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Managing the use of resources in multi-grade classrooms

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This study examined how teachers in multi-grade classrooms manage and use available resources in their classrooms. The study focused on multi-grade classrooms in farm schools in the Free State province of South Africa that cover Grades 1 to 9. The concepts “multi-grade classrooms” and “resources” are explained below. The availability and utilisation of resources in multi-grade classrooms is discussed in some depth. A qualitative research design was used to collect data. Interviews were conducted with 9 teachers who worked in multi-grade classrooms. The data reveals that the availability of resources has improved somewhat in the multi-grade classrooms surveyed; however, textbooks specifically meant for multi-grade classrooms are still lacking. The data also points to several other trends. For example, most multi-grade schools in the sample have insufficient resources. Where available, the resources are either under-utilised or used improperly. Furthermore, it is usually the case that learners are required to share resources across various grades. Moreover, teachers often use their personal resources to get their work done, and in this regard, smartphones play an important part. Finally, the study also reveals that teachers do try to use various types of resources to cater for different learning styles.

Keywords: activity centres; classroom organisation; Montessori educational theory; multi-grade classrooms; resource corners; resources

Introduction

This study examined how the available resources are managed and utilised in multi-grade classrooms. Two essential research questions guided the study, namely, “What available resources are used in multi-grade classrooms?” and “How are available resources managed and utilised in multi-grade classrooms?” For the purposes of this study, I defined the terms “multi-grade classroom” and “available resources.” I then took an in-depth look into how such resources are managed and utilised in multi-grade classrooms and drew some conclusions related to this. This issue is deemed important because of the prevalence of multi-grade teaching at farm schools in South Africa, and the necessity for teachers to use the available resources optimally to enhance the teaching and learning process. According to Kivunja and Sims (2015:10), multi-grade classrooms are widely used in primary schools throughout Least Developed Countries. Hence this study should help teachers in different countries to take stock of the available resources in multi-grade classrooms and learn how to maximise the use of available resources.

Literature Review

In the literature review I looked at multi-grade classrooms in general, but with a specific focus on resources and the availability and utilisation of resources in multi-grade classrooms.

Multi-grade classrooms

According to Berry (2006:1) and Brown (2010b:192) “a multi-grade classroom is a single class that contains two or more grade levels.” Hargreaves (1999:1) and Joubert (2010:58) add that a “multi-grade classroom is a classroom taught by one teacher, with children working in several grades or age groups.” Little, Pridmore, Bajracharya, and Vithanaphathivana (2007:4) state that “in multi-grade classes, a single teacher has to teach learners of more than one grade in the same classroom.” Therefore, multi-grade classrooms have one teacher teaching learners of different ages and levels in a single classroom at the same time.

Mathot (2001:8) identifies inadequate resources as a reason for resorting to multi-grade classrooms. Moreover, Hargreaves (1999) and Little et al. (2007) agree that the lack of physical resources, such as adequate numbers and sizes of classrooms, is one of the reasons for the formation of multi-grade classrooms. Thus, based on the preceding assertions, there appears to be broad agreement that multi-grade classrooms are usually formed due to a lack of resources.

Resources

According to Hornby (2010:1257), resources are materials (especially books and equipment) that can be used to help achieve a particular aim and provide teachers and students with information. In support, Jordaan (2006:39) asserts that “resources are the materials that learning groups have to use in the teaching and learning process.” In addition, Newby, Stepich, Lehman and Russel (1998 in Drinkwater, 2002:75) state that “teaching and learning media, also called instructional media, can be regarded as different ways and means by which information can be delivered to learners.” Moreover, Mathot (2001:40) states that “teaching aids include a variety of electronic, printed, visual and audio-visual materials, as well as computers.” Based on the preceding discussion, resources

include all the materials that help to achieve an aim. In the educational context, such materials are referred to as teaching and learning media, instructional media or teaching aids. In this study, the concept “resources” will be used to encompass all the materials and equipment used in multi-grade classrooms, including the classrooms, equipment, books, electronic devices, printed materials, visual materials, audio-visual materials, and computers.

