

Revisiting Robert Axelrod: Cooperation, School Management and Teacher Unions

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Abstract. The militancy of teacher unions is frequently associated with the disruption in schools where unions are antagonistic to management. The objective of this qualitative study was to examine the impact of cooperation between teacher unions and school management. Using Axelrod's theory of the *Evolution of Cooperation*, the instrument explored whether school principals can forge successful cooperation between school managers and union site committees. Several studies are showing that cooperation among staff is critical for learner achievement and collegiality. Furthermore, cooperation enables the school's role-players to work towards a shared vision. The conclusions point out that school managers should consciously engender cooperation to run successful schools where teachers would not betray one another. A methodical cooperation plan could be the missing tool required to turn unsuccessful schools around to become successful.

Keywords: cooperation; school effectiveness; school management; teacher professionalism; teacher unionism

1. Introduction and background

The cooperation of all education role-players in society is critical in enhancing school effectiveness. Mafisa (2017) contends that teacher unions ought to work in partnership with the Department of Basic Education (DBE) if teachers are to improve the quality of education in schools. Yet, paradoxically, there are sometimes adversarial relationships between teacher unions and the DBE (Heystek & Lethoko, 2001; Whittle, 2007; Amoako, 2014; Msila, 2014). These antagonistic relationships are compounded by the concepts of professionalism and unionism, and frequently this tends to be the cause of disagreement among teachers. Heystek and Lethoko (2001) point out that unionism was incorporated in education with characteristics such as industrial action and collective bargaining. Unionism is frequently perceived, however, as the creator of problems for the professional development of teachers (Eberts, 2007; Msila, 2014; Sibiyi, 2017; Baron, 2018). In an attempt to professionalize teaching, several role-players have called for the reduction of unionism among teachers in South Africa (Heystek and Lethabo, 2001; Eberts, 2007). Teacher unionism is blamed for the

absence of cooperation among role-players in education, including between union members and school managers (Seekings, 2004; Smith, 2013). Weingarten (2012) underscores the need for strong teacher unions, claiming that successful educational changes will be those supported by strong unions, rather than those that keep the union role weak. Heystek and Lethoko (2001: 224) explored the ways in which teacher unions can forge cooperation through the combination of professionalism and unionism. They aver:

A development towards professional unionism may be a possible solution in this situation. Professional unionism is when teachers and management work together; it is no longer "they versus us", but "we". Joint committees, peer review, training and development, and changes in bargaining are characteristics of this professional unionism.

Literature points out that for teacher professionalization to occur unions, such as the South African Democratic Teachers Union (SADTU), need to collaborate with government and other education stakeholders (JET, 2017). The South African Democratic Teachers Union is frequently criticized for the decline in quality and standards in South Africa's basic education (Masondo, 2016). In 2017, however, it was reported that SADTU sought to produce leader teachers who could steer transformation for quality in schools. This initiative from SADTU was to collaborate with the National Education Collaboration Trust (Education Dialogue South Africa, 2013), where schools in the Butterworth and Sekhukhune regions were to combine in their attempts to create the lead teachers who would champion teacher professionalism (Educational International (EI), 2017).

This article explores the complexities of cooperation and collaboration among teacher unions, school managers and teachers in South Africa. When one traces the existence of cooperation and the objectives thereof between teacher unions and school managers, one has to understand the historical underpinnings. Mafisa (2017) states that there are three main teacher unions and these are the South African Democratic Teachers Union (SADTU), the South African Teachers Union (SATU), and the National Professional Teachers Organization of South Africa (NAPTOSA). There are others such as the Professional Educators' Union (PEU) and the National Teachers Union (NATU). Political ideology and how they view teacher professionalism distinguish these teacher unions. SATU and NAPTOSA associate themselves with teacher professionalism and are generally opposed to industrial strikes. On the contrary, SADTU is associated with teacher strikes and, in most cases, shows disregard for the performance of the learners. Heystek and Lethoko (2001), as well as Amoako (2014), argue that for SADTU, that openly identifies itself with the ruling ANC, its history, like that of the ANC, points to its liberation struggle credentials in fighting the apartheid system for social justice in education. When SADTU was established, principals were excluded because union members perceived them as apartheid government collaborators (Mafisa, 2017). Under the apartheid government, teacher unions reflected the dynamics of a divided society such as race and political ideology. Of all these unions, SADTU appears to be the one whose name has been tarnished by media and society (Harper, 2015; Sibiya, 2017). Yet, it needs to be highlighted that SADTU played a critical role in the mid-1990s when the new post-apartheid curriculum was formulated. With unions such as NAPTOSA, SADTU helped shape education

policy; however, unlike NAPTOSA, SADTU continued to be unionist rather than professional in its approach (Govender, 2013; Sibiya, 2017).

