



The Challenges Faced by Teachers when Incorporating Chess into the Curriculum in King Cetshwayo District Primary Schools

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As the standard of education in South Africa deteriorates, one solution considered that has brought success in various countries is chess. Numerous studies have been conducted across the globe proving that chess is the perfect intervention. Studies conducted in America, Italy, Denmark, India and other parts of the world have focused on the game of chess and its incorporation into the curriculum but rarely on the experiences of the teachers who are the key role players in incorporating this game in their teaching. A focus on the teachers helps ensure that the intervention is effective and that assistance is available to the teachers whenever they need it. This article explores the challenges that teachers encounter when incorporating chess in their classrooms. Data in this qualitative study were collected in the province of KwaZulu-Natal by observing and interviewing 14 teachers from various schools in which the Tsogo Sun Moves for Life programme has been incorporated. The findings of this study show that teachers are faced with many challenges which hinder the successful integration of chess in their teaching.

Key words: *chess, Tsogo Sun Moves for Life, primary schools, literacy, numeracy*

Background

Schools throughout South Africa generally display low academic performance. For some time, concerns have been raised from various quarters about the country's deteriorating educational standards. Various studies conducted both domestically and internationally have drawn attention to the underperformance of South African children in the key learning areas of



Literacy, Mathematics and Science. For example, the Progress in International Reading Literacy Study (PIRLS) found that in 2006 only 22% of South African learners were able to reach the Low International Benchmark of 400 in literacy compared to 97 and 98% achieved by Russia and Singapore who were among the highest achievers (Howie, Venter, Van Staden, Zimmerman, Long, Scherman and Archer, 2009). The most recent PIRLS Literacy Grade 4 achievement report scores placed South Africa last out of the 50 countries around the world participating in the programme (Howie, Combrinck, Roux, Tshele, Mokoena & Palane 2017).

Learners' results are of particular concern in South Africa's previously disadvantaged schools (Van der Berg, Taylor, Gustafsson, Spaul & Armstrong 2011). Their levels of under-achievement have been attributed to problems such as inadequate resources and facilities, congestion and lack of professional expertise among teachers. To address deficiencies in the education system, the Department of Basic Education (DBE) has introduced a number of initiatives for improving teaching and learning in these schools. One of these initiatives, introduced in 2009 by the DBE together with Tsogo Sun, is a chess programme, the Tsogo Sun Moves for Life (TSM4L). Support for such a programme came from demonstrations of this game's contribution to education in numerous countries worldwide and its usefulness as a tool to help learners with numeracy and literacy (Nicotera & Stuit 2014).

Numerous studies showing that chess has helped education in the United States, Italy, India and elsewhere have paid little attention to teachers as the key role players in the integration of chess in the curriculum. Only one study has been reported in the literature to date on the South African experience but its focus was on effective learning through chess rather than teaching using chess (Luneta, Giannakopoulos, Coetsee & Cheva. 2016). To assess and understand how best to exploit chess as a tool for educational improvement in South Africa, the present qualitative study examined the teachers' actual experiences and the challenges they faced in the TSM4L programme. The present study focused on 14 KwaZulu-Natal public schools in the programme in Nkandla and Richards Bay which are located in the King Cetshwayo Educational District. The following research questions guided the study:

- How were teachers prepared in advance of the TSM4L for the incorporation of chess into the curriculum in the King Cetshwayo District?
- What support was provided to teachers by the DBE and by the programme during its implementation?
- What challenges were faced by the teachers in their classrooms when incorporating chess in the curriculum?

