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The Role of Fictive Kinship Relationships in Mediating Classroom Competition
and Supporting Reciprocal Mentoring

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Abstract

Previous research has suggested that competitive classroom environments can play a role in perpetuating race and class inequalities. However, classroom competition can also promote learning, and eliminating it could do students a disservice. This paper draws on research literature and data from a qualitative study by Konstantinos Alexakos, Jayson K. Jones, and Victor H. Rodriguez on fictive kinship in order to explore the conditions under which classroom competition could benefit students from non-dominant groups. Based on their data, I argue that competition can support the learning of students from nondominant groups, provided that it takes place in the context of strong emotional ties and successful interaction rituals. I also discuss the role of competition in facilitating reciprocal mentoring, as students seek knowledge and skills from each other in order to participate in solidarity-building classroom interactions. In addition, I show how their study challenges a perceived dichotomy between competition and cultural orientations towards communalism.

Keywords: Science education; Social interaction; Competition in classrooms; Mentoring; Sociology of emotions

Introduction

In “Fictive kinship as it mediates learning, resiliency, perseverance, and social learning of inner-city high school students of color in a college physics class” Konstantinos Alexakos, Jayson K. Jones, and Victor H. Rodriguez, elaborate on the role of kin-like personal friendship in promoting success among non-White high school students in a challenging science class. In their study, they found that although the students were initially unsure of their abilities in physics, the strong friendship groups that were fostered in classroom interactions provided the support that the students needed in order to persevere and succeed. Based on their findings, the authors present a strong argument in support of the importance of peer relationships in science learning and against the common teacher practice of separating friends from each other in class.

Alexakos, Jones and Rodriguez describe several elements of the fictive kinship groups that made them instrumental in promoting success in the physics class. These include a sense of safety, mutual support, and strong emotional attachment. They describe how these relationships have a positive effect on “student coping, perseverance, mentorship, and role models.” Relevant processes that they discuss included the combination of friendly competition between teams with cooperative problem solving.

Although the authors sometimes refer to these ties as “close friendship” and describe the relationships as freely chosen and processual as other types of friendships are, there is still a recognition that the fictive kinship relationship differs from friendship in some significant ways. For example, the authors describe how students involved in fictive kinship relationships know the details of each other’s lives and are there for each other beyond the boundaries of the

classroom. In addition, members of fictive kinship groups use familial terms, such as “brother” or “cousin” to refer to each other. While their paper has implications for the role of friendship in learning generally, it also brings to the forefront how the kin-like relationships can help mediate some of the obstacles that students of color face in science classrooms. In this paper I discuss two of their important findings: (1) The role of fictive kinship in mediating the potentially negative impacts of competition in science classrooms. (2) The possibilities for peers serving as role models and mentors for each other in science learning in the absence of adult role models who have science-related careers. I also explore the implications of their study for teacher practice, and suggest further avenues for research.

In terms of the first finding, the authors’ study suggests that the familial aspects of the students’ relationships were strong enough to contradict the potential negative effects of competition, such as individualism, isolation and hierarchization, that can often disadvantage youth from non-dominant groups. Rather than a negative competition, which at times divides and discourages, they describe a positive competition that promoted solidarity, achievement and teamwork. In this paper, I argue that their finding regarding the interplay of competition and cooperation challenges a perceived dichotomy between competition, which is part of mainstream US classroom culture, and communalism, which A. Wade Boykin (1986) describes as a disposition of African-American students. I also explore the implications of their findings for developing a model of what productive and positive competition might look like.

In terms of their second finding regarding role models, Alexakos, Jones and Rodriguez discuss how students’ capacity to mentor each other can be enhanced by fictive kinship group participation, and present the idea that the group became a role model for the individual, and the individuals became a role model for the group. While their reconceptualizing of “role model” as

a dialectical relationship has some explanatory power, I explore another possible way of viewing the relationship between the role of the fictive kinship group and the processes by which students were able to serve as role models for each other. To do so, I draw on Randall Collins' (2004) work on interaction ritual and solidarity, which the authors also draw on in their own analysis. I also discuss the implications of their finding that fictive kinship relationships can help mitigate lack of access to science career role models. In addition, I explore the impact on students who are not part of fictive kinship groups.