In investigating the dynamics of cooperation in schools, this study sought to answer the following research questions:

- What is the impact of meaningful cooperation between teacher unions and school managers?
- What role can school principals play in engendering successful cooperation between teacher unions and school managers and teachers?

2. Teacher unions' position in South Africa

The theoretical framework elucidated in this section provided the foundation for conducting this study. The rationale for investigating the research problem highlighted above, was to find a solution for the complexities of cooperation among teacher unions, school managers and teachers in South Africa. School managers need sufficient and appropriate knowledge and skills to enhance organizational cooperation. Effective principals require models that support cooperation to enhance shared leadership and collegiality. Today school management needs to be professionalized, hence learning about aspects such as conflict management and cooperation is essential and should be undertaken positively. School principals should realize that for cooperation to succeed, the other parties must see that the principal is favourably inclined towards them. Organizations have become unstable, and promoting competition only increases the severity of the context. "The success of the organization of today and citizen happiness of tomorrow will depend on its capacity to develop, enhance and maintain a cooperative culture as a strategic choice in managing the environment with its definition" (Soliman & Antheaume, 2016: 16).

Soliman and Antheaume (2016) also opine that sometimes on the surface people may pretend to be cooperative, whilst they are intent on competing and winning. Furthermore, these authors point out that this is a distorted version of cooperation for it carries more competition and this combination is referred to as *coopetition*. In today's schools one cannot think of line managers in schools without thinking about the powerful position of teacher unions. Over the years, school principals have found themselves occupying vulnerable positions when there have been disputes between themselves and their teachers (Mahomed, 2014). Additionally, Mahomed adds that school principals frequently face active and militant teacher unions hence a constant need to appease teacher unions' demands. Some authors attribute this to the past. Under apartheid education, there was no democracy or involvement of teachers in making school decisions. To some teachers, the role of school principals as government agents or collaborators has never ended. Heystek and Lethoko (2001) point out that in the struggle against the apartheid government and its education system, black principals were perceived as collaborators of the illegitimate system, hence they were not acceptable to more militant unions such as SADTU. Researchers alluded to the militant stance of SADTU, whilst understanding the role that SADTU played throughout the history of education in South Africa (Seekings, 2004; Whittle, 2007; Amoako, 2014; Sibiya, 2017). Arguably, history is to blame for the suspicion and mistrust between union members and some principals.

Now, new debates have surfaced, showing how unions have taken over this traditional role of principals, as people now argue that unions are the bullies in schools (Mahlangu, 2013; Sibiyi, 2017). Ramokgotswa's (2015) and Khumalo's (2021) findings indicate how unions tend to bully other members, including the principal, in the selection of teachers for appointments. Research shows that crises in schools, especially in historically black schools in the townships, are blamed upon SADTU (Liwane, 2017; Sibiyi, 2017; Khumalo, 2021). Furthermore, this union has been criticized for handpicking their members for management positions. As a result, many teacher union members tend to be more loyal to their union than to the improvement of education, because they know that their unions are more likely to reward them (Patillo, 2012; Sibiyi, 2017; Liwane, 2017; Khumalo, 2021). Even strong school managers need the support of the other role-players for school success or effectiveness. Among these role-players are teacher unions, but usually confusion exists as to what school managers can do to work with unions whilst ensuring diligence and commitment from teachers. The school managers' endeavours to instil cooperation with teacher unions are affected by external pressures as well.

Successful schools are schools that have a vision, and teachers who follow a vision are those who work together as they try to realize learner achievement. However, Wills (2016) argues that teacher strikes have adverse effects on learner achievement. In addition, according to Wills, "the most marginalized students in rural areas, and those that are weaker academically are most at risk of learning losses as a result of teacher strikes" (2006: iv). Furthermore, Wills perceives the strikes as widening existing inequalities in learner achievement. Teacher strikes have negative consequences for cooperation, because strikes heighten conflicts between school managers and their teachers. Yet, the existence of teacher unions is crucial, because they serve a critical purpose for teachers as employees. Some of the concepts that are critical in this study are cooperation, vision, school effectiveness and success. However, what is critical now is to explicate Robert Axelrod's theory which forms the basis of this study.

3. Robert Axelrod's Evolution of Cooperation

Euchner (2018) argues that long-term interactions with other groups can persuade even antagonists to develop trust for each other. Furthermore, Euchner cites Robert Axelrod's theory (1984) of the *Prisoner's Dilemma* that stipulates that people usually respond to other people's actions with a "tit-for-tat" strategy, for people tend to reciprocate others' behaviour. Negative gestures will elicit negative responses, while goodwill draws goodwill. "The more people interact with each other, the greater the chances of cooperation. If people know that they must deal with friends and adversaries in future, they will behave more cooperatively" (Euchner, 2018: 100). Euchner also mentions a number of factors that help build an organization and productive cooperation. These include maintaining membership, managing factions, communication and leadership.