In a study conducted in South African rural schools Joubert (2010:60) asserts that the instructional resources and physical environment in multi-grade classrooms must be arranged and organised in a way that will facilitate student learning, independence, and interdependence. However, Brown (2010a:54) states that in South Africa the frequent lack of knowledge about the nature and extent of the resources used in multi-grade classes is one contributing factor explaining the scarcity of resources in multi-grade classrooms. A study conducted in rural African schools by Juvane (2005:9) and another study conducted by Mulryan-Kyne (2007:508) both identify the lack of, or insufficiency of resources as a challenge in multi-grade classrooms. Following on previous studies related to the issues discussed above, the aim of this study was to further investigate the availability of resources (or lack thereof), and the way that they were being managed and used within the context of multi-grade classrooms at farm schools.

Availability and use of resources in multi-grade classrooms

Newby et al. (1998 in Drinkwater, 2002:75) state that educational resources, when used effectively, have the potential to present content in a manner that is more readily understood. Charts displayed in the classroom, for example, help learners to better understand and conceptualise content being taught. Another example is the abacus. By practically demonstrating the counting function, learners can internalise basic maths more easily because they can physically see the progression in numbers. Apart from such tactile aids, certain other resources can facilitate learning even in the absence of the teacher, such as auditory media, visual media, audio-visual media, and programmable media (Fraser, Loubser & Van Rooy, 1993). From these examples it is apparent that additional resources allow learners to experience and explore the materials through various senses, thereby catering for learners with different learning styles (Jordaan, 2006). This approach is also more suited to the diverse cognitive styles displayed by learners, as explained by Howard Gardner’s theory of multiple intelligences (Carr, 2007:18; Li, 2012:4). Newby et al. (1998 in Drinkwater, 2002:75) state that the use of different kinds of teaching resources provides learners with varied exposure to the subject matter, thereby enabling learners to construct meaning in their own

unique ways. Furthermore, the use of effective resources enables teachers to capture and maintain the learners’ attention more readily. For example, when a resource such as a television is used in class, learners are usually captivated and display greater interest in the subject matter. Furthermore, when learners’ interest in the content is captured, they concretise learning more easily, and tend to be more engaged and motivated to learn (Msimanga, 2017). According to Fraser et al. (1993) it is through the skilful and effective use of resources where information is presented in a more experiential manner, that learner engagement occurs, and knowledge is internalised. The use of appropriate resources also caters for different audience sizes in effective ways and boosts learners’ understanding and enjoyment of the lesson (Newby et al., 1998 in Drinkwater, 2002:75). These kinds of factors indicate the multiple benefits that appropriate resources bring to both learners and teachers, and why they are indispensable in multi-grade classroom settings.

In a study conducted in Afyonkarahisar, Western Turkey, using qualitative research involving a cohort of 58 teachers, Ocak and Yildiz (2011:873) identified the lack of tools, inadequate physical conditions, transportation for scholars, and communication as problems impacting on multi-grade classrooms. Also, based on the findings of a study conducted in Nepal and Sri Lanka, Little (2004:16) notes that “most researchers and practitioners agree that successful strategies for multi-grade classrooms depend on adequate supplies of resources to support individual and group-based learning.” Self-study resources should never be regarded as a substitute for the teacher. Unsurprisingly, Taole and Mncube (2012) highlight the need for resources relevant to multi-grade classroom teaching. Also, Gower (2010) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) (1989) assert that there should be additional learning materials and resources geared specifically for multi-grade classrooms. Brown (2010b:195), in a study conducted in the Eastern Cape, South Africa, found that learning resources were being developed by some teachers as self-instructional tools for learners to use independently. Teachers later use these self-study guides to track learners’ progress. Such examples illustrate why it is necessary that learning and teaching resources should be adapted to suit the requirements of multi-grade classrooms. In a handbook based on studies conducted in Australia, Bolivia, Burkina Faso, China, Korea, France, Greece, Lesotho, Mali, the Philippines, Portugal, Tanzania, Russia, and Zaire (now Democratic Republic of Congo), Mathot (2001:53) states that “teachers also need to be aware of the resources that are available in the surrounding community, which are of course dependent on the local situation.” For instance, community members can assist by teaching life skills.

Elderly community members can help with history research. Community members' expertise can come in handy in art, baking, tailoring, agriculture, craftwork, and knitting. Parents can help learners with traditional dancing, singing, and certain subjects.

