USING SIMULATIONS TO ENGAGE ALL OF THE STUDENTS ALL OF THE TIME:
ACTION RESEARCH IN A TEACHER EDUCATION PROGRAM

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Abstract

This action research paper explains the advantages and disadvantages of using simulations as alternative assessments to determine pre-service teachers' levels of readiness to participate in full stakeholder team meetings in middle schools. Results indicated that the students who participated in the simulations engaged in advanced research relevant to the roles they were to play in the simulation scenarios and that they were well prepared to interact with their peers in this assessment. Students who were interviewed after the simulated team meetings agreed that they perceived themselves ready to contribute in meaningful, collegial ways in shared decision-making at team meetings.

KEY WORDS: Alternative assessment, action research; differentiated instruction; middle school team meetings; pre-service teachers; self-efficacy; simulations; site-based, shared decision-making

BACKGROUND

This We Believe: Developmentally Responsive Middle Level Schools, the 1995 position paper of the National Middle School Association, states that the purpose of all schooling is “to help students become good citizens; lifelong learners; and healthy, caring, ethical, and intellectually reflective individuals” [p. 5]. Real world workplace environments require that employees see cause and effect relationships and collaborate to solve problems, yet too frequently schools de-contextualize learning so that students fail to see connections between the work they do in class and practical applications. If learners are to see their prior knowledge and experiences as alive and important to them, educators must challenge them to ask critical questions about the work of others in the past and present so that, together with their peers, today's students can collaborate to solve current problems.

BEST PRACTICE CLASSROOMS

One way to make connections with students' past beliefs and experiences is to build upon them. Zull [2002] suggests that there are two elements to accomplishing this. First, teachers must seek to understand students. The better they can interpret their students' thinking and prior experiences, the better insight teachers have into how the students can build on existing connections. Next, successful teachers need to be flexible, identify a variety of best practice teaching techniques, and integrate teaching strategies that engage students in meaningful discourse. Best practice [Daniels & Bizar, 2005] classrooms call for more experiential, inductive, active learning. They emphasize higher-order thinking and learning key concepts and principles in individual and integrated content areas or academic disciplines. Cooperative, collaborative activity and the development of the classroom as an interdependent
community are also important. Responsibility is transferred to the students for their work: goal setting, record keeping, monitoring, and evaluating [Zemelman, Daniels, and Hyde, 1998].

Differentiated instruction is a best practice method that is built on the premise that teachers must be willing to find ways to extend invitations to students to learn from their particular readiness levels, interests, and learning preferences [Tomlinson, 1999]. The teacher who believes that an ethic of caring is important in his or her classroom and who truly believes in the dignity and worth of every individual, responds to students by providing maximum opportunities for them to develop proficiencies in knowledge and skill areas. For instance, a teacher might say to her students at the beginning of a school day, “I noticed some of you were having difficulty with the assignment yesterday, and I thought about it last night and came up with a couple of new ways to think about the skills. I’ll be interested in seeing what you think about these strategies” [Tomlinson, 2003, p. 31]. From listening to her reflections, the students infer that they are in their teacher’s thoughts when she is away from school, she cares about their growing capabilities, and she wants them to succeed. They also perceive that she values their opinions.

In differentiated classrooms, teachers recognize that students have diverse needs. This is true not only in K-12 schools, but also in higher education. According to Carol Ann Tomlinson [2001], differentiated instruction is “proactive; more qualitative than quantitative; rooted in assessment; student-centered; and a blend of whole-class, group, and individual instruction” [pp. 3-5]. In response to student readiness, teachers can differentiate instruction in three key components (content, process, and readiness). Process in this context, Tomlinson [2001] explains, means making sense or meaning by participating in activities designed to help students move from their current points of understanding to more complex levels.