Maintaining membership - Leaders need to engage followers at all times. It is critical to keep members involved and happy to realize goals and strategy.

Managing factions - Differences in any organization are necessary because they reflect the institution's diversity and potential creativity. Effective leadership should expose the differences and find common ground, as this is vital to make rifts constructive.

Communication - Without effective communication there can be no coordination in the organization and members will drift away from one another.

Leadership - Leadership is at the centre of coordinating group action and it creates the necessary tension that challenges people to change their attitudes and behaviour. Euchner (2018) cites MacGregor Burns's phrase that good leadership is "dissonant". He explains that change requires an experience of cognitive dissonance, "a disorienting and sometimes painful realisation that one's understanding of the world does not fit with the reality of the world" (Euchner, 2018:135).

Makgetla and Shapiro (2016) point out that Axelrod's conditions that can promote cooperation were not present in apartheid South Africa. These authors explain that Axelrod's computer game suggested that the major strategy is Tit-for-Tat (TFT); cooperating for the first round and then imitating the other side. After 1960 in South Africa mutual defection was the order of the day and TFT reinforced it (Makgetla & Shapiro, 2016:7). In many organizations, including schools, there is this antagonistic relationship between school managers and teacher unions in particular. The principal occupied an unenviable position where he/she was seen as representing the illegitimate government (Christie, 1988). These feuds were always protracted, as Axelrod (1984:138) puts it, "once a feud gets started, it can continue indefinitely". Yet, cooperation in Axelrod's theory means that actors will be better off individually and collectively if they rationally decide to cooperate with each other (Sarakinsky, 2000). Although the actors are aware of their mutual interdependence, they do not necessarily like each other. The focus below is on the actual game in Axelrod's theory, the prisoner's dilemma and the dynamics of cooperation.

3.1. Prisoner's Dilemma

Robert Axelrod (1984) introduced the *Prisoners' Dilemma*, a game used to analyse why two normal people may not cooperate even when it is clear that they need to. The game is summarized as follows:

Two criminals, A and B, from the same gang are arrested and taken to prison. These two are then separated into different cells and they cannot communicate. The prosecutors do not have adequate evidence to imprison the two men. Both hope to get one-year imprisonment on a lesser charge. The prosecutors bargain with each of the two prisoners – each prisoner can betray the other, either by testifying that the other committed the criminal act or by cooperating with the other by remaining silent. The game means:

- If A and B each betray the other, each of them will serve 2 years in prison.
- If A betrays B and B remains silent, A will be freed and B will serve three years in prison;
- If B betrays A and A remains silent, B will be freed and A will serve three years in prison;

- If A and B both remain silent, both of them will serve only one year in prison.

Therefore, the players have two choices - either to cooperate or to defect. Each of these players chooses what to decide without knowing what the other's choice is.

Tung (n.d.) summarizes this:

If both players cooperate, they are awarded 3 points each. If they both defect, they are awarded 1 point each. There is a reward for mutual defection. When one player chooses to cooperate and the other chooses to defect then the one who has cooperated receives 0 points and the one who has defected receives five. The temptation to defect gives 5 points while the 0 points are called the sucker's payoff. If you think the opponent is going to defect then you must defect or you will receive 0 points. Therefore, no matter what the other does, it pays for you to defect. The other player is also in the same situation meaning you should both defect, but if you do, then both of you get 1 point, which is less than the 3 points you would get by cooperating.

Through this game theory of the evolution of cooperation, Robert Axelrod (1984) developed a theory to uncover what really is necessary for cooperation to evolve in an organization. Nowak (2013) claims that cooperation is necessary for evolution to build new levels of an organization. He points out that cooperation denotes that those who are selfish relinquish some of their reproductive potential to be of assistance to one another; yet competition occurs and it tends to oppose cooperation unless there is an emergence of a specific mechanism.

4. Research Methods

This qualitative study, like all qualitative studies, focused on the richness of the data and understanding the practice of school managers pertaining to teachers' unions and cooperation. As a researcher, I was more interested in securing a sample of information-rich participants. The eight principals selected displayed certain characteristics in which I was interested. In the eight secondary schools teacher unions were present, although in some less pertinent than in others. Purposeful sampling was employed; this refers to sampling that is not so much concerned with random sampling, but rather with providing participants who will be information-rich (Struwig & Stead, 2004). Brink (2000) points out that the advantage of purposive sampling is that it allows the researcher to handpick the sample based on their knowledge of the topic under study. Purposeful sampling assists in gathering relevant data. Several strategies can be applied, namely extreme case sampling, intensity sampling and maximum variation sampling. The type of purposeful sampling strategy used in this study was maximum variation sampling. Benoot *et al.* (2016) define this as a maximum variation constructed by identifying key dimensions of variations and then finding cases that vary from each other as much as possible.