Background

Chess programmes have been reported to enhance learning in several countries such as Turkey, Cuba, the United States, Ireland, Armenia, Denmark, Germany, Venezuela and India (Gumede



& Rosholm 2015; Costello 2013; O'Connell 2011; Scholz et al 2008). A Chess-in-the-Schools programme was used in deprived inner-city schools in New York to improve learners' learning skills, with excellent results (Forrest, Davidson, Shucksmith & Glendinning 2005). Regarding the question of transferability of skills between subjects, Nurse (1995), Dauvergne (2000), Meyers (2005) found that transferability from chess to school subjects included aspects such as memorisation, creativity, concentration, intellectual maturity and problem-solving skills. In Denmark, Gumede and Rosholm's 2015 study affirmed that chess knowledge acquisition and construction surpass even those for that specific subject as they replaced math instruction with chess instruction for some learners and, surprisingly, they showed more improvement in maths than others who had kept on receiving maths instruction (Gumede & Rosholm 2015). In Congo (Zaire), Albert Frank's 1978 study confirmed that chess helped in developing aptitudes, specifically numerical and verbal (Ferguson n.d.). In South Africa, the study conducted in 2016 by Luneta et al (2016) confirmed that chess is associated with the improved acquisition of mathematical knowledge as well as cognition among Grades R–3 learners in Gauteng.

In the international studies, grandmasters, chess trainers and chess instructors were responsible for teaching chess to the learners; in King Cetshwayo, however, it was Foundation Phase teachers who had this responsibility. This raises questions regarding the role of instructors in the success of the chess programmes for learners and whether the Foundation Phase teachers in the TSM4L programme were able to play chess and were motivated to integrate it into their work. As teachers play a decisive role in the fate of a project or programme, understanding their experience is crucial.

In schools-based chess programmes, teachers use the game of chess to make their lessons appealing to learners and to keep their attention. According to the literature, chess has played a significant part in helping teachers to teach better and in improving learners' academic performance (Aciego et al 2012; Boruch & Romano 2011). Furthermore, in South Africa since 2013, chess has been included as one of the 16 sporting codes in public schools recognised by the government because of the game's support for learning and its assistance in raising intelligent quotient (IQ) levels (Murugan 2013; Dauvergne 2000). It helps to equip learners with the 21st century skills needed for them to thrive, including concentration, creative and critical thinking and complex problem-solving. It also enables them to visualise and to take informed decisions and, through it, learners learn while having fun (Dauvergne 2000; Hong & Bart 2007; O'Connell 2011; Costello 2013; Karlovich 2016).

The Tsogo Sun Moves for Life programme

In South Africa in 2009, the Supreme Chess Trust, in partnership with the Department of Basic Education and the Department of Sport and Recreation, and led by the then president Jacob Zuma, introduced the Moves for Life schools-based programme in which teachers integrate chess into their everyday teaching with the aim of supporting the education effort by leading



the learners to improved knowledge acquisition and, ultimately, better results in mathematics and literacy. The programme has two elements: MiniChess (embedded in the curriculum for Grades R–3, that is, six to eight-year-olds) and Master Moves (an extracurricular activity for learners aged nine years and older) (Shabazz 2010). The programme was selectively piloted in three provinces: Gauteng, KwaZulu-Natal and the Western Cape. In KwaZulu-Natal the programme has been implemented in 20 schools in the Richards Bay and Nkandla areas within the King Cetshwayo Education District.

Theoretical framework

This study was underpinned by Victor Vroom's expectancy theory, which was used as a framework for understanding the attitudes and behaviours of the teachers in incorporating chess in the curriculum. Vroom (1964) made four assumptions: first, that people join a workplace with expectations that ultimately influence the way they perform their duties; second, that the way a person behaves results from a choice he or she has made; third, that expectations of people in a workplace vary; and fourth, that from the options available, people will choose what will improve them personally. The theory also states that the way a person perceives work is based on ability, motivation and role perception. For the teachers in the present study to be able to integrate chess successfully when teaching, it follows that they must know how to play it themselves before they can teach it and apply it in the classroom; they must feel impelled to incorporate it into their teaching; and they must understand and accept their role in the process.

Method

Research design

This qualitative study used semi-structured interviews to elicit detailed information from the teachers regarding their integration of chess when teaching. An interpretive paradigm was followed with the aim of understanding the explanations of the participants and to make meaning of their experiences.