Classrooms that are democratic, inclusive, and holistic are productive grounds for developing citizens who will exemplify those traits outside the classroom. How do we establish these communities in our classrooms in teacher education programs in higher education? One way is to provide opportunities for students to practice the skills they will be expected to demonstrate during their first years as middle level teachers. Researchers at the Center for Prevention Research and Development (CPRD) have discovered a critical connection between appropriate teacher preparation programs and student achievement [Mertens, Flowers, & Mulhall, 2002]. Their work suggests that teachers who actively participated in specialized middle grades teacher education programs are more likely to be involved in effective team and classroom practices. Subsequently, these teachers hold the potential to motivate middle level learners and to heighten student achievement in their classrooms.

Currently, little research focuses on training middle level (grades 4-8) teachers to work in collaborative teams in schools that use site-based management models of shared decision-making. While cooperative learning principles and techniques are taught across the curriculum in most teacher education programs, the opportunity to practice these skills in realistic settings is limited. Another democratic method of engaging all students in information gathering, making key decisions, and drawing conclusions is to create opportunities for them to participate in simulations of the types of diverse stakeholder team meetings involving school personnel, parents, students, community and business leaders in which they will actually be expected to participate during their first years of teaching. Simulations, according to Tomlinson [2001], are activities designed to allow students to work with contexts or problems that are real world or authentic, but they appear on a “list of high-preparation differentiation activities along with alternative assessments, tiered centers, problem-based learning, and student-centered writing formats” [p. 34]. The idea of differentiating instruction at a pace that is comfortable for both teacher and students emerges as an important consideration. A teacher can reflect and refine/revise teaching strategies such as simulations and add one or two more high and low preparation approaches as students’ special interests and aptitudes are revealed.

**Advantages of using simulations**

The values of simulations in university classrooms align with those of middle level classrooms. Kellough [2000] in his textbook entitled *Integrating Language Arts and Social Studies for Intermediate and Middle School Students* maintains that simulations are “highly motivating, have been used successfully for instructional purposes outside of school, are effective in dealing with learner attitudes, offer opportunities for the application of knowledge and skills, and provide the group with a common and shared experience that can be used to extend and enrich learning if a debriefing session is included” [p. 423].

Simulations in university classrooms result in deep learning when intrinsically motivated students interact with their peers and engage and reshape concepts that can be connected with their prior experience and existing knowledge to achieve their own synthesis [Hertel and Millis, 2002]. Research preceding the 30-40 minute simulations can extend learning and assist students in supporting the
conclusions they draw as they role-play the perspectives of a variety of school and community stakeholders who share brainstorming, consensus reaching, implementing new programs, and evaluating their effectiveness in the simulations. This alternative assessment method in higher education can bridge the gap between the academics of a profession and the practice of it, and they can also provide students with opportunities for decision-making and for evaluating the consequences of their decisions.

Simulations are infrequently used as alternative assessments in university classrooms [Fraenkel and Wallen, 2000]. During a team role-play, an instructor might observe and record each group member’s interactions, grasp of knowledge and application of specific principles in a content area, and ability to demonstrate problem-solving skills in a realistic scenario. An individual simulation might more closely resemble a role-play during which an instructor would observe and record what happens.

Some of the criteria that an instructor might identify as important in evaluating a simulation might include: “demonstrated understanding of substantive issues, understanding and use of processes, representation of role interests, demonstrated initiative, quality of oral presentations, demonstrated ability to work with others, demonstrated leadership, effective time management” [Hertel and Millis, 2002, p. 5].

Disadvantages of using simulations

The main disadvantage of planning and implementing simulations is their artificiality. They are alternative, not authentic assessments. The results of a simulation, however, may serve as hypotheses for other types of research investigations [Fraenkel and Wallen, 2000]. Peer assessment may be particularly meaningful if students and their instructor create a rubric for evaluation together and clarify each observation component. Self-assessment is important as it relates to meta-cognition, group interactions, and individual accountability as demonstrated through enacting a problem-solving situation. Debriefing is a very important component of every simulation as it contributes to self- and peer-evaluation.