Competitive Environments

In this section, I elaborate on the importance of Alexakos, Jones and Rodriguez's study for rethinking the relationship between competition, individualism and communalism. I also draw on theories of social interaction and literature on competition in sibling relationships in order to explore the conditions that enabled competition in Alexakos' classroom to serve as a positive force for solidarity building and science learning.

Challenging the Dichotomy Between “Individualistic/Competitive” and “Communal”

Previous research has suggested that an overemphasis on competition in classrooms can play a role in perpetuating race and class inequalities. For example, Kenneth Tyler, A. Wade Boykin, Oronde Miller and Eric Hurley (2006) argue that a competitive, individualistic mainstream classroom culture can lead to disadvantage for African-American students whose cultural dispositions emphasize communalism. In their research, they found that African American students and their parents valued communal and vervistic behaviors. Yet, their teachers were viewed by the students “as having significant preferences for individualistic and

competitive learning behaviors in class [rather] than communally or vernistic ways.” (p. 375).

Their research suggests that students who have a disposition towards communalism will experience disadvantage in individualistic, competitive environments. In the structure of Tyler et al.’s study, “competitive” and “individualistic” were grouped together as mainstream classroom behaviors, whereas “vernistic” and “communal” were grouped as African American cultural dispositions.

Another way in which competition can disadvantage students from non-dominant groups is by promoting hierarchization. Inequities emerge in classrooms through an emphasis on standardized tasks, which lead to a process of social comparison. Elizabeth Cohen (2000) writes “the net result of this process of social comparison is a rank order agreed upon by teachers and by students on the relative ‘smartness’ of each member of the class.” (p. 271).

In a classroom that emphasizes competition for ranks in a hierarchy, students whose cultural capital is privileged in mainstream classrooms will have an unfair advantage. Teachers tend to reward the use of discourse that is most typical of middle-class, white families, such as certain methods of argumentation (Lemke 1990). Further, these types of discourse use are not taught explicitly in schools, but instead are assumed (Lemke 1990). In contrast, some studies have found that urban, low-income students’ cultural capital, such as their use of non-mainstream English and the types of examples that they bring up in class to illustrate science concepts, is not valued by teachers (e.g., Tobin, Seiler and Walls 1999). If students are judged based on cultural capital that is part of their habitus (Bourdieu 1986) rather than their mastery of content and skills that are explicitly taught in schools, and if the cultural capital of White, middle class students is privileged over the cultural capital of students from non-dominant groups, rank-order along standardized tasks will lead to inequalities. The process of competition and

comparison could result in some students disengaging from the subject matter or perceiving themselves as not members of a science-oriented community. In this way, competition serves to reinforce social reproduction.

A related issue is that negative social interactions between students can ensue from competition. In the study that my co-researchers and I conducted in a racially and socioeconomically diverse urban magnet school, students would sometimes ridicule other students for their use of canonical science language, thereby rejecting their claims to membership in a science-centered community. Race was a factor in how supportive students would be of their peers' use of science discourse (Olitsky 2007a). In addition, one of the African American students described how a disadvantage of the magnet school was “the negative or boastful talk of the staff and the students who had high academic marks” (Olitsky, Loman, Gardner and Billups 2010). In the context of negative stereotype threat (Steele 1997), interactions such as boasting and ridicule can discourage students from nondominant groups from participating and achieving in science. The competition and rank order process can therefore lead to types of social interactions that exacerbate inequities.