In a study conducted in Namibian schools, Beukes (2006:58) argues that school textbooks require attention because they are written with the assumption of teacher-led lessons. Msimanga (2014), in a study conducted in South Africa, found that the textbooks used in multi-grade classrooms are meant for monograde classrooms; they are developed for teachers to use them to teach, and not for learners to use them on their own. On the other hand, in another South African study Taole and Mncube (2012:160) posit that the same textbooks used by learners in monograde classrooms should also be used in multi-grade classrooms. To summarise the discussion on textbooks: it is necessary that resources specifically meant for multi-grade classrooms be developed, while other existing resources should be creatively adapted to suit multi-grade classrooms. In addition to the issue of textbooks, Mathot (2001:40) states that the internet and other information and communication technology (ICT) resources available at schools should enable these schools to network effectively. Here, for example, ICT can assist in obtaining information not found in textbooks.

The Department of Basic Education (2010:4) states that "many exemplary teachers in multi-grade classrooms actively work towards establishing a compelling culture of teaching and learning through well-organised classrooms that include workstations or corners, charts, pictures, books and evidence of the learners' work." Innovative classroom organisation contributes towards effective teaching and learning. A library corner, for instance, could serve as a workstation that occupies some learners while the teacher focuses on other learners. Workstations could also help to ensure that some learners are kept busy while the teacher is engaged in teaching one of the other grades.

Jordaan (2006:42) concurs that "in order to manage multi-grade classrooms, teachers must have good classroom management strategies to use multi-level activities, learning centres or workstations." Multi-level workstations are strategies for arranging and organising instructional resources and the physical setting of the classroom. Workstations are organised areas within a classroom that provide resources for a variety of tasks. Workstations can focus on a specific subject, topic, or theme.

The Department of Basic Education (2010), Mathot (2001:47) and Vincent (1999) all agree that multi-grade classrooms must have activity centres where materials linked to a particular topic or theme, are displayed. Such centres, according to

Jordaan (2006) and Mathot (2001), should be located in the corners of the classrooms, where they will not be in the way of other activities. Also, from a study conducted in Pakistan, Nawab and Baig (2011:170) posit that seating arrangements are key for multi-grade classrooms and has an impact on the use of the chalkboard. They also suggest that teachers should think of creative ways to display the learners' tasks, such as displaying them on big pieces of cloth pasted on an entire wall or displaying learners' work in separate folders made from local materials. Therefore, activity centres and creative displays of learners' academic and creative efforts are excellent examples of how the physical environment can be enhanced in multi-grade classrooms.

Mathot (2001:53) postulates that multi-grade teaching requires additional learning materials because learners often need to work independently. However, Fyfe (2001:9) asserts that in multi-grade classrooms learners collaborate with one another in the use of available resources and completing tasks. Joubert (2010:60) proposes that instructional resources and the physical environment should be arranged and organised to facilitate student learning. Based on these assertions, it appears that multi-grade classrooms should have a variety of well-arranged and well-organised resources for learners to share. In addition to this, Sağ (2009) suggests that learners in multi-grade classrooms should participate in the preparation of materials and equipment, such as charts, wordbooks, reading mats, library corners, and counting stands.

Summarily, Jordaan (2006) and Newby et al. (1998 in Drinkwater, 2002) highlight multiple ways of using resources in classrooms and the various benefits of doing so. Jordaan (2006) also states that multi-grade classroom teachers must possess good classroom management strategies to effectively manage activity centres. Various authors (Gower, 2010; Little, 2004; Taole & Mncube, 2012; UNESCO, 1989) highlight that the success of multi-grade classrooms depends on how resources support a multi-grade setup that incorporates both individual and group-based learning. Brown (2010b) indicates that resources developed must support independent learning. In this regard, Beukes (2006), Msimanga (2014), and Taole and Mncube (2012) raise the issue of school textbooks that are developed for teachers to teach from, even though in multi-grade classrooms learners are sometimes expected to learn independently.

In addition to educational resources, classroom organisation also plays an important role, as Joubert (2010) suggests that a well-organised multi-grade classroom can lead to a compelling culture of teaching and learning a point echoed in *Rural Education* (Department of Basic Education, 2010). Classroom organisation also includes seating arrangements, which, as pointed out by Nawab and

Baig (2011), is crucial in multi-grade classrooms as it affects the usage of the chalkboard. The use of local resources and ICT should also be better understood. Mathot (2001) stresses the importance of using local resources such as community members and ICT to enhance multi-grade teaching. Based on the preceding discussions from various related studies, my study on multi-grade classrooms at selected farm schools examined how teachers in multi-grade classrooms manage and use the resources in their classrooms. The study was conducted in the Thabo Mofutsanyana Education District, in the Free State Province of South Africa.