Sampling

For this study, teachers who form part of the Tsogo Sun Moves for Life programme were sampled. The programme has been implemented in a total of 20 schools in the King Cetshwayo District which has five Circuit Management Centres (CMC). Purposive sampling was used to select participants with rich information on incorporating chess into the curriculum, that is, people who experience it daily in their classrooms. The schools were distributed in three CMCs (Nkandla, Umhlathuze and Imfolozi) with two (Imfolozi and Umhlathuze) having five of these schools and one (Nkandla) with ten. To maintain consistency, five were selected using convenience sampling. Primary schools were targeted, the Foundation Phase in particular,

which is where the chess programme is currently being implemented. One school in Imfolozi CMC denied the researcher permission to conduct the study in the school which led to a total of 14 schools forming part of the research sample.

Data collection and analysis

Data were collected from one TSM4L coordinator in charge of the implementation of the chess programme in schools in the King Cetshwayo District and 14 teachers implementing it in their classrooms. In-depth interviews were held with the teachers at their schools where questions were asked about their experiences relating to the integration of chess when teaching the different Foundation Phase subjects. The questions were semi-structured to allow the participants to express themselves in a way they felt comfortable with, while providing the researchers with thick valuable data. With the permission of the participants, the interviews were recorded and transcriptions were later made which enabled data analysis. The researcher also spent an hour observing each of the teachers teaching any of the four Foundation Phase subjects. Observing the teachers in action was done as a way of triangulating the data collected from the interviews. Documents from the schools and Moves for Life were perused to support the evidence received from the participants. Data analysis was done thematically through transcription, data coding and theme generation to bring meaning to the collected data (Efron & Ravid 2014).

Ethical clearance

The University of Zululand Research Ethics Committee (UZREC) issued ethical clearance for this study and permission was granted by the DBE and Tsogo Sun Moves for Life. Ethical matters pertaining to confidentiality and anonymity were addressed through the usage of pseudonyms to conceal the participants' actual identities. The participants participated willingly in the study and understood that they could withdraw at any time if they so wished.

Findings

The data analysis yielded five themes: chess proficiency, increased workload through workbooks, language, age-appropriate content and lack of rewards and recognition.

Theme 1: Chess proficiency

The majority of the participants interviewed complained that they had no experience of playing chess, which they were expected to incorporate into their teaching. The participants pointed out that they had never played chess even when they were at school and had never anticipated that they would have to learn it at some point in their careers. The little chess knowledge the

participants had received emanated from the coaching sessions they participated in presented by the Tsogo Sun Moves for Life coordinator. Participant F stated:

What I only knew in chess is what I saw when my children played, the names of the pieces and how they move. Thanks to the coordinator who taught me how the game is played but I am still not an expert in chess but I am happy that I am able to teach it to my learners. In the school I went to there was chess, if I knew I would have joined in preparation for this time when I have to teach it to my learners.

Participant J shared this view:

This is the first and only school where I have worked and I never thought that at some point I would have to teach using chess. Where I went to school, we did not have it, there was just soccer and netball, and now I have to teach using chess. I know a little now because the coordinator trained us but I would not say that I am comfortable playing with someone who is good at it. The workbooks given by the coordinator are also helpful at times when she is not around, I know I can always refer to them.

Although some of the other participants interviewed had a basic knowledge of the game they had no exposure to tournaments, hence they had no Chess (Chess South Africa) rating.

Participant K explained:

I was fortunate to go to a school which had many sporting codes, chess was among them. Even though I wasn't a chess regular player but I would go there every now and then for some games when we had no netball or hockey that day, as a result I was never selected to take part in tournaments. My learners, however, have that opportunity to go to the local and district tournaments organised every term in Richards Bay and they try their best; others have received medals and trophies which is a good indication to me and the work that I do.

Participant G also alluded on her experience of chess:

I knew absolutely nothing when this programme started and I am grateful that I am part of this programme. I have learnt a lot about chess from the coordinator. I even encourage my own children at home to play it because I have read about its benefits in school.

