game assumes that the child already knows his/her facts. A more appropriate sequencing of activities would include working on basic facts and associated strategies to help develop fact knowledge first and then playing a game to reinforce these ideas.

The sequencing of tasks is an area that we discuss with our students as we prepare them for this tutoring experience. Happily, many tutors do a nice job in choosing an appropriate sequence of tasks and do not follow the examples of the tutors above. In contrast to these tutors, Jimmy's tutor is quite effective in spending time on tasks and helps Jimmy to develop some fact knowledge before she moves on to play Cover-Up. Jimmy really enjoyed playing the game and worked hard to find sums and to think of other possible sums for that total. Thus, the level of difficulty was more appropriate when the game was introduced.

Execution of Plan: Following the Plan

Instructional decisions made while executing a plan are revealed through the written tutoring reports submitted by our college students. In particular, we examine how they follow their plans. Areas of particular interest include the students' use or absence of questioning, their attention to pattern-finding and strategy rather than just practice, and the way in which they respond to their child. Many of our students have trouble letting their child struggle with a concept and fail to ask questions that enable the child to make sense of a particular idea for themselves. For example, when posing story situations to Reynaldo, his tutor would ask him "whether he was supposed to add or subtract when I read a problem (story) to him." Here, this tutor is trying to direct the Reynaldo's approach rather than provide an opportunity for him to find his own way of solving the problem.

A rather nice example of following through on a plan by questioning and responding to a student occurs as a tutor works with Jimmy on place value during the first session. They were using base ten blocks (tens and ones) to model a number. The tutor begins with an example:

> I took 43 and separated the 4 ten sticks and 3 ones to show him. (It is questionable as to whether showing or asking would have been a better approach) . . . We worked pretty intensely on these for a little bit and he began to catch on. I would also ask him questions to push him to think. For example, I would say, "What if we took away 15, what would be have left? Can you show me?

This pattern of tutor behavior continues as can be seen from comments from the second session:

> . . . I saw improvement in this area (place value) . . . I would give him a number like 251 for example. He would grab 2 hundred flats, 5 tens sticks and 1 cube. I also reversed it. For example, I would show 483 and have him gather the manipulatives to that number. I also questioned him. For example, I would ask him what 20 less would be. He struggled a little with [this] questioning, but it made him think. He would sit there for a while in silence, and I would have to ask him in other [terms]. Even though he struggled through my questions, he flew through the basic task. I was impressed with his improvement.

Since Jimmy is still experiencing difficulty, the tutor continues with ten more than a number. They used a number board to help Jimmy see patterns as well.

These vignettes also demonstrate the complexities and difficulties in reading and interpreting the tutoring reports that our students submit. It is difficult to truly comprehend how a particular tutoring session went or where the child truly was in his thinking or practice in order to evaluate the tutor's work since we only have our students' writing on which to base our interpretations.

Instructional Decisions: Going Beyond the Plan

Our students also need to make unexpected instructional decisions as they carry out their tutoring plans. "Critical moments" arise in which our students must react to something unexpected such as a question or comment that their child makes. These situations provide a perfect opportunity to help the child grow in mathematical understanding. However, our students often fail to seize these opportunities.

For example, when playing "Close-to-50, " Reynaldo's tutor misses an opportunity to link place value concepts with the standard algorithm for addition.

> He (Reynaldo) still does not use any strategies to add. He counts on his fingers to get his answers. When he added his numbers on paper using an algorithm, he carried his numbers correctly. I asked him why he had to carry the 1 in the number 14 and he said it was because it was too big a number and so it had to be take to the other side.

Since the tutor has not addressed algorithms and their relationship to place value, this situation provides the tutor with an opportunity to do so. However, there is no report of the tutor seizing this opportunity--a missed opportunity.

In contrast, Adam's tutor clearly seizes an opportunity in a situation similar to Reynaldo's. In this situation, Adam is counting by tens and encounters difficulties.