ACTION RESEARCH IN THE MIDDLE LEVEL METHODS CLASS

Reflection is a process of making sense of one’s experience and telling the story of one’s journey. In *How We Think: A Restatement of the Relation of the Reflective Thinking to the Educative Process*, John Dewey [1933] defined reflective thinking as the “active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it” [p. 115]. Reflective action involves meeting and responding to problems. This researcher teaches from the perspective of reflective action and continually analyzes her teaching practices and the educational and social contexts in which the teaching is embedded. She sees action research as a way of relinquishing and sharing control for curriculum decisions with her students and facilitating an inquiry-based instructional method that encourages students to be more self-directed and empowered to learn.

Sagor [2005] describes action research as an investigation "conducted by the person or the people empowered to take action concerning their own actions for the purpose of improving their future actions" [p. 4]. As the students in this study and their professor progressed through reading, discussing, and studying Kellough’s [2000] book and *Turning Points 2000*, they searched for diverse instructional strategies that could be applied and practiced in their evening class. One with which students had little experience was simulations.

To enliven their study of *Turning Points 2000: Educating Adolescents in the Twenty-first Century* [Jackson & Davis, 2000], the students made a conscious effort in their MLED 4123: Integrating Methods in Middle Level Social Studies and Language Arts class to prepare for the types of authentic team meetings that they will find in schools in which a shared decision-making paradigm is valued. These students spent class time learning about democracy by practicing it. They participated in four, teacher-written, simulation scenarios of shared decision-making team meetings in which class members portrayed administrators, middle level teachers and support staff, representatives of community agencies, business persons, parents, and students. The topics and purposes that served to focus their simulated team meetings included:

- A school district technology leadership team designed to assist in formulating a plan to further integrate the use of technology tools across the curriculum in a nearby school district.
- A school support team charged with responsibility for developing a comprehensive health services plan for a middle school with a high number of limited English proficiency, low SES, and special needs students.
• An action/partnership team asked to brainstorm and reach consensus for improving specific aspects for effective parent-school faculty and staff relations and planning parent-student activities for the rest of the school year (see Appendix B).
• A shared decision-making team meeting called to determine induction year teachers’ program topics for the next school year.

The students prepared for the simulations by reading specific chapters from *Turning Points 2000: Educating Adolescents in the Twenty-first Century* [Jackson & Davis, 2000] and by conducting research using online educational journals and documents, books, and periodicals. They also interviewed community members whose careers were similar to those whom they chose to role-play during the simulations to learn their actual perspectives regarding the various problem-solving scenarios. They practiced Jackson’s concept of school governance, developing a plan for continuous improvement across a range of critical elements in a logical and orderly fashion. One nontraditional age university student described her preparations for the simulations as follows: “I began preparation for the simulation by carefully reading the information in *Turning Points 2000*. Then I interviewed people who were already working in the education system. My next step was to access the National Middle School Association website to find journal articles and documents related to the specific scenarios. Since the simulations were based on actual problems identified in today’s middle schools, finding information about the topics was not difficult.” [P. Moore, personal communication, December 13, 2007]

The students practiced “backward design” by identifying the outcome of their simulated team meetings and then considering the standards for success that they wanted to meet or exceed [Wiggins & McTighe, 1998]. Then, unlike traditional practice, they determined the kind of performance assessment that would provide evidence that they had met the goal of each simulation (see rubric in Appendix A). For example, at the end of the simulation related to identifying topics for professional development meetings for next year’s induction year teachers, these pre-service teachers brought to the task topics such as differentiated instruction, alternative assessment, integrating reading and writing across the curriculum, implementing character education programs, etc. They collaborated with their teammates to bring prior knowledge and experiences together with the new learning that they derived from *Turning Points 2000* to ensure that the program topics for the next school year would meet the needs of new teachers in their region. A second nontraditional age student observed, “The professional development seminar topics simulation was effective in allowing all participants the opportunity to reveal their individual content knowledge and also be able to add any new knowledge gained through personal experiences. This simulation seemed to me to be the one that was the most realistic because of the roles, topic, and committee size.” [D. Francis, personal communication, December 13, 2007] They also applied their recently reviewed cooperative learning group skills to the team meetings by volunteering to serve as facilitator, recorder, reporter, time monitor, or process observer.

