

Expert team theory and goal oriented rehearsal strategies for a new music ensemble: a case study

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Abstract

The purpose of this intrinsic case study was to show how Expert Team Theory can explain the application of goal orientated rehearsal strategies which were designed for this study for an ad hoc ensemble at the School of Music of the North-West University, Potchefstroom, South Africa. The case study was considered as the most suitable research method to investigate the ways in which goal-orientated rehearsal strategies influence dynamics during rehearsals of a new music ensemble, and the experiences by the members of their interaction, because this approach allowed me to investigate these strategies in a real world environment.

This study was born out of an interest in rehearsal strategies and in different ways to structure music rehearsals. The characteristics of a new music ensemble determined the use of Expert Team Theory as the theoretical basis for the design of the goal-orientated rehearsal strategies. These characteristics correspond well with that of an expert team as “a set of interdependent team members, each of whom possesses unique and expert-level knowledge, skills, and experience related to task performance, and who adapt, coordinate, and cooperate as a team, thereby producing sustainable and repeatable team functioning at superior or at least near-optimal levels of performance” (Salas *et al.*, 2006:439-440).

Based on interviews with the participants and the observations of video recordings of the rehearsals, the results show that interpreting the data through the theoretical lens of Expert Team Theory enabled me to explain the rehearsal process as a dynamic confluence of experiences created through the interaction of the ensemble members who grew through increasing cooperation and coordination to resemble an expert team. Their sense of collectiveness and their trust coupled with strong leadership allowed the success of the strategy of prebrief-performance-debrief. The ensemble developed progressively clearer shared mental models and understandings of roles and responsibilities. A clear, valued and shared vision helped them to manage and optimize performance outcomes. The findings are also interrogated in terms of cooperative learning to further explain the web-like way in which different themes developed. This led to a discussion of the limitations of this study and suggestions for further research.

Key terms

New music, Ensemble, Rehearsal strategies, Expert teams, Team adaptability and decision-making, Shared cognition, Team leadership, Collective efficacy, Cooperative learning

Opsomming

Die doel van hierdie intrinsieke gevallestudie was om uit te wys hoe Deskundige Spanteorie gebruik kan word om die toepassing van doel-georiënteerde repetisiestrategieë te beskryf wat ontwerp is vir hierdie studie in terme van 'n ad hoc ensemble by die Skool vir Musiek aan die Noordwes-Universiteit, Potchefstroom, Suid-Afrika. Die gevallestudie is beskou as die mees geskikte navorsingsmetode wat gebruik kan word om die manier te ondersoek waarop doel-georiënteerde inoefeningstrategieë 'n effek uitoefen tydens oefeninge van 'n nuwe musiekensemble, en die ervarings van die lede tydens interaksies met mekaar, want hierdie benadering het my die kans gebied om hierdie strategieë in 'n werklike-wêreldomgewing te ondersoek.

Hierdie studie het voortgevloei uit 'n belangstelling in repetisiestrategieë en die verskillende maniere waarop hierdie repetisies gestruktureer kan word. Die kenmerke van 'n nuwe musiekensemble het die gebruik van deskundige spanteorie vir die teoretiese ontwerp onderliggend aan die ontwerp doel-georiënteerde repetisiestrategieë bepaal. Hierdie kenmerke stem baie ooreen met dié van 'n deskundige span as "a set of interdependent team members, each of whom possesses unique and expert-level knowledge, skills, and experience related to task performance, and who adapt, coordinate, and cooperate as a team, thereby producing sustainable and repeatable team functioning at superior or at least near-optimal levels of performance" (Salas *et al.*, 2006:439-440).