The sample was diverse in terms of socio-economic status of the schools, race of participants, and the intensity of union activity in each of the schools. A highly diverse sample was selected with the purpose of discovering vital experiences among the participants (*cf.* Struwig & Stead, 2004). In this study, I sought to

sample school managers from various schools to determine their shared perspectives about cooperation and trade unions.

In each of the eight schools, the principal was interviewed, as well as two teachers from the same school. Apart from individual interviews, focus group interviews were conducted with six participants each. Therefore, in addition to the school principal, one union representative and one teacher from the school management team (SMT) were sampled from each school. The SMT members in the sample comprised six heads of department and two deputy principals from the eight schools. Table 1 below shows the characteristics of the 24 sampled participants from the eight schools.

Table 1: Characteristics of the sampled participants

School	Participants	Gender & Race
1	P1	Male/Black (MB)
	P1a	MB
	P1u	Female/Black (FB)
2	P2	FB
	P2a	MB
	P2u	MB
3	P3	FB
	P3a	MB
	P3u	MB
4	P4	MB
	P4a	Male/Coloured (MC)
	P4u	MB
5	P5	MC
	P5a	Female/Coloured (FC)
	P5u	MC
6	P6	MC
	P6a	FC
	P6u	FC
7	P7	Female/White (FW)
	P7a	Male/White (MW)
	P7u	MW
8	P8	MW
	P8a	MW
	P8u	MW

P1-P8 – 8 school principals from each school

P1a – P8a – 8 school management team members from each of the schools

P1u – P8u – 8 union members based at each school

Documentary analysis was conducted to examine a number of aspects linked to cooperation and teacher collaboration. Documents that were examined were minutes of meetings, especially those between union site committees and school management, teacher journals, learner results, and teacher portfolios. The paradigm employed in the study was interpretivism. Rosman and Rallis (2003) define a paradigm as a shared understanding of reality. In this study, the researcher obtained the understanding of the phenomenon of unionism from individual teachers. I used the emic view, which explicates the views of the people

from the community or individual teachers. After collection, the data were transcribed and manually coded into some overarching themes. I used content analysis to draw the data from the study, and I also used O'Leary's (2017) guide, that contains six steps for qualitative data analysis and, of these, the researcher employed the reduction and coding of the data into themes, which involved building categories. A search for commonalities and divergences in the eight schools from which the participants came was conducted before building the themes. Then, before drawing conclusions, the researcher built and verified theories mainly exploring the evolution of cooperation themes.

5. Findings

The instrument used for collecting data for the study was based on Axelrod's *Evolution of Cooperation* theory (1984). Using the game theory and the thought experiment called the Prisoner's Dilemma, the instrument sought to eventually develop a theory that could be utilized in schools to reveal what can be done for cooperation to emerge between school managers and teacher unions. As was evident from the participants, cooperation is critical in effective schools. When school managers and unions do not cooperate with each other (that is, betray each other), they are unlikely to achieve effectiveness and well-run schools. When unions and school managers are driven by selfish interests, they are hurting themselves and the school's progress will be impacted badly by this 'defection'. It would be better to protect one another rather than to act in irrational self-interest. The instrument also was used to determine whether there were instances of what Axelrod and Hamilton (1981) refer to as 'collective stability'. The findings are explicated under four subtopics below: Cooperation, the missing link? When union and managers cooperate; Professionalism, activism and school progress, as well as Document analysis.

5.1 Cooperation, the missing link?

The participants' responses demonstrated that when teacher unions work with school management towards the same goals there is bound to be progress. In fact, the eight principals and the rest of the participants stated that optimism reigned when unions worked closely with school management teams. Furthermore, the participants pointed out that cooperation in managing schools goes beyond the schools themselves. School managers need cooperation from district officials, parents, non-governmental organizations, businesses, religious groups and parents. In schools, teacher union site committees exist, and in four of the schools in this research there were up to three teacher unions. All eight union representatives pointed out that teacher unions will always be necessary to collaborate with management to boost the schools' progress. Two principals, P1 and P6 mentioned that "strong, progressive teacher unions" would increase teacher commitment. P2 summed up what she believed in stating:

I always wish that we had strong unions that would empower our teachers with skills. We need learners who will lead in future but we cannot achieve the necessary support when we have unions that disrupt schooling. I will strongly accept any union that supports professional development of teachers and learner success. My union is not activist oriented but it does not adequately support professional growth that would lead to school improvement.