Theoretical Framework

The theoretical framework that informed this study was the Montessori educational theory. According to Schilling (2011:2) the Montessori educational theory is named after its founder, Dr Maria Montessori, a medical doctor and teacher. Schilling (2011:3) also avers that the Montessori educational theory is learner-centred, and although it does not have a prescribed curriculum, learners remain at the centre of education. Lillard (2008:21) adds that Montessori-developed materials are based on the developmental needs of learners, and materials are refined until they meet learners' specific needs. According to Al, Sari and Kahya (2012:1867), the main features of the Montessori educational theory are mixed-aged pupils in a classroom, whose ages range within a three-year difference. In such classrooms there are specialised educational materials which are arranged in an open and inviting way. At Montessori schools different activities take place at the same time and the uniqueness of each child in the classroom is acknowledged. A constructivist approach is followed and learners work more with materials rather than being constantly lectured by the teacher. Classrooms are arranged to allow for group learning.

Based on the foregoing, it is clear that the Montessori educational theory was the relevant theoretical framework for this study. The Montessori approach is heavily based on the use of resources to achieve learning outcomes. The classrooms house multi-age learners, with different classroom activities that occur at the same time. Hence the classroom is learner-centred and allows for cooperative learning. Certain features of the Montessori educational system (such as the widespread use of resources and the strategies for independent learning) are thus relevant to this study, which focuses on how teachers in multi-grade classrooms manage and use resources.

Research Methodology and Design

In order to answer the research questions, a qualitative research method was adopted. Leedy and Ormrod (2005:94) state that "qualitative research is

used to answer questions about the complex nature of phenomena with the purpose of describing and understanding the phenomena from the participants' point of view." Consequently, a qualitative research approach was deemed appropriate, because the participants were expected to share their views on their current practices and how they could be improved. A qualitative research approach was employed because the nature of the desired data required a reflection on the research questions and a response based on actual experience.

Sampling

Tustin, Lighthelm, Martins and Van Wyk (2005:346) state that with purposive sampling, participants are intentionally selected with a specific purpose or objective in mind. Purposive sampling was employed because I identified the information-rich interviewees who could share insights about the purpose of the study, i.e. managing resources and its actual use by the practitioners themselves. I worked at the schools as a subject advisor and knew the abilities of the participants with regard to teaching in multi-grade classrooms. Therefore, I selected the participants based on their understanding of multi-grade classrooms, and on convenience, because the participants were known. The participants were teachers at farm schools in the Harrismith and Warden areas in South Africa. Nine participants were engaged in the study, based on their experience in multi-grade classrooms. They included three teachers who taught at single-teacher schools (Grades 1 to 6); three teachers at schools with more than one teacher (Grade 1 to Grade 6 or Grade 9) and three school principals (Grades 1 to 9). The inclusion of different categories of participants was not based on the roles they played at the schools, but as teachers in multi-grade classrooms. The purpose was to obtain the voices of the different categories of multi-grade classroom teachers.

Data Collection

Face-to-face interviews, using basic questions, were conducted with the participants at their places of work. Face-to-face interviews involved asking participants a series of questions in person (Tustin et al., 2005:145). I arranged suitable dates and times to conduct the interviews. The interviews were audio-recorded, and notes were taken during the interviews. I asked the following questions: What are the available resources in your multi-grade classroom? How are the available resources managed and used in your multi-grade classroom? Do you have activity centres in your classroom? Do learners have textbooks? Which ICT resources do you have and how do you use them? What can be done to use the available resources more effectively in multi-grade classrooms? Follow-up questions were asked, based on the participants' responses.

Data Analysis

The interviews were transcribed, after which I reviewed the transcriptions, examined the responses thoroughly, and noted all thoughts that came to mind. Similar themes were grouped and the main themes and distinctive themes were identified. The themes were clustered and links and groupings were determined. The information from the separate groups was gathered in one place. The meaning of each category was determined in relation to the research questions.

Ethical Considerations

Permission to conduct the research was requested from the Director for Strategic Planning and Research Directorate of the Free State Department of Education, and the principals and teachers of the participating schools. Ethical clearance was also obtained from the University of South Africa's College of Education Research Ethics Committee. The participants were given the assurance of anonymity and confidentiality and were reminded that their participation was voluntary. The participants were also informed that they were free to withdraw at any stage and that they could choose not to answer any questions that they did not feel comfortable with.