Gebaseer op onderhoude met die deelnemers en die observasies van video-opnames van die repetisies, toon die resultate aan dat 'n interpretasie van die data deur die teoretiese lens van Deskundige Spanteorie my in staat gestel het om die repetisieproses te beskryf as 'n dinamiese samevloeiing van ervarings geskep deur die interaksie van die lede van die ensemble wat gegroei het deur toenemende samewerking en koördinering om sodoende na vore te tree as a deskundige span. Hulle ervaring van kollektiwiteit, en hulle vertrouwe gekoppel met sterk leierskap het die sukses moontlik gemaak van 'n strategie van *pre-brief-performance-debrief*. Die ensemble het toenemend 'n duideliker stel gedeelde modelle en begrip van rolle en verantwoordelikhede ontwikkel. 'n Duidelike, waarderende en gedeelde visie het

hulle gehelp om optrede-uitkomst te bestuur en te optimeer. Die bevindinge is ook ondersoek in terme van samewerkende leer om meer uitdrukking te gee aan die web-agtige wyse waarop verskillende temas ontwikkel het. Dit het gelei tot 'n bespreking van die beperkinge van hierdie studie, en voorstelle vir verdere navorsing.

Sleuteltermes

Nuwe musiek, repetisie-strategieë, ensemble, deskundige spanne, spanaanpasbaarheid en besluitneming, gedeelde kognisie, spanleierskap, kollektiewe effektiwiteit, samewerkende leer.

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Chapter 1: Introduction

In this chapter I describe the context of the study and its design. The chapter concludes with a discussion of the composition that stood at the centre of the investigation.

1.1 Introduction

Composing and performing new music are two of the many professional activities of musicians that shape the roles that music plays in society. In South Africa, however, opportunities for the performance of new music are few and far between in spite of the fact that the performance of new music can have positive influences on many other aspects of the music world. It is important, for example, in the learning process of composers that their works be performed and that they have the ability to work with and more specifically talk to performers about the reality of performing the compositions that they wrote. Working with musicians also inspires composers to compose, and it fuels their imagination to think beyond what they might previously have thought possible (Tower, 1999: 59; Danielpour, 1999: 217; Ran, 1999: 120). Steve Reich (2002: 80) mentioned that

...if you know and work with musicians you will see that what gives them joy is playing music they love, or at least find musically interesting and whether that music is improvised or completely worked out is really not the main issue. The main issue is what's happening musically; is this beautiful, is this sending chills up and down my spine or isn't it?

It is also important for composers to know that the music they are writing is going to be performed, because this motivates composers to create (Godfrey, 1999: 103; Ran, 1999:199). Tower (1999:58) writes:

But what's much more important is that the music gets played. That means musicians like it, and they're picking it up, and that gives me a kind of inner fuel.

Furthermore, when more new music is performed, more work and exposure for composers are created and this can possibly lead to more compositions. When more compositions are being written, more innovations can be made in music which may lead to a greater exploration of the roles that music can play in society.

A greater number of performances of new music affect not only composers and the roles of music in general. The increase in the number of performances can also have positive effects on performing musicians and their instruments. Composers sometimes challenge performers to push their instruments and their technique to the very limit of what that instrument can do and even ask for new sounds and tone colours within existing limits. Foss (1998: 327) describes it this way:

...in fact, the creation of a new vocabulary requires that the composer give constant attention to all performance problems in connection with his score. As a result... the flute underwent a change of personality.

When more musicians are playing more new music, musicians will learn and develop new techniques of playing their instruments and ways of approaching the music. Some of these techniques and approaches may also be very helpful when performing older music.

In addition to the advantages described above, there are many different problems that performers encounter in the performance of new music. These problems can be divided for the sake of this argument into three categories: creative, practical and logistic (see Figure 1.1). Each of these categories can be divided further into sub-categories. The creative category can be sub-divided into two sub-categories: lack of new compositions and lack of existing suitable repertoire for the ensemble (see Figure 1.2.). The practical category includes the organisation of concerts, rehearsals, the needs of performers and finding the required instruments (see Figure 1.3.). The logistical category includes, for example, support from government and private institutions, advertisement, performance venues and funding (see Figure 1. 4).

In this research I focus only on a sub-set of problems in the 'practical' category.