P8, who is a principal of a 'fairly successful school', pointed out that his recipe was to balance cooperation and competition, because schools need both. He stated that "teachers within schools have to cooperate intensely, before they could be able to compete with other schools. I have made sure that I work closely with unions in my school and this has worked for my school management teams." Several of the participants also maintained that closer relationships between unions and school management would enhance school management functions.

It was significant to note in focus groups, however, that from the twenty-four participants eleven maintained that teacher unions' existence was not necessarily pivotal when it came to the attainment of school progress. These participants reiterated what some referred to as the "destructive nature" of union activities. They stated that the unions were opposed to various forms of school progress, including the introduction of some programmes that would be beneficial for teachers' professional growth. Those who were against teacher unions also highlighted aspects such as the unions' politicisation of school processes. They were concerned about the "over-involvement" of unions in school activities, including teacher appointments, especially appointments of school managers.

Nine participants also were concerned about what they referred to as the disruptive labour union activities, when teachers embark on "chalk-down" strikes that would see them leave their classrooms until their demands were met, especially by the education department. The participants stated that these actions usually put the teacher unions at loggerheads with other stakeholders, thus making cooperation almost impossible. They also concurred that union allegiance frequently leads to staff divisions when staff may make decisions in the staffroom according to their union affiliation.

5.2 When unions and managers cooperate

Despite some negative views on teacher unions, the participants also pointed out what worked when teacher unions and school management cooperated. Several participants proclaimed that teachers would cooperate when the vision was clear and this would bring significant transformation and success to the school. Participants also pointed out that when teacher unions and school managers worked together, it was bound to ensue in improvement in learner results and teacher morale. Six principals (P1, P3, P4, P5, P6 and P7) stated that cooperation amongst all the school's role-players, including teacher unions, might also lead to an improved culture of teaching and learning. Some participants added the possibilities of shared management in schools, because meticulous managers might use effective management styles. The argument was raised that it would be much easier for teachers in a school to share the school's vision if there were cooperation. P2, P4, P5, P6, P7 and P8 also declared that there usually were challenges in understanding department of education policies and procedures. Yet the eight participants who were union members proclaimed that their role was to work closely with school management teams to understand and enhance the implementation of policies.

Participants maintained that when there is a lack of cooperation between teacher unions and school managers the "agenda of empowerment of all teachers is

negatively affected". Almost all participants concurred that unions should be the core stakeholders to lead teacher empowerment. The principals, including members of union site committees, agreed that unions usually are preoccupied with workers' rights and rarely fight for other forms of social justice in education, including a just curriculum. P4u pointed out:

It is an open secret, our fundamental purpose is to stand for teachers', our members', labour issues. After all, we are a union. But if you look at our documents that spell out our vision, we are for learner excellence as well as teacher development. We were borne out of struggle and we want to see the fruits through (the instilling of) excellence.

All the participants maintained that unions that are well run, are critically important for any school management team. P6a, a school management team member, explained it:

School managers who are supported by the teacher union site committees in their schools are more likely to experience less problems. However, the problems in many schools are caused by the challenge of not having any collaboration and understanding between unions and school management. Unions can enhance school management; I have seen that in my school ...

5.3 Professionalism, activism and school progress

One union participant (P1u) added that usually the school managers thwarted progress when it came to creating a healthy relationship between teacher unions and school managers. He said that, because of the history of opposition between unions and management, school managers should "break the veil of suspicion and lead the way to effective cooperation". The majority of participants concurred with P7a who declared that cooperation would happen where there is a "special relationship between unions and management", because then "success is bound to happen". Four school principals (P2, P4, P5 and P7), who had a strong relationship with the unions in their schools, also agreed that union members needed reasonable managers who would be sympathetic to their cause and, if this happened, better cooperation with school managers would occur. P4 contended:

The union members will see when you are genuine. When I arrived here as a principal, they told me how disruptive some members could be. I had a meeting with each of the two union member representatives in my school. One belonged to my union, but I am very fair to both and that is critical. Treat unions the same way, they need to see that you understand them but if it comes to putting the foot down and manage the school I do not compromise. For example, union meetings cannot disrupt my school, something that happens in many schools. Therefore, school managers need to build this understanding right from the beginning.

