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ABSTRACT

This qualitative study focuses on the classroom interactions of a high school science teacher and a resistant learner in a Grade 10 science class in Australia. Data are presented in the context of a creative nonfiction story based on experiences in a rural Australian high school. In the story, a science teacher lives up to the expectations of students, parents, and administrators by requiring a disruptive student to follow classroom rules. The teacher seeks advice from parents, teachers, and administrators for handling the resistant learner. By reflecting on action and having a network of support, the teacher adjusts her management style to help the student internalize socially acceptable classroom behavior. Implications of this research include: (1) issues relating to classroom behavior may take precedence over science curriculum and instructional strategies; (2) some students may fail to find relevance in the science curriculum; and (3) sharing classroom stories of resistant learners may facilitate teacher growth. (Author/PVD)

RAT BAGS AND DRAGON LADIES

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ABSTRACT

This qualitative study focuses on the classroom interactions of a high school science teacher and a resistant learner. Data are presented in the context of a creative nonfiction story based on the author's experiences in a rural Australian high school. A science teacher lives up to the expectations of students, parents, and administrators by requiring a student to follow the classroom rules. The teacher seeks advise from parents, teachers, and administrators in dealing with a resistant learner. By reflecting-on action and having a network of support, the teacher adjusts her management style to help the student internalize socially acceptable classroom behavior. Implications of this research are (a) issues relating to classroom behavior may take precedence over science curriculum and instructional strategies, (b) some students may fail to find relevance in the science curriculum, and (c) sharing classroom stories of resistant learners may facilitate teacher growth.

Purpose

The paper focuses on the actions of a teacher and a student in a grade 10 science class in Australia. The following passage, transcribed from an interview with the teacher, sets the stage for a classroom story found later in the paper.

> It is just a different type of kid with year 10 science. You have all the really nice kids, but you also have some that are rat bags which you have got to stand on so for that class you are an absolute dragon lady. . . . When you have kids who are absolute rat bags then you stand on them and later on they become quite OK. It becomes a joke among us later on.
> (interview with high school science teacher, 6/18/96)

This interpretive research describes and interprets how a high school science teacher interacts with a resistant learner (RL). A secondary purpose is to tell a story of teaching that sparks reflection among secondary science teachers and science teacher educators. The story not only describes a classroom episode but it promotes reflection of similar classroom experiences. These reflections may spark rich conversations generating insights into best teaching practices.

How do science teachers deal with RLs? An instructional goal for all learners, often recited in teacher education programs, is to create rewarding science lessons based on students' abilities, backgrounds, and interests. In the science classroom, this translates into instruction that (a) incorporates multiple instructional methods such as hands-on laboratory activities, demonstrations, cooperative learning groups, peer teaching, learning games, multimedia, guest lecturers, and field trips; (b) individualizes assignments through course contracts; (c) intervenes with parents, administrators, and other teachers for suggestions and assistance; (d) enables students to represent their knowledge through many modalities such as writing reports, creating models, giving oral presentations, and using computers; (e) implements a classroom management plan with rewards and consequences for student behavior; and (f) punishes an offending RL or, as a last resort, has him or her transferred to the classroom of another science teacher. In spite of innovative instructional and management strategies, some students may be disruptive and unruly in class. How can teachers deal with students who continually interrupt learning activities within the classroom? Many beginning and experienced teachers struggle with this question. This paper describes how one high school science teacher deals with an RL.

Theoretical Framework

Teachers and students share experiences through stories (Clandinin & Connelly, 1991). For example, teachers use stories explaining how scientists make discoveries and students use

stories describing their own experiences. A story of a scientific discovery can model scientific inquiry. Teachers may use student stories to help students apply rational inquiry for their own experiences. Teachers and students use stories creating shared contexts in which events and actions take place. Stories connect character action and motivation by linking affective and cognitive components of experience (Richardson, 1990). For example, during an earth science lesson, a student may share an experience of observing a lunar eclipse on a warm summer night when camping. The student explains how the full moon illuminated the campsite. She describes the spreading crimson that advanced across the moon as it passed through the earth's penumbra. She talks about the curved black shadow that appeared on the moon as the eclipse deepened. Teachers may use this student story to apply scientific forms of thinking to inquire about the relative positions of the sun, earth, and moon during an eclipse. Students could be asked to hypothesize what would be seen while standing on the moon during a lunar eclipse and what a person on the moon might call the eclipse. Students may thereby develop scientific explanations to explain the sun-earth-moon system.