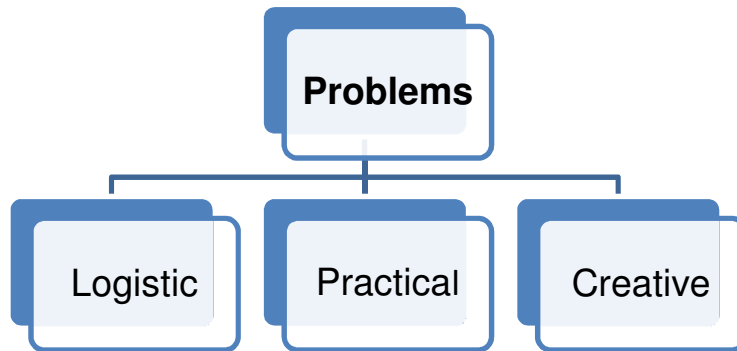


Figure 1.1: categories of problems encountered by performers

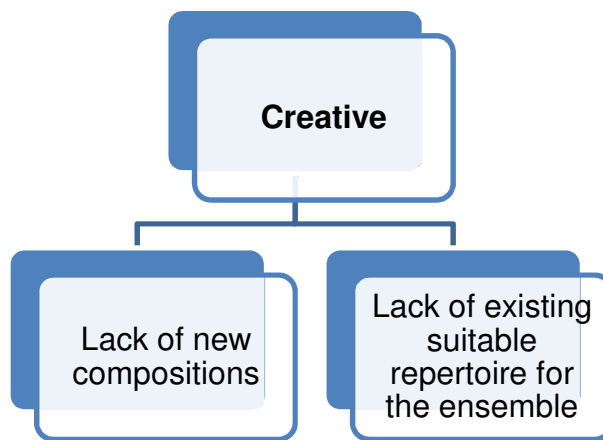


Figure 1.2: creative problems

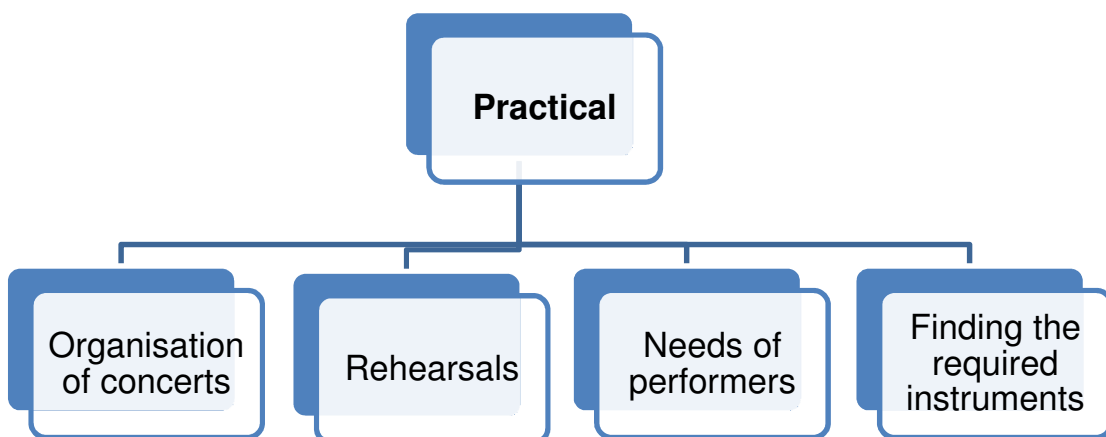


Figure 1.3: practical problems

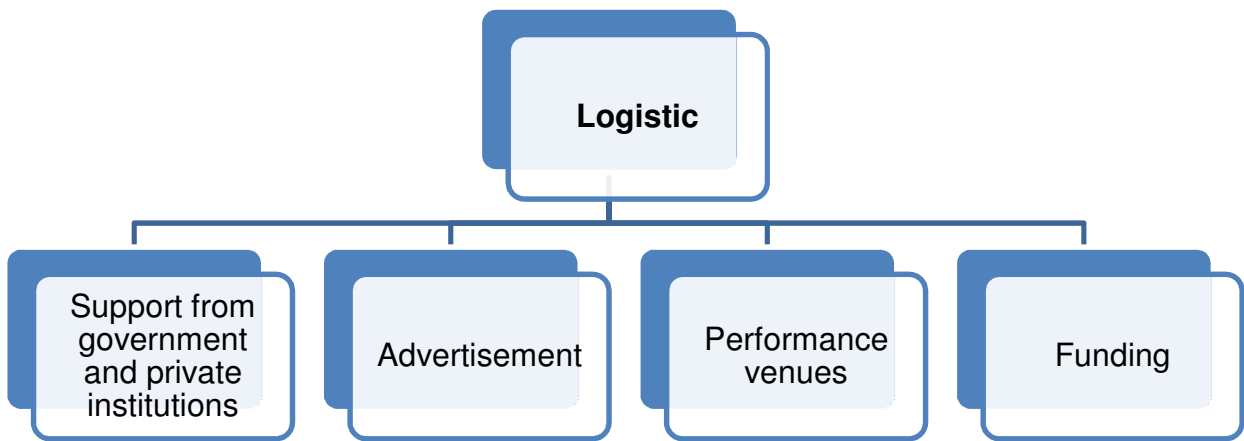


Figure 1.4: logistic problems

Added to these problems that are clearly relevant in the promotion of new music, performers face additional challenges when rehearsing new music. This includes the scheduling of rehearsal times and determining the duration of a rehearsal. These decisions have to focus on issues such as (1) the most productive time and length that an ensemble member can concentrate and work; (2) the role of and need for a conductor, which is determined by the ratio between the size of a group and the complexity of the music, and whether a group will work better with or without a conductor. However, these problems are relevant for the performance of all music, not only new music, and were therefore not included in this study.

The aspects involved in the rehearsal of new music vary somewhat from those involved in the rehearsals of older music, because the musical language of the composer of new music pieces is usually one with which the performers are not familiar and this creates additional challenges for the performers. These challenges often cause performers to be or become reluctant to perform new music. Solutions to these additional and different challenges call for special and even specialised rehearsal strategies. Some of these challenges are reading the notation used by the composer, performing extended techniques, finding examples of other works by the composer or finding and studying recordings of the piece if it is not a first performance.

Based upon this understanding of the context of my work, the focus of this research was to investigate potential rehearsal strategies that can be used by new music

ensembles to overcome these challenges, thereby contributing to the larger field within which this study is placed. Solving some of these problems can contribute to making new music more accessible to performers and thus easier to perform. This in turn might make more musicians willing to perform new music and thus increase the number of performances of new music. These considerations increase the number of performances which will lead to more exposure for composers who will in turn feel more motivated to write music. The larger number of works being written may lead to more expansion and innovation in music in general. In this way, the performance of new music can contribute to shaping the roles of music in society.