One implication that could be drawn from these studies is that teachers of students from non-dominant groups should avoid fostering classroom competition in the interest of more equitable classrooms. However, other research has found that cooperative, individual, and competitive goal structures can all lead to desirable outcomes depending on the situation (e.g., Johnson and Johnson 1974). To attempt to eliminate competition from classrooms where students' home cultures emphasize communalism could end up doing a disservice to these students by depriving them of competition's benefits. Instead, more research needs to be conducted to determine the specific situations in which competition is detrimental, and the

specific situations in which competition is beneficial, for students from non-dominant groups.

While competition in science classrooms can potentially exacerbate inequalities and lead to disengagement, Alexakos, Jones and Rodriguez's study demonstrates that competition does not have to lead to these negative outcomes. Given the context of fictive kinship relationships, their study shows that competition can be one part of a solidarity-building learning environment that can support the achievement of students of color. Their findings pose a challenge to the idea that competition in schools can necessarily pose a conflict with a communally-oriented and cooperative cultural orientation.

When Classroom Competition Leads to Positive Outcomes

Alexakos, Jones and Rodriguez's study shows that in the context of a classroom where there are fictive kinship relationships, rather than leading to interactions that are perceived as "boastful," competition can actually build community. They describe:

The competition that took place between friends was good-natured, beneficial, constructive and cooperative... they supported each other by helping one another verbally and by going up to the board together. Students brought their individual strengths to each friendship group and to each problem. Friends across groups encouraged each other when they went to the board to solve physics problems. While they teased and jibed each other, they were emotionally and academically supportive of each other.

In this section I explore the factors that may lead to a competition that promotes community and learning. I discuss the question: Why was competition in Alexakos, Jones and

Rodriguez's classroom significantly different from the types of competition which can rank-order students, conflict with cultural orientations towards communalism, and discourage the achievement of students from non-dominant groups?

In examining Alexakos, Jones and Rodriguez's description of their study, it seems that the type of competition they describe differs from an individualistic type of competition in several ways. One issue was that the competition was conducted in teams (Dream Team and Team NV). This type of competition is somewhat different in quality from the type of competition for places in a rank order of "smartness" that Cohen (2000) describes.

However, team competition does not seem to be a substantial enough factor to have led to such positive results for learning and group membership as this classroom experienced. Team competition could still involve comparison relative to standardized tasks, with the comparison being between groups rather than between individuals. In addition, team situations can lead to exclusion and lack of solidarity, such as when individual members receive insults from their teammates for being lower on a skills hierarchy and thereby affecting team performance. If this occurs, team competition could be even more discouraging than individual competition.

Rather than the types of insults that lead to students' sense of exclusion from the community, Alexakos, Jones and Rodriguez describe good-natured "jibing" in the context of many positive interactions. The authors also describe how those with more skill in science and/or math assisted and provided resources for their peers, which suggests a community of practice type of environment (Lave and Wenger 1991) rather than a rank-order. In this next section, I explore how an analogy between sibling competition and competition within fictive kinship relationships could help illuminate why the classroom competition in Alexakos, Jones and Rodriguez's study had positive rather than negative results.

Analogy with Sibling Competition

One of the students describes his relationship with a classmate as not just being “like brothers,” but actually being brothers. “Ned and I are brothers. Few friendships reach that level, but we did.” By calling each other “brother,” these students continually affirm how their relationship is of a different quality from just being classmates or friends; it is more like siblings. One possible area of research that might be helpful in exploring why the competition in this classroom ended up being community-building rather than alienating is the psychology of sibling relationships.

I recognize that the analogy between sibling relationships and fictive kinship relationships has some very significant limitations. No matter how strong the fictive kinship relationships are, there is not that same type of family, history and co-development that sibling’s experience. However, there has been considerable exploration into what constitutes “healthy competition” between siblings, yet there has not been much research into how competition between students could foster collaboration and learning. I view this initial foray into the connection between competition in fictive kinship relationships and the psychology of sibling competition as having the potential to provide insights into Alexakos, Jones and Rodriguez’s results, to generate implications for teacher practice, and to suggest avenues for future research. It is one route towards exploring the issue, “how can classrooms facilitate relationships that will allow competition to support learning rather than discourage it?”