Three other principals maintained, though, that unions are frequently the cause of confusion, especially in historically black schools where management can easily feel disrespected. Fourteen participants who are union site committee members concurred that cooperation needs to be planned well and incorporated into the vision of the school. The principals maintained that when unions take any militant stance against the department it is very difficult to cooperate with them. They find

that unions usually renege on agreements and plans during the times of teacher strikes. Yet P5 explained the union's position as follows:

Unions are full of activists, people who are teacher advocates. In my school, I think I have been successful because I tap on this vibrant activism, which can also inject dynamism in how we strive for success. Unions and managers should not necessarily be opposed. Activism and professionalism can easily be married for success.

However, three principals (P2, P3 and P8), and seven school management team members stated that by their nature some unions do not support school managers, even when they come up with progressive programmes for the school. They pointed out that this might be aggravated when the manager is not a member of the union. One participant, P2, claimed that she had observed how unions operated in two schools where she was a middle manager. She was a head of department and then became a deputy principal in the other school. In both, she said, she experienced various challenges when working with teacher union site committees. P2 maintained:

Cooperation will never be possible when you look at unions, all unions. As a manager, you take decisions with them today and they agree. Then you do not know after school who they consult because they come back saying to you in the morning: No, we have a different position now. It can be a challenge and sometimes you can just believe that they are not for progress, these people.

Linked to the arguments in the above section, participants agreed that teachers have human rights and among these rights is the right to strike. They have a right to go into the streets to demand salary increases, for example. However, when these actions become prolonged, they affect learners' progress. In South Africa, people would know about the teachers' strikes in 2008, when teachers went on a prolonged strike. All the participants stated that there was a link between teacher unions' actions and the poor achievement of the learners.

Fourteen participants stated that, although they were aware that unions mainly stand for labour issues, they maintained that they should play a role in engendering cooperation in schools, thus helping the school managers. They also pointed out that several teachers who were union members were very loyal to their unions and very indifferent towards their school managers. In different ways, they expressed the argument that caring unions are those that would also have "an agenda that ensures that their members are in working schools". Participants pointed out that in historically black schools teachers rarely initiate professional development programmes. Two teachers (P5a and P5u) from a historically coloured school who stated that they rarely had any professional development programmes "initiated by the school" also reiterated this.

The participants further proclaimed that teacher unions usually interfere with the school governing bodies' (SGB) appointment of teachers. They claimed that union members frequently fought for their own members within or from outside the school to be appointed. As a result, the union members would turn the appointment of teachers into a 'dirty' political lobbying that could frustrate school

managers. Two participants (P1a and P3a) even stated that, after appointing candidates who were not favoured by powerful unions within their schools, it was clear that the new colleagues would not get support from a section of the teachers. The participants stressed that cooperation needs solidarity and belief in one another. In the absence of this support, productivity will be deferred and teachers will all feel disempowered because they are not working together.

5.4 Document analysis

In three of the four historically black schools (P1, P2 and P3) as well as two of the historically coloured schools (P5 and P6) there was no cooperation and the school management teams were ineffective and powerless. Documents in these schools also reflected grade 12 learner achievement that was below the expected level. (In South Africa grade 12 represents the final school year, for the passing of which learners obtain the National Senior Certificate (NSC), a high school diploma and school-leaving certificate). The grade 12 average pass percentage in these five schools over the past three years was 48%. In these schools cooperation between school managers and teacher unions was poor. In School 4, 98% of the staff members belonged to one union, SADTU, and the principal was an executive member of the branch. The grade 12 pass rate of an average of 70% over the past three years showed that the cooperation between the school's principal and the unions was among the advantages of the school. The school's progress also attested to the fact that union activities in his school were allowed only after school and they never disturbed the learning and teaching programme. The documentary evidence on the two historically white schools (7 and 8) also reflected high learner success of the grade 12 classes. In both schools, the pass rate on average was more than 91% over the three-year period. In both schools, the principals stated that union activities did not in any way deter the school programme. All teachers worked closely together to support the school programme. Both schools also had constant professional development programmes. In one of these two schools, the principal stated that the teachers were not even active in teacher unions even though they were registered members. Two unions of choice in these two schools were NAPTOSA and SATU.

The other documents that were examined were the minutes of meetings between school management and union site committees. The minutes of meetings display the kind of resolutions arrived at and one can sense whether there was team understanding in arriving at certain resolutions, even though there might have been disagreements at certain times. Apart from memorialising the meeting, the minutes helped to show accountability, as well as delegation. Meetings were not held very often in three of the schools (Schools 1, 3, 5) and even when they happened, they ended quickly and abruptly. In several instances, the principals and their management teams made the decisions. In one school (School 2), the minutes reflected how union site committee members dominated the principal and her management. Decisions were more dependent upon union members than school managers, and the minutes reflected the silence of the managers. In one entry, the appointment of a head of department was recorded and this showed how two unions who each wanted their own preferred candidate overwhelmed the school managers. In six of the schools (Schools 2, 4, 5, 6, 7 and 8) teachers kept

some form of journals, although journaling was not up to date in all the schools. Yet journal entries showed instances where reflection demonstrated peer cooperation and the involvement of the principals' offices in supporting aspects, such as teacher management and teacher commitment. In three of the schools (4, 7, 8), the journals showed the involvement of committees such as curriculum committees and union site committees. In each of the schools a sample of five teachers' journals were examined. There were no journals supplied in two of the schools (1 and 3). Some teachers supplied evaluation files that had a few notes on personal development journals.