In the same manner that students and teachers use stories analyzing their experiences and the experiences of scientists, teacher educators use stories representing research into the teaching and learning of science (Clandinin, Davies, Hogan, & Kennard, 1993; Robinson, 1995; 1996a; 1996b). Stories of teaching enable prospective teachers to analyze decision making in the context of classroom settings. Stories may broaden the knowledge base of best classroom practices. Practicing teachers often use stories of their own experiences when talking to colleagues and friends. Stories enable the sharing of humorous or perplexing classroom episodes, and they enable teachers to consider fresh alternatives to reform their own teaching.

Methods & Site Description

The research represented in this paper was funded through a grant from the Australian-American Foundation. The author observed and taught science lessons and interviewed teachers and students within a government high school in Queensland, Australia, during a 12 week period in 1996. For this study, a high school science teacher allowed the author to observe lessons in a year 10 science class. The teacher completed a survey which contained a series of open ended questions about science lessons and activities used in the class and the kinds of student misbehaviors encountered in the class. (The survey instrument can be found in a companion paper, Robinson, in press.) The teacher also engaged in two 30 minute audio recorded interviews that were later transcribed into text. The text was analyzed with the qualitative research program NUD•IST (1993). Interviews allowed the teacher to elaborate on survey responses. It should be noted that pseudonyms are used in place of real names of teachers and students as a courtesy to maintain confidentiality (Brickhouse, 1992).

The high school was located in a small town in northern Queensland (pop. 10,000). Agriculture, meat production, and fishing were the major sources of employment in the region. About 80 students per grade level (8-12) attended the high school. Students in years 8-10 were enrolled in the junior section of the high school and the senior school contained students in years 11 and 12. Schooling was mandatory through year 10; however, most students stayed in school and graduated after completing year 12. Many year 10 students did not take their studies as seriously as year 11 and 12 students. Year 10 students were not given a high stakes assessment that affected their future career options as were year 11 and 12 students. Many high school students within this school enjoyed sports such as rugby (football), basketball, pony club, boating, fishing, and swimming. Very few of the year 10 students worked for pay outside of school.

The classroom story is next; interpretations and implications conclude the paper.

Rat Bags and Dragon Ladies

Ms. Peters hurried out of the air conditioned science office with a year 10 science workbook and two folders held tight in her arms. She had finished afternoon tea and was heading to her year 10 general science classroom. During the first three weeks of school, she had been giving lessons on energy sources and electrical energy production. Having been advised not to conduct practical activities with these students due to their juvenile behavior, she employed a variety of direct instruction and cooperative learning activities. At the start of class, she usually had a brief chalk-and-talk session with students, answered student questions, and gave instructions on the assignment. The school year was off to a good start overall, but there was a student in class who was being an "absolute idiot." She tried not to dwell on this character, but she couldn't help thinking about what to do to get him to cooperate. She knew that she must be firm because he challenged nearly everything she did in class.

As Ms. Peters approached the class, her year 10 students were lined up outside the classroom door--that is all but Russell. He was weaving through the two lines of students pushing and chatting and causing minor uproars wherever he went. Ms. Peters walked up to Russell and told him to get in line and behave himself like the rest of the students. Russell trotted to the back of the line laughing.

Ms. Peters opened the classroom door and walked into the hot stuffy room followed by the students who took their seats in the center of the room. Four students, including Russell, sat on stools at benches along the sides of the room. Ms. Peters did not turn the florescent classroom lights on because the room was filled with indirect light from the scorching Queensland sun. She did, however, flip a switch to start four ceiling fans spinning. As the fans began whirling, Russell yelled out that he wanted them to spin faster because he was hot. Ms. Peters replied that

Russell should address her by first raising his hand and then waiting to be called on. Russell groaned. She adjusted the setting and the fans began spinning faster.

Ms. Peters wrote an assignment on the board and began talking about the kinds of power plants in Queensland. While describing how power was generated to make the ceiling fans spin, Russell interrupted her by shouting "Oh, you can't prove that." Ms. Peters stopped talking and starred at Russell. The other students snickered and glanced back at him then up to Ms. Peters expecting some kind of response. Ms. Peters could tell that Russell was going to be a rat bag today.