Alexander Leung and Lane Robson (1991) describe, “When handled properly, healthy competition among siblings will lead to the acquisition of social, interpersonal and cognitive skills that are important to the development of the child.” (p. 707) While classmates are not

siblings, it is still possible to imagine a “healthy classroom competition” which would promote student learning and a sense of community. In contrast, an “unhealthy classroom competition” would lead to rank-ordering, the privileging of some students’ cultural capital over others, and experiences of exclusion. For the purposes of this paper, I am going to use the term “healthy classroom competition” to refer to competition in which: (1) students are not being hierarchized; (2) students are encouraged to learn rather than discouraged from participating; (3) students do not encounter negative stereotype threat; and (4) the competition is compatible with a disposition towards communalism. These four attributes seem to describe the competition in Alexakos, Jones and Rodriguez’s classroom.

Stephen Bank and Michael Kahn (1997) describe eight sibling identification processes. The identification process that they recommend as most ideal is called, “Constructive dialectic—Dynamic, independent relationships.” (p. 99) They describe how in this particular type of sibling relationship, a sense of difference is accompanied by affinity and respect. The siblings contrast themselves with the other, and serve as reference points. They describe: “There is a feeling of electricity and balanced quality... while neither sibling is this type of dialectical framework wants to feel inferior, neither particularly wants to get the permanent upper hand. At the core there is too much caring and respect to permit any one-sidedness.” (p. 99).

In many ways this “constructive dialectic” corresponds with how two teams in Alexakos, Jones and Rodriguez’s classroom were in constant competition, yet neither aimed to completely dominate the other. Instead the teams were reference points for each other, in that one team’s high performance encouraged the others. They write: “Friendly competition was one such tool they used to motivate themselves to not only solve the physics problems, but to solve them faster than the other groups. Ned and Victor often tried to spur this sense of competition as

did Jayson's group; but theirs was friendly competition, which often led to humorous exchanges, "trash talking," and laughter." Domination was not the goal of the interactions. Rather, Alexakos, Jones and Rodriguez describe how students aimed to prolong the competition. Based on their data, it seems like the competition became a focus for successful interaction rituals (IRs) characterized by mutual focus, synchrony of vocalizations and body language, and entrainment (Collins 2004). As Collins describes, successful interaction rituals result in a sense of solidarity and group membership. Rather than a hierarchizing competition, the competition itself served as a mutual focus for recurring IRs that promoted bonding and a sense of identity associated with science learning.

In this type of competition, rather than the comments being perceived as boastful and leading to views of insiders versus outsiders, they contributed to solidarity-building interaction rituals where all students involved in the competition were full members. The competition, as in healthy sibling competition, served as an incentive for the students to perform at higher levels. Stephen Bank and Michael Kahn (1997) also describe how facework is an important aspect of healthy competition between siblings within the constructive dialectic identification process: "The ongoing displays of competition must always permit an honorable channel for face saving, should there be a loser." (p. 99) The role of facework in interactions emerges from the work of Erving Goffman (1967), who describes how in social settings, people will work to preserve a positive image for everyone in order to maintain the rhythms of interaction. When people misstep such as by making a statement that does not make much sense, others will tend to cover up or ignore these mistakes. As Collins (2004) describes, these rhythms are vital to entrainment and solidarity. When face-saving does not occur in an interaction, is it very noticeable and leads to shame on the part of the individual whose face is not preserved (Goffman 1967).