Dependability and Confirmability of the Research

According to Korstjens and Moser (2018:122) dependability refers to the consistency of the findings and checking whether the analytical process is aligned with accepted standards for a particular design. With regard to confirmability, Korstjens and Moser (2018:122) state that it refers to the neutrality in data interpretation and the interpretation of data that is untainted by the researcher's preferences and viewpoints. This research followed a planned process. I made notes and used audio-tapes to record the data and stored them safely. I ensured that the findings of the study reflected the realities about managing and using resources in multi-grade classrooms by interviewing different groups of relevant participants. The findings of the study are supported by data and relevant literature. The participants were provided with the transcribed data to verify. I was mindful to guard against own bias when constructing and analysing the data. I preserved the notes and all the collected data for auditing by an independent person.

Research Findings and Discussions

The research findings discussed below are supported by South African and international literature. Based on that, the findings may be relevant to other countries that employ multi-grade classrooms. The research findings and discussions regarding to managing and using resources in multi-grade classrooms are presented below.

Availability of Resources

From the study it is clear that inadequate classroom space in multi-grade classrooms leads to overcrowding. Several participants raised the matter of overcrowding. Participant 1: *"We have a problem of space, because we have more kids, more classes and less classrooms."* This finding is echoed by Ocak and Yildiz (2011) who indicate that some classrooms were overcrowded because fewer teachers were available at these schools. Physical resource challenges in multi-grade classrooms were also identified by Juvane (2005:9) and Mulryan-Kyne (2007:508).

In this study we found that textbooks in multi-graded schools were insufficient. A lack of such resources in multi-grade classrooms is attributed to the neglect of such schools.

Participant 1: *"They share, Sir. They share even if we do have textbooks, they are little, they are not enough. Most of the things we share actually."*

Participant 2: *"The other thing, the common lack of resources for the school. We are not having enough textbooks for example, computers like any other schools."*

Participant 6: *"Resources, there are scant resources in multi-grade classrooms, because these schools are characterized by neglect. There have been attempts in recent years to provide schools with resources. That is now done."* Participants 1, 2 and 6 shared the sentiments of other participants that the available resources in multi-grade classrooms were inadequate. This finding agrees somewhat with the study conducted by Du Plessis and Subramanien (2014) who state that there is a lack of resources in multi-grade classrooms. However, in this study I found that resources were available, but insufficient.

In some of these schools learners shared textbooks, but at some other schools all learners had textbooks. A major challenge that still exists is that the textbooks used are meant for monograde classrooms. Participant 1: *"I use textbooks but we don't have enough material. So I am the only person that have textbooks ... unless, if I put them in groups. The textbooks I have is for township schools."* Participant 3: *"Yes, they have textbooks but not for this school."* Participant 5: *"Of late, yes, all of them they have, which are the same in all schools."* The participants indicated that the learners had textbooks provided by the Department of Basic Education, however, the textbooks were intended for monograde classrooms. Taole and Mncube (2012:160) also highlight the situation that the textbooks meant for use in monograde classrooms are also used in multi-grade classrooms. Gower (2010) however, points out that specific learning materials and resources should be available for multi-grade classrooms. In this study I found that,

while there was an improvement in the provision of textbooks, textbooks designed for multi-grade classrooms were still not available.

According to the participants libraries and reading corners were available in their multi-grade classrooms. Participant 1: *"In classrooms each class have a reading corner."* Participant 3: *"For, reading as you can see, this is my reading corner. Yes, it is part of my library."* Participant 4: *"Yes, it is a library corner. They read when is time for reading for enjoyment, they go there."* Participant 5 on school libraries: *"Yes, I also got big one this side although we are running short of manpower, the management is not quite good."* Participant 7: *"Yes, the library is there."* The libraries were often used for reference purposes when the learners prepared their assignments. The reading corners in the classrooms were used as mini-libraries. Different reading materials were kept in the reading corners. This finding supports the guidelines of the Department of Basic Education (2010:4) that teachers must "actively work towards establishing a compelling culture of teaching and learning through well-organised classrooms that include workstations or corners." Some of the books in the library used for references purposes were donated by farm owners, as mentioned by Participant 9: *"We have old books donated by the farmer."* The libraries at schools where Participants 4, 5, and 9 taught all had old books donated by farm owners, which were useful for reference purposes. I found that multi-grade teachers were very creative in establishing and obtaining resources for the mini-libraries in their classrooms.