Training was offered to the teachers prior to implementing chess in their classrooms. Ongoing workshops are also presented to ensure that teachers are on track and updated with the new

information pertaining the incorporation of chess when teaching. The TSM4L coordinator explained:

The teachers are aware that they can contact me anytime they encounter challenges. Over and above that, I visited them constantly in their schools to give them updates and latest developments and just to ensure that they are implementing the programme correctly.

The teachers were able to contact the TSMFL coordinator whenever they experienced challenges or when they needed help with certain topics. In addition, the TSM4L coordinator visited schools to help where she could and she taught Mathematics in some schools as a way of demonstrating to the teachers how they should go about incorporating chess when teaching. The inability of most of the participants to play chess has led some to request help from some of their learners in teaching the class to play chess.

Theme 2: Increased workload through workbooks

The participants were provided with resources in the form of chess sets and workbooks to assist them in integrating chess in the classroom. The majority did not appear to be overly concerned regarding to the chess sets, as they only used them for playing chess and not in conjunction with the subjects they teach. However, with regard to the workbooks, the participants complained that they posed additional work which had to be done on top of their already high workload. They complained that they barely had time to mark the learners' exercise books and their many DBE workbooks, as each subject has its own workbook. The chess workbook, in their view, was just something to do when there was some spare time after they had finished the day's activities. The teachers use a CAPS Planner and Tracker, which states the daily activities that the teachers have to do with the learners for all the subjects.

Participant C stated:

Here in the Foundation Phase we are stationed in one class and teach all four subjects which all come with workbooks that we have to give to the learners and mark when they have written the answers. With so much work we think about it even at home. The introduction of chess and its workbooks has made things even more difficult. Now I have to take exercise books home for marking because there is not enough time in the classroom.

Given the few hours of contact time, five to six hours, the participants stated that they could barely handle their duties and could not afford to add to their responsibilities.

Participant A explained:

I teach all four subjects in the Foundation Phase and in other days the learners leave very early before we can even finish what is in the tracker. Getting time for chess is a struggle especially because it comes with a workbook that has many activities that the learners have to complete and I have to mark for them. When I am in my class, I stand for the whole day teaching and when the learners go home, I get time to mark their exercise books. There is no time for workbooks!

Participant F added:

The chess workbooks from the Tsogo Sun Moves for Life is good, and I like its activities in particular, they are very interesting and the learners like them. The challenge is with the time because we cannot rush to use the chess workbook having not completed the day's activities in the tracker because that is what we are employed to do. I just try and make time to help the learners with the chess workbooks when we have finished all the day's work.

Theme 3: Lack of rewards and recognition

The participants interviewed revealed that they would like to receive recognition for the extra work they do because Foundation Phase teachers in other schools have not been required to implement the programme and thus do not have the extra work that they have. As this programme is still being piloted, not all primary schools are part of it and those who are feel that they are doing far more than their counterparts in other schools. Hence, they would like to receive recognition.

Participant D explained:

What I do not like with this chess programme is that we do a lot of extra work that the other teachers in other schools do not so yet there is nothing motivating us. If I do extra work, I expect to get extra payment. This is very discouraging!

Recently in this region, Tsogo Sun Moves for Life for the very first time thanked all the teachers taking part in the programme, giving them a token of appreciation in the form of a certificate. However, not all the teachers were happy with a mere certificate, stating that they would have preferred a monetary reward. Participant E for example stressed how she would like to be given an incentive by Moves for Life for taking part in their programme although she did appreciate the certificates they had recently received.

It is no use that Moves for Life gives us so many chess boards and sets for all the learners if they are not motivating us to use them. I am sure if there was a little something they were paying us for using chess because in other schools they are not using it. This year, for the first time we were given certificates. They are beautiful and I like them but it would have been better if it was money as I would have been able to do tangible things with it and not just display it like the certificates.

Theme 4: Language

The schools involved in the study are predominantly Zulu, with English taught as an additional language. However, in the Foundation Phase learners are taught in their mother tongue which is isiZulu but the chess material provided for both the teachers and learners is in English. English is only taught for one or two hours in Grades 1 and 2, and in the year of entry, Grade R, learners are not taught English at all.