In classroom competition, there are many opportunities for students to lose face, such as through criticism or ridicule for answers (Olitsky 2007a). However, Alexakos, Jones and Rodriguez describe how although students “scoffed” at each other, their faces were preserved at the same time. They write, “While they teased and jibed each other, they were emotionally and academically supportive of each other.” It is likely that because the scoffing was reciprocal and served to prolong the interaction ritual rather than to prove superiority, it did not cause members of the fictive kinship groups to lose face. Further, competition in Alexakos, Jones and Rodriguez’s study took place in the context of mutual respect that had been built up over time. They describe how the team members respected each other’s abilities and strengths and learned from them. They describe: “No one person in the group was the best student because we all brought our individual strengths to the group and made them group strengths.” Rather than using strengths to beat others in a rank-order, the strengths engendered respect and were used to enhance group performance. Similarly, Bank and Kahn (1997) describe the respect for each other’s strengths that characterizes the “constructive dialectic” sibling relationship.

Overall, for students who were participating in these teams, the competition promoted solidarity. Alexakos, Jones and Rodriguez write, “The competition between the Dream Team, and Team NV strengthened the already developing bonds between the members of this fictive kinship group. ‘The more we tried to beat Team NV, the better we worked together.’” Rather than hierarchizing and fragmenting students, the competition reinforced the fictive kinship groups and was therefore compatible with a communal cultural orientation.

A relevant issue for teachers is how to respond when scoffing occurs in the context of classroom competition. While at times it may be discouraging student achievement, at other times it might be promoting achievement. One question teachers could ask themselves is does

scoffing promote solidarity between participants, or interfere with it? In Alexakos, Jones and Rodriguez's study, the scoffing seemed to be an essential part of a solidarity-building interaction ritual centered on competition. However, it seems like it would be difficult for a teacher to be able to tell just by observation. Student interpretation is required, which makes the student researcher role essential.

Based on this discussion of psychological research on sibling competition, social interactional frameworks, and Alexakos, Jones and Rodriguez's study, the following seem to be important factors that could contribute to a "healthy classroom competition" that supports learning and is compatible with communalism.

1. Students are not seeking a permanent state of winning. They have an interest in keeping the competition going.
2. Students diverse strengths are recognized, appreciated, and utilized.
3. There is a perceived equality between participants.
4. Students preserve each other's face rather than deriding each other's claim to science identity.
5. Any jibes or scoffing contributes to solidarity-building interaction rituals, and prolongs the rhythms of interaction rather than breaking them.
6. Competition takes place in the context of friendship ties that are kin-like, with mutual trust and support.

Role Models

Another strong point of Alexakos, Jones and Rodriguez's study is their discussion of the relationship between fictive kinship groups, role models and mentoring. Some studies indicate

that students are more likely to enter a profession when they are able to identify a role model in that occupation (Lent, Brown, and Hackett 1994). Studies have also shown that the presence or absence of role models of matching race and gender provide children with ideas on what is possible for them (e.g., Sumrall 1995). In Alexakos, Jones and Rodriguez's paper, the authors elaborate on the importance of positive role models for youth in order to support their academic achievement and increase resiliency. They also discuss how the students from Kings and Sky did not have much access to adults of color who are working in science-related careers. However, students in the class who were part of fictive kinship groups still persisted through difficulties with the subject matter. They argue that rather than requiring adult role models to promote resiliency, students were able to serve as role models for each other. They write, "In the classroom and out the performance and success of each within the core fictive kinship group became the role model for the others."

Adding to their discussion of the importance of students serving as role models for each other, the authors make an interesting claim: That not only did the individuals become role models for each other, but that the individuals became the role model and mentors for the group, and the group became a role model and mentor for the individual members. They conceptualize "a dialectical feedback loop where the individuals become the role models and mentors for the others within the fictive kinship groups, in their actions for themselves and for the group, as the group as a collective becomes the role model and mentor for the individuals in it."