After each of the simulated team meetings, the students debriefed their decisions and added insights gained from the experience. They followed Sparks-Langer’s [2006] guidelines for evaluating simulations and used a series of questions to assess their progress. During their final simulation, the student who served as the recorder chose to use the computer projection system to record the debriefing. This was beneficial for the group as they could immediately see their strengths and growth areas as the evaluation process unfolded. Yet another outspoken, nontraditional age student reminisced: “The debriefing session was always interesting to me. No matter how much participants discussed the simulation before the class period, the debriefing session brought attention to the fact that we held different views on the topics presented. My personal reflections made me realize that I do not always have to speak to be heard. I believe that the last simulation about parent involvement in middle schools showed that the best. I was able to share my experiences and ideas, but did not have to dominate the conversation to have my ideas considered.” [S. Dooley, personal communication, December 13, 2007]

Again, a nontraditional student added, “From the debriefing I learned that everyone expected two things from the simulations—active participation and respect. I believe that if teachers came to team meetings with these two expectations, goals would be met. I felt when evaluating our simulations that it was important to acknowledge the successes, but also to point out our weaknesses. As teachers, we should always be looking to improve and build upon our skills and knowledge. I still feel the most important thing I learned is to appreciate others’ perspectives and not try to dominate with my own ideas or opinions.” [P. Moore, personal communication, December 13, 2007]

One student found it difficult to maintain her role as a middle school teacher. She observed that the experience helped her see the multiple perspectives that the many people who gather for school stakeholder meetings bring to the table. One nontraditional age student indicated that the experience
forced him to read more carefully and to consciously identify and associate learning theories with experts in the field of education so that he could support his conclusions and be perceived as a credible expert who was concerned to serve as a change agent in the school and community. A traditional age student described a practical example of transfer of learning associated with the simulations. She said, “In an advisor-advisee setting, middle school students could participate in a simulation of student-led parent-teacher conferences by role playing a parent and an early adolescent.” [S. Andrews, interview, December 13, 2007]. In this way the middle level students would practice interacting successfully with adults.

RESULTS

Surveys (see Appendix C) of students who participated in the simulations of team meetings over a four-year period indicated that the students found their advance research and participation in the simulations focusing on authentic problems identified in actual middle schools beneficial as they moved into their induction year of teaching. Some of them returned to share their successes in collaborating with colleagues, parents, and community/business leaders; writing grants to meet the needs of diverse student populations; and planning interdisciplinary thematic units that included middle level students who generated essential questions that served as the foundations for inquiry-based instruction. Authentic assessments planned and implemented during team meetings correlated with closing the achievement gap in several middle schools in the region. Further, an emphasis on planning, implementing, recording results, and reflecting on the success of new, literacy-related instructional strategies further improved student proficiencies in reading and writing as indicated by high stakes standardized test scores.

CONCLUSIONS

Simulations should be used to teach a specific problem, process, or situation. Although some educators have used this method to teach an entire class for a semester, experience suggests that using a simulation to explain or discover a particular problem or system is usually the best use of this method of learning. The more specific the simulation, the more successful it will be. The extra planning time put into organizing or using a simulation usually results in the students better grasping the information, process, or both. Students not only prefer simulations instead of other methods of teaching, but they also tend to retain the information longer than if taught in conventional ways. When used in teacher education courses, simulations serve as models of teaching strategies that pre-service teachers will plan and implement in their own classrooms in the future.

Simulations can serve as powerful learning tools when used properly and in the right setting. They help students actually experience and solve a problem and not just read or hear about it. Democratic, inclusive, and holistic are descriptors that also serve as assessment criteria for the decisions made through simulations that brought the students closer to the reality of team decision-making than they had experienced previously.