Russell wasn't a vicious kid, but just too playful for his own good. Ms. Peters believed it was her responsibility to teach him to behave responsibly in class. Russell had violated her only class rule about not speaking while the teacher speaks. Rather than let this outburst go unchecked she walked slowly toward him. Her footsteps clicked liked clockwork in the still room. With a solemn, stern voice she instructed Russell that he had better stop mucking up or he would be sent to the principal. Russell didn't say a word. When Ms. Peters turned to walk back to the front of the room, he flashed a toothy grin to a mate.

Ms. Peters continued talking about how power is generated from coal. Students examined the diagram of a coal burning power plant in their workbooks. After 10 minutes of chalk and talk, students began reading and answering questions from their workbooks. Ms. Peters allowed students to work with a mate as long as they did not become too chatty. Then students began to work at their seats while Ms. Peters circulated about the room answering student questions and monitoring their progress on the assignment.

Russell stared blankly at his workbook. He didn't feel like learning science today. He thought about the football team and practice. He enjoyed playing footy. He was quite good at it. Russell began talking about the State of Origin just as Ms. Peters walked by. She asked Russell to stop going on about football and begin the lesson. Russell yelled that she should bug off. All heads snapped around to watch.

Ms. Peters had had enough. She walked close to Russell saying, " You can get out of my classroom now. Go see the principal!" Russell remained seated. He didn't think that Ms. Peters was actually throwing him out. But she remained firm. Her voice raised an octave as she exclaimed, "Out! And when you are ready to act in a socially acceptable manner, then you can return to this classroom." Slowly Russell rose from his seat and began walking towards the door. "Don't forget your books" continued Ms. Peters. Russell picked up his books and left the room. The rest of the students sat quietly starring at Ms. Peters for a moment, then one-by-one they returned to the questions in their workbooks.

Near the end of the class period, Ms. Peters told the students to put their books away. She asked if there were any further questions about the assignment. While responding to a student's

question, there was a knock on the door. Ms. Peters walked over, opened the door and there stood Russell. He stepped into room then Ms. Peters asked, "Where do you think you are going?" Russell replied that he was returning to the room. Ms. Peters said that he must wait until the end of the period then she would like to talk to him. The dismissal bell rang a moment later and the students stood, pushed their chairs under the desks, and left the room.

After the students were gone, Ms. Peters asked Russell to come in and sit down. She told him that she was going to talk to the football coach to make sure that Russell would attend the after school tutor sessions on Wednesdays. She also said that she would contact the principal to inform him of Russell's antics in class. Russell didn't respond and left. Then she picked up her books and folders, turned off the fans, and locked the door on her way out.

After school, Ms. Peters talked to Mr. George, the football coach and a math teacher. He said that he would support her efforts to have Russell attend the after school tutor sessions. He also asked what had been happening in her classroom. Ms. Peters explained how Russell seemed like a good kid but mucked up too much. Mr. George asked how she responded to Russell's behavior. He asked if perhaps she was helping cause some of Russell's behavior problems by being too controlling. She replied that she may have been too critical, but felt that it was important to maintain control especially at the beginning of the school year.

Ms. Peters then walked to the administration building to talk to the principal. Ms. Peters rang Russell's mother on the telephone in the principal's office. Russell's mother apologized for his behavior. She and Russell's father would chat with Russell that night. She explained that Russell was not allowed to chat back at home and asked Ms. Peters if Russell could take on some extra responsibilities in school since he was a good worker around the house. Ms. Peters replied that she would give it some thought and assured the mother that she would keep her informed of Russell's progress in the upcoming weeks. After hanging up the telephone, the principal asked what had happened in the science class. After listening to Ms. Peters' story, he asked her to write down everything for Russell's file.

The next day, the principal warned Russell that his behavior in Ms. Peters' class was unacceptable and another infraction would mean a one day suspension from school. The following Wednesday, Russell attended an after school tutor session. Although he didn't seem too pleased to be there, he opened his workbook and began answering questions about fossil fuels and energy production.