This alternative conception of role models is helpful in that it prioritizes the impact of the group in promoting peer support and mentoring. However, I would argue that broadening the conception of role model to encompass groups is not necessary in order to understand the importance of the collective in the events that transpired in this study. Although individual

students served as role models and mentors for other members of the group, and the fictive kinship group (the collective) supported these relationships, the collective does not necessarily need to be conceived as a role model or mentor directly. I believe that the findings of this study regarding mentors and role models can be sufficiently explained through one of the theoretical frameworks that the authors employ: Collins' (2004) discussion of interaction ritual.

The authors cite Collins (2004), who describes how during successful IRs, the symbols that are both exchanged and created become invested with emotional energy, and can be used later to generate successful IRs with others who find these symbols similarly charged.

Collins described how over the course of time a series of successful IRs that result in positive emotions for participants accumulate into "interaction ritual chains." These chains form the basis of people's feelings of membership in particular groups and interests in particular ideas. Collins described the relevance of not only high-visibility symbols, but also "cognitions." Knowledge, such as science-related concepts, is associated with groups and can become invested with emotional energy through solidarity-producing IRs. This positive emotional charging provides an incentive to seek cultural capital because it will lead to future successful IRs with that particular group. In this model of social interaction, it is understandable why the students in Alexakos' class were seeking science-related knowledge and skills from each other and from other sources as they participated in the physics class. The energizing, solidarity-building experiences previously generated through their fictive kinship relationships fed into successful classroom IRs that took place during collective problem solving and class competition. These IRs in turn encouraged students to seek out more science knowledge, since the students had a drive to acquire the cultural capital that would enable them to participate in future successful IRs in the classroom. As they sought new knowledge, they drew on each other as resources for

mentoring and for role models.

Differences in students' science knowledge and skills did not lead to a rank-order competition in which students wanted to outdo each other, but instead led to a friendly competition in which students wanted to be like each other. Students were therefore willing to serve as mentors for each other; one student could admire another's skills at applying math to problem solving, whereas that second student may admire the first students' knowledge of physics books. They would then share knowledge with each other, thereby helping all participants acquire the cultural capital that could feed future IRs. Because there was considerable trust, the competition within the fictive kinship group could facilitate this mutual admiration, mentoring and role model relationships among the individuals.

Alexakos, Jones and Rodriguez describe, "Individual performance and drive became the role model for the collective and vice versa. This in turn helped to further strengthen their friendship bonds, creating spaces where emotional bonds and friendly, cooperative competition had a mutual and cascading effect on each other." This finding can also be construed as the mutually enforcing relationship between entrainment during science-related interactions, positive emotions, solidarity, and group membership. Individual performance, drive, and reciprocal mentoring were spurred by the desire for successful IRs within the group.

Therefore, the fictive kinship group does not have to be conceptualized as providing mentoring or being a role model. Rather, the fictive kinship collective was the membership group that became associated with science-related, entrainment-producing interaction rituals. Experiences of solidarity generated students' interest in acquiring science-related symbols from each other, and providing them to each other, in order to generate future IRs with this group. Hence, reciprocal-mentoring relationships developed between the students.

Students Outside the Kinship Groups

Alexakos, Jones and Rodriguez's research demonstrates the possibility for students to feel energized and efficacious in their science learning through their participation in fictive kinship groups, even if they do not frequently interact with adult role models in science-related careers. However, even if fictive kinship groups can mitigate some of the effects of lack of access to adult role models in science, there will still be differential outcomes between students who are members of such groups and students who are not. How can students who are not members of fictive kinship groups be supported in their learning? It seems that those students are in an especially vulnerable place. They may not have access to adult role models in science, yet they do not have a supportive group of peers either. Further, they may feel a stronger sense of alienation than students in classes where there are no noticeable fictive kinship groups, since being in the presence of solidarity-producing interaction rituals, yet not being entrained in them, leads to negative emotions (Collins 2004).

Alexakos, Jones and Rodriguez describe how one particularly problematic aspect of a lack of connection to a fictive kinship group was a decrease in students' persistence through academic struggle. They compare the experience of students within groups to those who were alone: "the core kinship group proved strong enough to overcome their stress and feelings of inadequacy and defeat and endure through the process....Students outside of these kinship groups on the other hand often ended up having blank papers when some attempts could and should have been made."