REFERENCES


Chicago, IL: Henry Regnery and Company.


APPENDIX A
RUBRIC FOR EVALUATION OF INDIVIDUAL PARTICIPATION IN SIMULATIONS

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Exemplary</th>
<th>Acceptable</th>
<th>Not Yet Ready</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Knowledge of content and</td>
<td>Demonstrates comprehensive knowledge of educational issue; connects prior</td>
<td>Demonstrates knowledge of educational issue; refers to some specific</td>
<td>Demonstrates little knowledge of educational issue; supplies few supporting</td>
<td>Lacks initiative in contributing ideas; appears disinterested or indifferent; interrupts, dominates, or otherwise takes group off task.</td>
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<tr>
<td>supporting details</td>
<td>knowledge/experience to with new knowledge in problem solving; refers to specific supporting details; shows exceptional preparation; suggests reasonable solutions to problem.</td>
<td>supporting details; shows adequate level of preparation.</td>
<td>few supporting details; shows lack of preparation; says, “I agree,” instead of providing specific, supporting evidence.</td>
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</tr>
<tr>
<td>Active participation</td>
<td>Provides positive leadership; frequently and courteously contributes thoughtful, insightful observations; shows respect for others’ ideas; encourages equal participation by asking relevant questions.</td>
<td>Democratically contributes thoughtful and appropriate observations; demonstrates courtesy and respect for others.</td>
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<tr>
<td>Role-playing skills</td>
<td>Portrays appointed role realistically; stays in character dramatically; appears to believe role demands; relates professionally and sensitively to others on the collaborative team.</td>
<td>Portrays appointed role credibly; stays in character; makes appropriate statements; listens to others’ opinions; relates well with team members.</td>
<td>Fails to cooperate with role-playing; speaks out of character; does not listen to others’ views; lacks cooperative group skills.</td>
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<tr>
<td>Debriefing</td>
<td>Frequently notices and expresses strengths; recommends changes in growth areas for self-improvement (individual accountability) and for group interdependence.</td>
<td>Notes strengths of self and others; suggests viable improvements; recognizes growth areas for self and group.</td>
<td>Shows little awareness of strengths and/or growth areas; contributes few suggestions for improvement.</td>
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APPENDIX B

Sample Case Scenario based on
Turning Points 2000, Chapter 9
“Invoking Parents and Communities”

Ideal Middle School has recently formed an Action Team for School, Family, and Community Partnerships. This action/partnership team consists of ten members: the principal, one fifth grade mathematics teacher, one sixth grade social studies teacher, one seventh grade science teacher, one eighth grade language arts teacher, a 5-6th grade counselor, a police liaison officer, a grocery store owner who is a business partner, a parent, and a student. At the monthly meeting in September the team is planning to brainstorm ideas for improving specific aspects of effective parent-school relations, such as involving parents in diagnosing learning needs, developing alternative assessments and learning activities, and providing periodic information regarding progress toward learning goals. This action team is also responsible for planning parent-student activities for the rest of the school year. The four key aspects in which collaboration between parents and school staff members is essential include:

- Establishing continuity between home and school
  - Interdisciplinary and grade level teaming
  - Bridging linguistic and socioeconomic differences
- Monitoring students’ school work and their school careers
  - Telecommunication advances
  - Student-led conferences
- Creating opportunities outside the school for safe, engaging exploration
  - Linking adolescent learning to community resources
  - Integrating the community within the curriculum
  - Service learning
  - Career education
- Improving the school through on-site parental involvement
  - After-school programs
  - Full-service schools (Jackson and Davis, 2000, pp. 204-215).