During the analysis of the data, the researcher categorized and coded the common themes. The themes were linked to Axelrod's game theory and they demonstrated how the existence or absence of cooperation influenced various aspects of managing schools. The need for a guiding vision, the ability to deal with conflicts, and working towards a common goal are part of the themes teased from the findings. These are tabulated in the school managers' cycle in Figure 1 below. Whilst some schools, such as 3 and 6, were struggling to engender cooperation, the managers understood the need to develop a strategy of building cooperation.

6. Discussion: Learning from Axelrod

The study showed the need for unions to build their ability to enhance teacher growth. The school principals occupy an unenviable position because in many South African schools the conditions do not allow distributed leadership. Effective principals will use Axelrod's and similar theories to draw up a strategy to inculcate cooperation in their schools. It is of vital importance for school managers to plan this continuously:

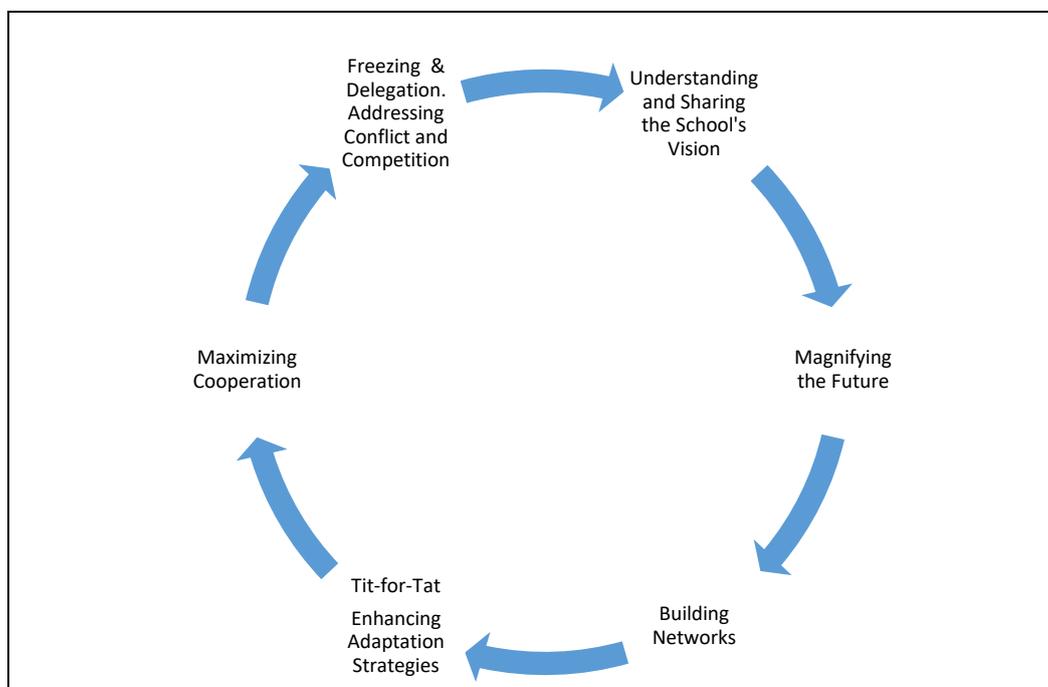


Figure 1: School Managers' Cycle for Instilling Cooperation

Three principals (P4, P7 and P8) in the study used similar stages although it may not be easy to compartmentalize the stages because one straddles the next. Schools have become so complex that principals need to plan all aspects of their management, especially in relation to other stakeholders. School management courses for school management teams should teach the principles about how to prevent and annihilate tit-for-tat behaviour and the negative impacts of defection and betrayal in a school as an organization. Several programmes have shown the importance of preparing school managers to implement formal management and leadership practices. Below the stages are briefly explained:

Understanding the school's vision

The school's vision is critical and can be one important document that brings school managers and union site committees to work closely together. The vision of the school must communicate achievable goals and should inspire all role-players. School role-players should cooperate towards an agreed-upon vision.