> I told him to start at 34 and count to 74. He was very confused by this and did not quite understand how he should go about doing it. I decided to break it down for him in easier steps. I took out the Unifix cubes and displayed 34 cubes using three sticks of ten and four singles. Then I asked him to show me 44 with the Unifix cubes and he did. The I asked him to show me ten more than 44. He correctly added one more stick of ten. [This] proceeded until we reached 74. This seemed to make sense to him. He was then able to count from 34 to 74. We practiced this a little longer and then [moved on to the next task].

These examples illustrate a variety of situations in which our students seized or missed opportunities with their children at critical moments. This ability to seize opportunities is something that we discuss with our students and try to alert them to. However, it is not something that we can directly teach our students how to do. Through feedback and reflection, we hope to make our students aware of these moments when they have occurred and how they responded so that in future situations, they are better equipped to seize a new opportunity.

Analysis and Reflection

The final area which we examined was students' ability to analyze and reflect over their experiences throughout this entire field experience. One of our ultimate goals, as mathematics educators, is to have our students become reflective practitioners both during the tutoring process and in general. For the tutoring project, we want our students to reflect over their practices as teacher/tutor. This involves analyzing: what was/was not an effective teaching strategy, what facilitated learning, why they may have encountered difficulties, and how this could help them make instructional decisions in the next tutoring sessions. The other main area in which we want our students to reflect concerns their child's mathematical understanding. This type of analysis and reflection involves answering the following questions: what can our students now say about their child's mathematical understanding of a particular topic, what does this demonstration of knowledge imply? Throughout this reflective process, we want our students to look back over what happened as well as look forward to what their experiences may imply for future interactions. We want them to grapple with the implications of what they are learning, both about themselves as a teacher and their child as a mathematical learner. We will share excerpts from tutoring reports to illustrate different levels of reflection and the types of dilemmas and successes that emerged as our students reflected over their tutoring sessions.

An example of weak reflection is demonstrated in when Kimberly's tutor submits her second tutoring report. This tutor was a strong mathematics student who, in general, articulates and justifies her reasoning in a mathematically rigorous way. However, she fails to engage in much reflection over her tutoring session with Kimberly.

> Kimberly seems to have a good grasp of modeling. She was able to do all the tasks that I asked her. When we played the cover-up game she continued to use counting strategies. She would count the dots on the dice most of the time. Kimberly was able to do all the tasks during the session. The only thing that she seemed to need to improve on was her recall of basic number facts.

Kimberly's tutor summarizes but does not pull ideas together. She fails to reflect upon the connections or implications of the events. Many of her statements are vague and non-specific. In addition, she does not reflect on her role as the tutor at all.

After receiving many examples of this (low) level of reflection, we ourselves began to engage in our own reflective process of the entire tutoring experience. As we have reflected, we have adapted and revised what we are doing (i.e., revised our scoring rubrics, introduced cases, different emphasis in instruction) to make this tutoring field experience a richer experience for our students. One principal area we have targeted is "reflection." Two semesters ago we gave students a list of questions to reflect on with general instructions in order to reflect on themselves, the child's mathematical understanding, and the tutoring experience in general. Students had difficulty doing so and tended not to look forward nor draw many implications from their tutoring sessions. This past semester, the students' reflective writing improved dramatically as we implemented changes. Roughly 2/3 of our students are now truly reflecting, though some more deeply than others. We currently offer our students stricter structure and guidelines about what constitutes reflection. Furthermore, we provide a list of specific questions for our students to reflect over and answer. This additional guidance has enabled our students to grow and become much more actively engaged in reflection and the quality of the writing has improved dramatically.

Jeremy's tutor provides a nice example of a strong reflection. She reflects over both Jeremy's mathematical understanding as well as her role as a tutor.

> It was obvious that Jeremy understood more about place value than in the first tutoring session. . . . Jeremy displayed use of strategies that related to place value and portrayed an understanding of what each digit in a numeral represented. During the "Place Value Give-Away" game, Jeremy's comments about who's tens digit was larger made me see that he has understanding. In the tossing game, his understanding showed through even more. Jeremy knew that the larger the tens digit, the better, because it would create a larger number. He used strategies in both activities to determine winners, and knew what had to occur in order for one of us to beat the other given certain circumstances. This was significant because it involved the relation of digits, and prediction of outcomes. When Jeremy was trying to toss all ten of his chips into the tens bowl, I was excited because it showed me that he knew that the more groups of ten you have, the greater the value would be. This was another strategy that portrayed Jeremy's understanding of place value.
>
> From what I had observed in the diagnosis and my observations today, I was able to see that Jeremy had more knowledge of numbers and their value than I had previously thought. He did know (or had learned) that groups of ten told something about a number and that he needed more tens for the number to be larger than mine. He also saw that if we had the same amount of tens, he just needed one more unit on order to create a number larger than mine.