Based on the reading that you will have done in chapter 9 and research in recent online and printed educational journals and documents, assume the roles listed above and work through the brainstorming/consensus reaching process to determine topics for parent advisory committee meetings for the months of October, November, December, January, February, March, and April and for one parent-student activity night per month. The programs you plan for parent advisory committee meetings may relate to topics discussed at other school/team meetings that you have previously attended, and the parent-student activity nights may replicate some that you know have brought students and their parents/guardians to school in ways that improve school climate as well as home-school communications and relationships.

[This is one of four case scenarios based on separate chapters from Turning Points 2000 (Jackson and Davis, 2000) and the researcher’s twenty years of experience as a language arts teacher and interdisciplinary teaching team member in a site-based, shared decision-making, teaching/learning environment in a Midwestern middle school.]
APPENDIX C

Survey of Middle Childhood Teacher Education Program Candidates 
Who Have Participated in Simulations 
of Community-wide Stakeholder Middle School Team Meetings 
University of Arkansas – Fort Smith

Instructions: Please answer the following questions, some of which have multiple parts. You may continue writing on the back or attach additional pages, if necessary.

1. What did you already know about team meetings in middle schools before learning more about them in the context of a site-based management school setting in MLED 4123: Integrating Methods Middle Level Language Arts/Social Studies?

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______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________

2. What have you learned about participating in community-wide stakeholder middle school team meetings as a result of preparing for and democratically contributing to the shared decision-making process in a simulated team meeting?

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3. From your Practicum I and II experiences with forty hours of field experience in each course, internship, or full- or part-time teaching experiences, how realistic is the simulated team meeting to the actual method of making building-wide decisions in middle schools in this region in Arkansas?

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4. As a form of alternative assessment, how successful do you believe the simulations were in revealing depth of content knowledge relevant to one of the four topics:

   a. A school district technology leadership team designed to assist in formulating a plan to further integrate the use of technology tools across the curricula.
   b. A school support team delegated with the responsibility for developing a comprehensive health services plan for a middle school with a high number of limited English proficiency, low SES, and special needs students.
   c. An action/partnership team asked to brainstorm and reach consensus for improving specific aspects of effective parent-school faculty/staff relations and planning parent-student activity nights for the academic year.
   d. A shared decision-making team meeting called to determine induction year teachers’ professional development seminar topics.
5. Which of the following goals for preparing simulations do you perceive as most important? Please rank order the goals (1 = most important).
   ___ Providing pre-service teachers with opportunities for researching effective solutions to school-wide problems
   ___ Collaborating to solve real world problems by using creative and critical thinking skills
   ___ Participating in collaborative, shared decision-making teams
   ___ Evaluating the consequences of their decisions through debriefing

6. What level of active participation did you observe among your simulation activity group's participants?
   100%  90%  80%  70%  60%

7. Describe your preparations for the simulations. Tell about how you researched the topics (see item #4 on the preceding page to review them), what you learned from reading a variety of secondary sources, how carefully you read the chapters from *Turning Points 2000: Educating Adolescents for the 21st Century* upon which the simulations were based, or with whom you spoke (classmates or teachers already working in middle schools in which teaming is practiced) about the scenarios and/or the topics to be discussed.

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8. Simulations of specific shared decision-making team meetings provide opportunities for students who are preparing to be middle school teachers to “walk the talk” of interdisciplinary teaming and community outreach and collaboration as advocated in *Turning Points 2000*. In what ways will participation in these simulations help you transfer teaming skills to the “real world” of teaching at the middle level?

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__________________________________________________________________________________________

9. What types of simulation scenarios might you create or have you created to meet the needs of middle school students? Describe a lesson plan embedded in a specific interdisciplinary or integrated unit that might engage and involve middle level students as successfully as this instructional strategy involved you in participating in problem-solving with your peers.

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10. What did you learn from the debriefing session following the simulation? In most classroom simulations, communication is interactive, nonlinear, and student-focused. In what ways were peer- and self-evaluation of your participation in the simulation beneficial during the debriefing component? What is the most important thing you learned from preparing for, participating in, and reflecting upon the effectiveness of simulations of school and community full stakeholder team meetings?

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