Participant F explained:

I am teaching learners who speak IsiZulu and are taught in IsiZulu but the chess workbooks are written in English which becomes a challenge as I always have to translate for the learners to IsiZulu whenever we get time for chess in class. I cannot just give them the chess workbooks and expect them to read and follow the instructions on their own like I do with the other subjects as they are written in IsiZulu.

The teachers explained that whenever they wanted the learners to use the chess workbooks, they first had to read the instructions aloud and then explain what is expected of them, which takes a lot of time. The learners are used to the DBE workbooks and textbooks which are written in their home language.

Participant L mentioned in this regard:

The workbooks present a language barrier for the learners and more work for us as teachers. We were told to give the workbooks to the learners so that they do the activities on their own but knowing the language of teaching in this school in the Foundation Phase, I cannot do that because I know my learners are still new in English and will not be able to understand what they are required to do. My learners can read and understand but only in IsiZulu for now; it would be better if the workbooks for our learners were written in IsiZulu.

Participant B stated:

My learners are still being introduced to English, I teach them in IsiZulu. They know how to read but only in IsiZulu and they cannot read these chess workbooks written in English. They are only able to answer some of the activities after I have explained the tasks to them in IsiZulu. The coordinator explained that learners should be able to read and be able to write the activities on their own. With the workbooks still written in English for my Grade 2 learners, I do not see that happening.

Theme 5: Age-appropriate content

The participants stated that they were not familiar with the game of chess and the little they do know is what they were taught by the TSM4L coordinator. The content of the workbooks is said to be too difficult. The participants complained that some of the activities in the chess workbooks were too hard even for the teachers and they did not like to give them to their learners because they knew it would be just a waste of time as it would be difficult for them as well.

Participant I stated:

I find some of the activities in these chess workbooks very difficult. If I was able to play chess well myself maybe they would not be a problem. If they are difficult for me as the teacher, how much more for the learners? These activities are just hard”

Participant M shared the same view:

Some of my learners find the activities difficult even after I have explained them in IsiZulu. Some are very tricky and they tend to confuse the learners; the DBE activities are better. I spend a lot of time explaining the activities to the learners and if I do not explain them thoroughly, they will not give correct answers and they will fail the activities.

Discussion

The integration of chess into the curriculum was done with the aim of helping teachers to teach better and succeed in developing crucial skills in the learners. However, few of the intended effects have been discerned in King Cetshwayo District as the district is ranked eighth out of twelve districts by the level of achievement of Grade 12 (Regchand and Broughton, 2018).



The teachers' lack of expertise in playing the game is a concern. The inability of the teachers to play chess could demotivate them and make them disinterested in this initiative, as Vroom's (1964) expectation theory explains. This inability essentially renders the programme ineffective. Without an ability to perform the task, that is, play the game, you cannot expect positive results, as expectancy theory explains that personality, skills, knowledge, experience and ability contribute to one's performance (Vroom 1964). As the literature states, chess programmes in schools have brought positive results but grandmasters and chess instructors take the role of instructors in such programmes (Costello 2013).

One of the questions the study sought to investigate is how the teachers were prepared for the incorporation of chess in the curriculum. Prior to the teachers starting to use chess in their classrooms, they were trained by the Tsogo Sun Moves for Life coordinator who has a good knowledge of chess. However, this did not equip the teachers adequately, hence they still feel that they cannot teach using chess. Although such programmes are not intended to produce grandmasters, for the success of the programme it is crucial that instructors have knowledge of chess. In other places like New York and Connecticut, professional development programmes are presented with training for teachers provided by a FIDE master and the National Master National Scholastic Chess Foundation. Such programmes have subsequently had visible results (NSCF 2017).

The ongoing support from the TSM4L Coordinator has greatly assisted the teachers; nevertheless, it is equally important to empower them so that they are independent and can teach chess well even on their own. Organising tournaments for them would help them not only with practice but also to see how much more the programme has to offer, as it is the case in the Gauteng area (Tsogo Sun 2016).