Some multi-grade schools had unused computers, while other schools did not have computers at all. At one school the teachers used the principal's laptop. Participant 1: *"No. We do have computers but since we don't have the space, they haven't been installed them for being used."* Participant 2: *"The principal is having a laptop, I am having access to it."* Participant 3: *"If I can have a computer and a photocopy, it will be better, it will minimise paperwork."* Participant 7: *"No, they are only used for admin."* As inferred from the quotes above, some schools had uninstalled computers, which were of no use, while others were only used for administration and by the school principal. Nevertheless, at some schools teachers had access to laptops. Teachers also expressed a need for computers and photocopiers to minimise their paperwork. Mathot (2001:40) highlights the need for ICT resources in multi-grade classrooms. The findings from this study show that some multi-grade schools have desktop computers or laptops, but the problem is the effective use of such resources. Some schools are in dire need of computers and photocopiers to enhance teaching and learning in multi-grade classrooms.

This study shows that some progress has been made with regard to the availability of resources as some schools have been provided with science kits. Three schools had science kits provided by the Provincial Department of Education, which enabled learners to do experiments in Natural Science. The availability of science kits in multi-grade classrooms indicates an improvement in the availability of resources. This is encouraging because, as Mathot (2001) argues, materials are needed in multi-grade classrooms to allow learners to learn independently.

Managing the Use of Resources in Multi-Grade Classrooms

Learners in multi-grade classrooms share resources. When asked how the available resources were being used, Participant 1 remarked as follows: *"They share, Sir, they share. Even if we do have textbooks, they are little, they are not enough. So they share. That is why we encourage group working, so that they work in groups so that the resources we have can be enough for all of them when they share. Most of the things we share actually."* The other participants remarked the same on sharing resources, which is congruent with Fyfe's (2001:9) assertions that in multi-grade classrooms learners collaborate in the use of available resources. Participant 2: *"They are sharing the resources. Yes, even some of the resources are written for the grades. Grade six or grade four but I can use that resource for grade six for all the grades."* Thus, in some cases, resources meant for a particular grade were being used for other grades as well. Participant 5 concurred with Little (2004:16) that resources were the pillars of multi-grade teaching. The participant further stated that learners knew that they had to take care of the shared resources. Furthermore, multi-grade teachers often used personal resources for teaching purposes. Participant 2: *"The principal is having a laptop, I am having access to it."* Participant 4: *"No, I use my own [laptop]. I let them search for information."* It appears to be common practice that multi-grade teachers use their personal resources to complete or enhance their work. This was the case for Participants 1, 4 and 9 who indicated that they used their personal laptops and internet to conduct their schoolwork. Other participants said that they used their smartphones to access the internet and personally covered the costs thereof. The teachers used their own resources to ensure that their schools had access to the internet and e-mail. Smartphones, especially, play an important part in multi-grade classrooms. An obvious need exists for teachers in multi-grade classrooms to be provided with all the necessary ICT resources, including access to internet. This is corroborated by Mathot (2001) who states that multi-grade schools must have access to ICT in order to

improve how things are done in such schools. It is not fair that teachers should be expected to use their personal resources in carrying out their work.

The participants reportedly used different kinds of resources to cater for different learning styles. Participant 1: *“So, it goes with the period. In English we allow them to use the magazines so that they create their own stories.”* Participant 8: *“I use different resources like pictures, shapes and they touch.”* Newby et al. (1998 in Drinkwater, 2002:75) state that learners should be allowed to experience the materials through various senses. In line with the views of Newby et al. (1998 in Drinkwater, 2002:75), the participants demonstrated how different resources could be used in different subjects. For example, magazines, pictures, and charts cater for visual learners. Physical shapes, science kits, and measuring scales cater for kinaesthetic learners. Participant 9 said that she used a computer during natural science and technology classes. When she taught lessons about herbivores and carnivores, learners used a computer to access information about the differences between herbivores and carnivores. The internet helped learners with case studies used in life orientation. These examples emphasise the need for computers, internet access and e-mail in multi-graded schools. Charts and pictures were used in life orientation and English lessons to enhance the learners’ understanding by representing information visually and serving as a memory aid. Participant 3 said that they used a world map to teach social sciences to different grades. In natural sciences charts were used to teach learners about different types of cells. These findings reveal that teaching and learning is enhanced through the use of resources such as charts, pictures, and world maps. Participants used globes provided by the schools to discuss the continents during social sciences lessons. One participant highlighted the use of the abacus in lower grades for counting in mathematics. The participant indicated that the abacus was even used by higher grade learners who experienced difficulty in counting and needed practice.