Magnifying the future

As the school managers plan transformation in the running of the school, they need to magnify the future for both the unions and the rest of the teachers. Axelrod contends that magnifying the future can bring employees to cooperate for the success of the organization. Magnifying the future means bringing opponents together to believe in one common dream; this is the best way to maintain cooperative membership.

Building networks

The meticulous school manager trying to build cooperation in her school will engender consensus and forge networks. Teachers working in silos generate problems in many schools, especially between unions and school managers. The isolation creates hostilities and misunderstandings. Employees betray one another because of the lack of interaction, and negative competition. Effective managers will be able to dumb-down extreme hostilities without dismissing necessary conflict.

Tit-for-tat: Enhancing adaptation strategies

When interactions have been strengthened, the teachers need to learn to lead the school through Axelrod's "reciprocating". School management should always make the teams aware of the dangers of defection and ways of avoiding following contradictory policies. Perceptive and skilled school managers would deal effectively with factions that thwart progress by equipping teachers with relevant strategies.

Maximizing cooperation

One of the most overlooked strategies by school managers is building more leaders in their schools through participative leadership and shared leadership. Good leaders create more leaders who will have the necessary maturity to cooperate with colleagues. The creation of motivators and leaders in any school helps in engendering trust and commitment. It is easy for school managers to nurture motivators and leaders when they have inculcated teacher maturity

among their teachers (Msila, 2002). Furthermore, teachers who have reached professional maturity would be able to embrace cooperation (Msila, 2002).

Freezing approach and delegation

The best experiences need to be solidified and replicated throughout the six stages. If one were applying Kurt Lewin's (1947) Model of Unfreeze, Change and Refreeze in instilling cooperation, then the first five stages would be a reference to unfreezing and changing the organization. The last stage, which is refreezing, refers to establishing and sustaining the changes. Refreezing may be the most challenging stage because schools, like all organizations, will experience conflicts and competition which may be contrary to the objectives of cooperation. It must, however, be part of a school's culture if the school seeks to be successful.

Rowlinson (1997) points out that Axelrod shows that cooperation does not need coercion. This is what some principals pointed out, as illustrated in Figure 1, claiming that school managers need to consciously work with their union staff to achieve cooperation. Furthermore, Rowlinson (1997) adds that cooperation is promoted when members are prepared to engage in frequent interactions. In many schools, teachers tend to work in isolation, as several participants stated in the interviews. Yet Axelrod (2000) posits that people need to be brought together in the long term and increase interactions to promote the emergence of cooperation.

Figure 1 above helps in understanding the dynamics of cooperation in schools and answering some of Axelrod's (2000) questions that actors searching for cooperation should ask. These questions also are critical for all managers striving for cooperation:

- i. Under what conditions can cooperation emerge and be sustained among other actors who are egoists?
- ii. What advice can be offered to a player in a given setting about the best strategy to use?
- iii. What advice can be offered to reformers who want to alter the very terms of the interaction to promote the emergence of cooperation?

The study also demonstrates that only schools where unions cooperate with school managers and other team members will reap the benefits of effectiveness. Many schools fail because of cultures that thwart cooperation, especially between unions and school managers.

7. Conclusion

Apart from showing the way, teachers should understand the dynamics of cooperation in their schools. The study demonstrated that the impact of cooperation between the school management and the schools' teacher union site committees is critical to the achievement of school effectiveness. Studies cited indicate that teacher commitment, learner success and increased parental involvement are among the factors that will be enhanced when managers cooperate with teacher unions in their schools. Conscientious members of teacher unions would not betray other role-players by not cooperating for the success of their schools when the future is magnified and their roles are justified. Effective

managers who build successful schools would know what they need to do to ensure that cooperation emerges, and this includes managing factions and honing management skills. These skills include knowing how to build cooperation among various role-players. School managers who are lifelong learners will also continue learning various aspects of management and leadership, including conflict management, financial management and entrenching cooperation. Teachers betraying one another damage the organization. The study indicated that schools with broken-down cultures and little cooperation still have much to achieve. There was evidence of cooperation in the three schools that excelled in effectiveness.

Finally, teacher labour unions, school managers and teachers in general need to cooperate without coercion from district or provincial officials. Axelrod's game theory clearly shows that government cannot enforce effective social contracts. School managers ought to understand that it is the need for a shared sense of community, solidarity and dependability that will transform teachers in schools. The belief in learner success and well-run schools that address the ills of society will encourage meticulous teachers to cooperate with other role-players. Only schools that survive through cooperation will be able to maintain the necessary stability.

Like most qualitative studies, this study's main limitation is the small sample, which makes it impossible to generalize results to all schools. However, the findings are useful for understanding the circumstances of the schools under study. More studies with larger samples need to be conducted to assist school managers who seek to enhance school effectiveness through cooperation.

8. References

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