The teachers complained that the chess programme increased their workload significantly since certain administration work had to be done in this regard which included the marking of workbooks. Despite the intention of the chess programme to support the teachers concerned, they felt that in comparison with their counterparts in schools that are not part of this programme, they had been burdened with more work. Humans are psychological beings and they expect to be rewarded for either improved performance or extra work done (Pirijjat & Bagga 2014). Expectancy theory stresses the importance of positive valence as it motivates individuals to perform better and counteracts negative valences from the activity. If the programme is to work successfully, this needs to be considered as the teachers may feel demotivated and be put off in chess for life. TSM4L gave certificates to the teachers who were part of the programme for the first time in November 2018, acknowledging their contribution. One would therefore expect them to be happy and perform better, as DeCenzo and Robbins (2010), Haile (2009) and Severinsson and Hummelvoll (2001) state that rewards result in better performance by employees. Contrary to the expectations, the teachers expect monetary tokens of appreciation. A possible reason for this finding would be a lack of understanding by the



teachers not only of this programme but also their roles as teachers. This might be related to the fact that this study was conducted in semi-urban and rural areas and possibly the teachers are desperate for money.

The findings reveal that the teachers found some of the chess resources provided to them too advanced for the learners. Consequently, they experienced challenges understanding the content of the chess workbooks themselves, which is not surprising given their lack of chess expertise, and they felt that some of the content was above their learners' level of thinking. This is unfortunate as it may discourage teachers from using the workbook and the efforts made by TSMFL and the DBE to improve the standard of education would be unsuccessful. Accordingly, frustration on the part of the teachers may be expected which could put the learners off chess for life. In other countries, the teachers have to complete chess courses to ensure they are familiar with the game (NSCF, 2017).

The learners' struggle to understand the chess workbooks was raised as one of the challenges faced in the integration of chess into the curriculum. One reason for this is that the workbooks are written in a language that is foreign to the learners, as the language of teaching and learning in the Foundation Phase is the learners' home language in the sampled schools, with an exception of one which uses English. The South African curriculum states that Foundation Phase learners must be taught in their home language. Because the workbooks have to be translated for the learners, more time is spent explaining what they should be reading themselves so that their reading and reasoning skills are sharpened. This is in line with Vygotsky's (1978) social constructivist theory which stresses the importance of language in teaching and learning. Unfortunately for these learners, the language barrier hinders them from taking full advantage of the chess resources provided. This does not happen with DBE workbooks which are written in IsiZulu, a language that the learners speak and understand. Hence, they are unable to take the lead role in their learning, which constructivist theory suggests will help learners learn better (Amineh & Asl, 2015).

Recommendations

Rewards are important for motivating people to put in more effort and work harder. If the teachers were to receive monetary rewards as they recommended, the effectiveness of this programme might improve. However, this raises a concern as to whether monetary incentives would arouse the kind of interest needed for the success of this programme. It also raises the question as to whether the chess teachers cannot be appointed in line with their interest so that quality work is produced by committed people. Could the teachers voluntarily become part of the programme so that there is an interest which would bring dedication? South Africa is a country with eleven official languages; getting translators to interpret the chess workbooks into different languages would be helpful because the chess programmes are currently presented mainly in the Foundation Phase where learners learn in their home languages. Thus, the



workbooks written in English end up not serving the purpose. The programme has worked well in some countries where the responsibility for teaching chess lies with grandmasters and chess instructors. The integration of chess is more than just instruction and if the teachers are not able to play chess, they are likely to face challenges. Unless the teachers' challenges are addressed, change is unlikely to result and the programme will be a waste of time and money and consequently ineffective.

Conclusion

Chess has been a solution for many countries faced with deteriorating performance in schools. Hence, the DBE and the Department of Sport and Recreation together with Tsogo Sun Moves for Life hoped to improve the standard of South African education with chess. Previous studies have focused on the impact chess has on learners' performance; this research by contrast revealed the experiences of teachers when attempting to integrate chess successfully in the classroom. This study lays out the challenges so that they can be addressed and opens doors to more research focusing on the key role players in chess integration in the curriculum, the teachers.



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