Jeremy's tutor provides a very <u>specific</u> reflection concerning Jeremy's understanding. She connects various implications from the different activities they had engaged in, and gives a detailed analysis of Jeremy's mathematical understanding that is supported by evidence from the tutoring session. She continues in her reflection to analyze her role as the tutor and to look ahead to the next tutoring session.

> In thinking back on this tutoring session, I would have to say that I am most proud of my accomplishments with Jeremy. I would have to accredit that to my probing questions that cause Jeremy to think about the activities he was having so much fun with. I made learning fun for him, and he didn't really realize that he was learning at the same time. An improvement from my first session with Jeremy was my ability to check for understanding by asking Jeremy to make predictions, and think about possible outcomes, through open-ended questions that really made him think! I learned that it does pay to stimulate thinking in students, and that through probing you can better understand what the child understands about concepts.
>
> From this session I will conclude that Jeremy has come along way since the original diagnosis. I still want to talk more with him about place value and to do more activities with him next time that won't involve so many manipulatives. I want Jeremy to recognize place value and value of numerals in columns with out representing it with base ten blocks. I also think that it might be time to explore a new area briefly, such as operational concepts, or basic facts, since I skipped over them and went directly to place value.

Jeremy's tutor also begins to shift in her beliefs about the teaching and learning of mathematics. Through reflection, she realizes that Jeremy learns and internalizes the concepts much more fully when she lets him to think through the issues for himself, by asking open-ended questions and actively engaging him in the learning process. In addition, her reflection of his mathematical understanding allows her to make specific mathematical goals for the next tutoring session.

It is obvious that Jeremy's tutor is much more reflective than Kimberly's. In addition, this sample reflection highlights the interconnected nature of the different areas that our students struggle to make sense of as they engage in the tutoring experience. Through reflection, Jeremy's tutor is initiates a change in her beliefs about the teaching and learning of mathematics, as well as in the types of instructions decisions she needs to make in order for the tutoring sessions to become mathematically meaningful experiences for Jeremy. Thus, the three main categories that we set out to highlight in this paper are culminated through this example, demonstrating that they are interconnected but difficult, and even at times artificial, to separate.

Conclusions

Through this paper, we have provided a small snapshot of what we are doing with our tutoring field experience for preservice elementary school teachers. Our goal is to continue to help our students grow in their beliefs and understandings of the teaching and learning of mathematics, to become more reformed-based in their instructional decisions as they interact with children, and to begin the process of becoming life-time reflective teacher practitioners. We feel that our tutoring field experience does a good job of helping our students grow in these three areas and lays a solid foundation for future field experiences.

What Next? Looking Ahead

Our next goal is to write a tutoring handbook during the summer (2000). This manual will share the philosophy behind the tutoring field experience, detail the types of activities we do to help prepare our students for this experience, explain the actual logistics of the tutoring field experience, and share specific ways in which we assess our students' tutoring experiences.

Dilemmas and Successes: Three Main Categories

I. Beliefs and Understanding
   A. Mathematics
      1. Misuse of terms
      2. Differences between concepts and procedures
   B. Teaching and Learning Mathematics
      1. The role of the teacher/tutor
      2. Effective strategies for teaching and learning mathematics
II. Instructional Decisions
   A. Planning
      1. Choice of activities
      2. Sequence of activities
      3. Follow through on diagnosis and/or previous reflections
   B. Execution of Plan
      1. Following the plan
      2. Going beyond the plan (missed & seized opportunities)
III. Analysis and Reflection
   A. Looking Back
      1. About tutee
      2. About own performance
   B. Looking Forward
      1. About tutee
      2. About own performance

Figure 1. Categories of Students' Dilemmas and Successes

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