Over the next several weeks, Ms. Peters spoke to the science chair and other teachers about her struggles with Russell. As a result of the discussions, she reflected on how she had responded to Russell's behavior. Ms. Peters decided to try channeling his energy into socially acceptable behavior. When students waited in line before class, Russell was given the task of taking attendance. This met with only modest success because Russell would socialize too much.

At other times, Russell was given the job of distributing and collecting papers in class. Again, this didn't work because Russell talked too much to the other students. On Fridays, Ms. Peters had Russell help straighten the rows of desks, set chairs on desks, and place litter in the bin. Russell was very good at this job. He helped clean up the classroom on most Fridays for the remainder of the school year.

In time, Ms. Peters would occasionally reprimand Russell when he became too chatty in class, but the frequency and severity of their confrontations diminished. Russell was not sent again to visit the principal for misbehaving. Rather, Ms. Peters spoke to Russell privately outside of the classroom on the few occasions when he needed time out. By the end of the school year, Ms. Peters and Russell would have a good laugh at themselves whenever they talked about the times when she was a dragon lady and he a rat bag.

Interpretations

Theme: Effective teachers fulfill the students' expectations for the teacher.

There is an expectation that Ms. Peters maintain control of student behavior in the year 10 classroom. Students have an expectation that some chatting may take place during small group work, yet outright defiance is not to be tolerated by the teacher. Students believe that a teacher must keep them on task to enhance their own learning. From their perspective, Ms. Peters is justified in sending Russell out of the room because he mucks up too much and disrupts the class. Students are assured that misbehavior will not be tolerated in this science classroom.

Theme: Effective teachers seek alternative perspectives to better understand their own teaching.

Ms. Peters seeks help from other teachers, the high school principal, and Russell's parents. After talking to the teacher/coach, Ms. Peters reflects on her own classroom actions. She considers other strategies to manage Russell's behavior. She decides that she might be able to talk to Russell one-to-one outside of the classroom when he becomes disruptive. She stays in close contact with Russell's parents who are very supportive of her authority as a teacher. Ms. Peters implements their suggestion of having Russell assist with classroom chores and duties. The principal further assures her that he would support her recommendations regarding Russell's behavior.

Theme: Effective teachers help students internalize classroom rules.

In time, Russell internalizes proper classroom behavior. Russell becomes more cooperative. He could muck up during footy but the science classroom is a different place with different rules. Russell becomes convinced that Ms. Peters is not a push-over teacher. He

respects Ms. Peters authority as the classroom learning leader. By the end of the school year, he could even laugh with her when she jokes about their prior confrontations.

Theme: Appropriate student behavior is governed by the expectations of the community.

It is expected that students obey their teachers. Ms. Peters, the principal, Russell's parents, and most students uphold the policy that students ought to be respectful of the teacher and not be rat bags in class. It is also expected that teachers may become dragons at times to promote effective academic learning environments.

Theme: Student obedience becomes more important than issues of the planned and enacted curriculum.

Ms. Peters is justified in focusing on classroom management concerns rather than adjusting the planned and enacted science curriculum. Russell's parents do not question Ms. Peter's instructional strategies nor the science curriculum. They do not question the relevance of the science curriculum for their child. These parents grant the authority of the science curriculum to Ms. Peters. Questions of relevance and appropriateness do not surface during talks between Ms. Peters and Russell's parents.

Implications

In the context of the story, year 10 students expect the teacher to set acceptable limits on their own classroom actions. Students respect a teacher who does not tolerate mucking up in class. Confronting students in this manner may not be as effective in classroom and community contexts where (a) parents allow students to be disrespectful and unruly, (b) parents and school administrators are less supportive of teachers, and (c) the science curricula and classroom pedagogy are questioned by parents and students.

When dealing with an RL it is vital for teachers to reflect on their own classroom actions as well as the actions of the offending student. In the classroom context of the story, the teacher is justified in confronting the offending student but she does more than scold the student and send him out of the room. The teacher follows up by talking to his football coach, mother, principal, and other teachers. By seeking advice and alternative strategies, teachers begin a process of reflection that enables them to examine their own actions. Conversations about instruction and management strategies may enhance the reflection process and provide fresh alternatives for teachers. Effective teachers, like Ms. Peters, are reflective practitioners (Schon, 1983) who constantly reflect-on-action and plan their future actions on what has and has not worked in the past.