The authors pose some possibilities for helping students who are not part of such groups, including encouraging the formation of new fictive kinship groups. However, as the authors'

study shows, attempts to orchestrate such groups can backfire. For example, the authors describe how the teacher attempted to develop fictive kinship groups for the Kings students, who did not arrive to the class with such groups in place. They explained how the teacher placed a Sky student who had an “independent, friendly, easy manner” with some of the Kings students in the hopes of forming a new group. However, this group did not become close. Instead, it just served to separate that Sky student from his friends. In the end, the authors deemed the outcome as unjust, since the Sky student was deprived of the support he had been receiving from his friends.

As another example of an attempt to promote fictive kinship relationships, the authors describe, “One unsuccessful effort at creating a successful group was an attempt to integrate Reed, a junior from Sky, with a group of seniors from his school. . . In one to one conversations with the instructor after class, he would report how much he disliked working with his group peers, even though to the instructor it seemed the group was trying to work with him. When students in his group explained concepts to him, he felt he was being talked at, so he physically would not participate after the first few tries.” This incident can be interpreted using the work of Collins (2004), who describes how a successful IR in situations of somewhat equal power can result in collective effervescence for participants and in the solidifying of a group. However, some IRs are better characterized as “order-giving” rituals, and may result in a gain in emotional energy (EE) for the order giver and a loss for the order taker, without actually increasing feelings of group membership.

It seems that the science explanations from peers may have been particularly alienating for Reed since they were not connected to a chain of prior solidarity-producing IRs with that group. Rather than leading to entrainment and solidarity, having peers instruct him may have felt

more like an order-giving ritual. In addition, perhaps Reed did not feel his face was being preserved. These incidents indicate that it is quite difficult for a teacher to apply knowledge of the importance of fictive kinship groups by directly orchestrating groups.

The authors suggest that students who were not part of these groups had an increased dependence on the teacher: “A review of the video recordings of the class showed the least successful students spending the most time working with the instructor during problem solving and homework review time, and being more dependent on him for hints and help on how to solve physics problems. Meanwhile, students working in their fictive kinship groupings spent more of their time working the problems out amongst themselves, with the instructor assuming more of a peripheral role.” Their results point to the importance for teachers to be able to develop solidarity with their students. For students who are not part of fictive kinship groups, successful IRs that leads to a sense of solidarity with the teacher may be essential.

Solidarity can be Fostered yet not Forced

One of the goals of this forum paper was to draw on Alexakos, Jones and Rodriguez’s study in order to explore conditions that would allow classroom competition to contribute to learning and strengthening of social ties rather than to disengagement and exclusion. The results of their study do not negate that competition and rank-order relative to standardized tasks can perpetuate educational inequalities, particularly in the context of negative stereotype threat. However, their results suggest that in the context of fictive kinship relationships, competition can lead to learning, collaboration and a sense of membership in a science-centered community. Their study has some practical implications for teachers who want to support healthy classroom competition. Possible approaches include modeling the recognition of diverse strengths,

nurturing fictive kinship groups that already exist in the classroom, and facilitating solidarity-building interaction rituals focused on science.

In addition, this study shows that IRs centered on classroom competition can be a factor in fostering reciprocal mentoring, which can encourage academic persistence among students who may not have much access to adult role models in science-related careers. In this study, successful IRs focused on friendly competition related to solving science problems gave students the incentive to seek the knowledge from each other that would enable them to participate in future IRs.

However, the process by which teachers have an impact on whole-class IRs is complex and indirect; IRs cannot be forced, they can only be enabled (Collins 2004). What teachers can control is establishing the conditions that allow for IR development, which include science-related mutual foci, a division of labor between teacher and students that allows for peripheral participation of all students, the development of participants' beliefs that their contributions "count" as knowledge, the ability for students to see and hear each other, and tasks that have sufficient challenge and time for entrainment to develop (Olitsky 2007b). In this study, interaction rituals related to team competition seemed to meet all these criteria.