Activity centres were frequently used in multi-grade classrooms. The Department of Basic Education (2010:4) and Vincent (1999:1) recommend that multi-grade classrooms have activity centres. In this vein the participants indicated that different areas in their classrooms were used for different activities. Regarding the issue of classroom organisation, Participant 8 responded as follows: *“Firstly, I will talk about the sitting arrangement of the learners. Learners are seated in a circle in a small group where the direct attention and observation of the teacher is maximised. With this type of sitting arrangement, the learner gets the opportunity to look at the teacher directly. Two, the horseshoe. This one is for direct teaching it pays to learners’ attention. Learners have to direct the questions at*

each other. Three, mat, sometimes there is a mat. During the story telling, singing, news exchange the learners are divided according to their skills. Here, learners are grouped.” Some participants thus confirmed that their multi-grade classrooms had activity centres where different activities took place. As Jordaan (2006) and Mathot (2001) state, it is important that multi-grade classrooms are organised in a way to provide activity centres for different classroom activities. Teachers in multi-grade classrooms must ensure that they have activity centres to allow for different activities to take place at the same time. Because learners from different grades are present in the same classroom, learner activities might vary. Therefore, activity centres are essential to allow for concurrent activities to take place to eliminate some learners waiting for others to finish before they can use the activity centres.

All the classrooms visited had reading corners where learners would sit and read. Participant 1: *“We have that reading corner, but it only accommodates one learner at the time.”* The results show that all classrooms had reading corners where learners could read individually, albeit only one at a time, in some cases. Multi-grade classrooms must have reading corners to allow learners to read individually. In addition, there should be a space that can serve as the classroom library where learners can access the materials they need to learn from. All the participants indicated that the reading corners were used for independent learning. Participant 6 further stated that the learners used the reading corners to read for leisure. Leisure reading included old newspapers and magazines that the teacher had organised. After independent reading, learners often reported to the teacher individually on what they had read about. This encouraged the learners to read with understanding and retention. Learners used reading corners for individual learning and group work. These practices reflect Jordaan’s (2006) view that multi-grade classrooms must have activity centres where individual and group activities can take place.

The participants reported that libraries in multi-graded schools were seldom used. Participant 9: *“Hey, it is like there is no work for library.”* Participant 7 said that the school had a library, but that learners did not use it because of a lack of time. Participant 6 added that their library was not used because of a lack of chairs. Participant 9 also said that their school library was unused for similar reasons. These findings clearly show that the schools and the teachers underutilised some of the available resources and made excuses for their underutilisation. The underutilisation of the libraries can be overcome by heeding Mathot’s (2001) point that teachers must be aware of the resources at school and use them creatively. Teachers should therefore

develop strategies to make libraries accessible to the learners.

Limitations of the Study

Limitation of this study were that only one method of data collection was used and that the study focused on multi-grade classrooms at farm schools teaching Grades 1 to 9. In these schools, multi-grade classrooms were a way to address some of the administrative needs of the education system, and to increase access to education. However, despite the limited nature of the study, it was possible to analyse the findings and draw conclusions that were in line with other similar studies.

Conclusion

In this study I found a slight improvement in the provision of resources to multi-grade classrooms at farm schools in the Thabo Mofutsanyana Education District, in the Free State Province of South Africa. However, the insufficiency, and lack of provision of resources such as customised textbooks for multi-grade classrooms, persists. To overcome these challenges, learners are obliged to share available resources.

The study concludes that, firstly, it is important for the teachers to know what available resources they can access for use in their multi-grade classrooms. However, they should also familiarise themselves with what resources are available for multi-grade type classrooms globally, so that they can aspire to procure them.

Secondly, teachers should organise the available resources in ways that these will be easily accessible to learners, and also to facilitate their own teaching strategies.

Lastly, teachers should be able to use the available resources effectively or develop strategies on how to use existing resources optimally in their multi-grade classrooms.

The findings presented should help teachers and those with an interest in multi-grade teaching to make improvements in the availability and application of resources. It is hoped that the implementation of these findings will result in scarce resources being used optimally in multi-grade classrooms. This can only benefit the learners.

Notes

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