Classroom management may become the principal concern for science teachers when dealing with high school students. Students, like adults, are not always motivated to act rationally in the classroom. This can be especially true for adolescents constructing identities apart from the adults in their lives. Some adolescent students will resist the teacher at some time regardless of the learning activity or management plan adopted in the classroom.

It is difficult, if not impossible, to create a curriculum that is relevant to all students at all times. Some topics of the science curriculum will be more interesting to some than others. Russell is not keen on studying fossil fuels and energy production at the time of the lesson even though the electrical energy that he uses at school and at home are derived from fossil fuel resources. It seems that this topic ought to be relevant to him but football is more meaningful and gives him more pleasure. Likewise, other students will likely find vary degrees of relevance in whatever topic or activity is included in the science curriculum.

Russell's lack of interest in learning about fossil fuels shuts down his desire to take part in the science assignment. He does not learn as readily when not interested or motivated to learn the subject. Students must be willing to learn science content and processes based on faith that the newly acquired knowledge will be useful at some future time.

Experienced staff members ought to be careful when making recommendations to new staff members. Ms. Peters acquiesces to the science education community within the school that believes that hands-on activities are not fruitful with year 10 students. Thus, her students do not engage in laboratories or other hands-on activities that are widely promoted in the science education literature. (It should be noted that many science education studies promoting laboratories and hands-on activities may not fully consider the ramifications of having students handle potentially harmful science equipment and materials.)

Some students may allow their goal of socialization to dominate during small group learning. Hands-on activities often require students to move about the room and work in small groups. If students find it difficult to stay on task and learn science through small group work, and if it becomes too risky to allow students to handle science materials, then independent and cooperative seat work as well as teacher led demonstrations and lectures are preferred methods of instruction.

Some readers may believe that Ms. Peters over reacts in dealing with Russell. Does Ms. Peters, the coach, the principal, and Russell's parents conspire to break Russell's spirit? Or do they orchestrate a form of behavior modification that enables Russell to internalize the classroom rules and become a participating member of the classroom community? Ms. Peters is justified in disciplining Russell when he becomes defiant. However it should be noted that teachers are not infallible in their judgments and actions. Pressures associated with teaching large groups of adolescents may result in an occasional over reaction on the teacher's part. But

science teachers, like Ms. Peters, who seek the advise of others will likely learn to de-escalate many potential classroom confrontations and convince students to behave in a manner that promotes learning in classroom settings.

Returning to the broad questions highlighted earlier: Why would science teachers empathize with the idea that one must be a dragon to establish authority and maintain order in a secondary school classroom? And what can be concluded from the power struggles that exist among teachers and students in high school science classrooms? The author believes that many secondary science teachers become dragons at times to force students to comply with classroom rules. Some students may act out for attention, control, and status among their peers. Others may be driven by a desire to socialize with friends and acquaintances. Whatever the reason for RLs' behaviors, it remains for all connected to the teaching and learning of science to confront students who at times challenge the teacher and make it difficult to create classrooms environments conducive to learning.

Dealing with RLs ought to be a priority for those connected with science teacher education. Power struggles among teachers and students will likely continue since some adolescent students resist adult authorities as they struggle to achieve their own goals for power, prestige, and acceptance among their peers. But as students confront their own insecurities, it remains for teachers to set appropriate limits on student actions which interfere with learning. Parents, administrators, and, most importantly, students gain a sense of security in classrooms where teachers impose such limits.

How best to teach RLs? Firstly, understand students' expectations for the teacher. Secondly, have the fortitude to follow through with the kinds of behaviors that students expect. Thirdly, have the courage to talk to colleagues and reflect on classroom actions and make changes where necessary. There is no "one best method" to teaching RLs. What is essential is that students understand that teachers hold high expectations for student behavior and that students sense that teachers are trying to help them learn science and achieve success in the classroom. This means not giving up on RLs and believing that they are capable of learning science while behaving in ways that promote their own learning and do not interfere with the learning of others in the classroom.

It is hoped that readers have achieved a degree of verisimilitude with the classroom story in this paper. Does the story seem authentic based on experiences in secondary science classrooms? Do the actions of the characters facilitate thinking about effective science teaching and learning? As reflective practitioners, it remains for teachers and teacher educators to share their own classroom stories of RLs to better understand best teaching practices.

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