Fictive kinship relationships cannot be forced either. As this study shows, teachers' efforts to create close friendships between students can backfire. In addition, interactions are subtle and it is likely that a teacher might have difficulty distinguishing between the types of jibes that are hurtful and discourage group membership, and those that are reciprocal and solidarity-producing. In her forum piece, Julie A. Bianchini (2011) discusses the importance of listening to students. Listening to students can also help teachers in the uncertain endeavor of fostering fictive kinship relationships. For example, students' insights are crucial in helping

teachers interpret whether a particular competition-related event leads to solidarity or not, or whether a particular incident of scoffing contributes to a sense of group membership or interferes with it. Without listening to students' perspectives, it would be too easy for a teacher to misinterpret classroom events, and therefore act in ways that interfere with solidarity rather than promote it.

Overall, this study shows that within fictive kinship relationships characterized by mutual trust, preservation of face, and solidarity-building interaction rituals, competition can support collaboration between students and a sense of group membership. Competition therefore is not necessarily tied to individualism, and can be compatible with cultural orientations towards communalism.

References

- Bank, S. P., & Kahn, M. D. (1997). *The sibling bond*. New York: Harper Collins.
- Bianchini, J. A. (2011). How to foster student–student learning of science? The student, the teacher and the subject matter. *Cultural Studies of Science Education*, doi:10.1007/s11422-011-9317-7.
- Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). New York: Greenwood Press.
- Boykin, A. W. (1986). The triple quandary and the schooling of Afro-American children. In U. Neisser (Ed.), *The school achievement of minority children: New perspectives* (pp. 57–92). Hillsdale, NJ: Erlbaum.
- Cohen, E. G. (2000). Equitable classrooms in a changing society. In M. Hallinan (Ed.), *Handbook of the sociology of education* (pp. 265–283). New York: Kluwer Academic/Plenum Publications.
- Collins, R. (2004). *Interaction ritual chains*. Princeton, NJ: Princeton University Press.
- Goffman, E. (1967). *Interaction ritual*. New York: Random House.
- Johnson, D. W., & Johnson, R. (1974). Instructional goal structure: Cooperative, competitive, or individualistic. *Review of Educational Research*, 44, 213–240.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.
- Lemke, J. L. (1990). *Talking science: Language, learning and values*. New Jersey: Norwood.
- Lent, R., Brown, S., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, 45, 79–122.
- Leung, A. K., & Robson, W. L. (1991). Sibling rivalry. *Clinical Pediatrics*, 30, 314–317.
- Olitsky, S. (2007a). Facilitating identity formation, group membership, and learning in science classrooms: What can be learned from out of field teaching in an urban school? *Science Education*, 91, 201–221.
- Olitsky, S. (2007b). Promoting student engagement in science: Interaction rituals and the pursuit of a community of practice. *Journal of Research in Science Teaching*, 44, 33–56.
- Olitsky, S., Loman, L., Gardner, J., & Billups, M. (2010). Coherence, contradiction and the

development of school science identities. *Journal of Research in Science Teaching*, 47, 1209–1228.

Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, 52, 613–629.

Sumrall, W. J. (1995). Reasons for perceived images of scientists by race and gender of students in grades 1–7. *School Science and Mathematics*, 95, 83–90.

Tobin, K., Seiler, G., & Walls, E. (1999). Reproduction of social class in the teaching and learning of science in urban high schools. *Research in Science Education*, 29, 171–187.

Tyler, K. M., Boykin, A. W., Miller, O. A., & Hurley, E. A. (2006). Cultural values in the home and school experiences of low-income African American students. *Social Psychology of Education*, 9, 363–380.