1.2 Rehearsal strategies and Expert Team Theory

Only a limited amount research has been done on the topic of rehearsal strategies. Most of the literature on rehearsal strategies is of a more self-reflexive nature, and has pedagogical aims. In the literature one finds different examples of the ways in which one can approach a rehearsal, and only a few musicians have studied rehearsals as part of research projects. Dorainne Cotter-Lockard (2012:3) studied the rehearsal strategies used by the Cavini String Quartet in order to understand the coaching of student string quartets. In another essay, *Developing musicianship from the podium: Adapting the theory of multiple intelligences to the instrumental rehearsal*, Christopher Herbert Fashun (2012:117-119) uses Gardner's Theory of Multiple Intelligences to design rehearsal strategies that will develop musicianship in students. He believes that this development will lead to more expressive music making. Berg (2008:48), applying strategies based on the concept of cognitive apprenticeship, researched the way in which a teacher can use specific rehearsal strategies to help students become more independent musicians. Berg arranged these rehearsal strategies on a continuum ranging from more to less participation by the teacher. These studies, although insightful, do not address the specific needs faced by performers in rehearsing new music. It is therefore necessary to search for alternative ways to deal with the specific challenges posed by the performance of new music. For this study, the field of Expert Team Theory was investigated in order to find potential solutions to some of the problems inherent in the performance of new music. More specifically, the application of rehearsal strategies derived from expert team theory was investigated.

Expert Team Theory is a theory that combines the “advancements within the team literature with that on individual expertise” (Salas *et al.*, 2006:440). When designing goal-orientated rehearsal strategies, I kept the characteristics of an expert team in mind. Salas *et al.* (2006:446-449) extracted a ‘snapshot’ from the literature on teams and described the characteristics of an expert team as follows:

Expert teams

- hold shared mental models;
- optimize resources by learning and adapting;
- have clear roles and responsibilities;
- have clear, valued, and shared vision;
- engage in a cycle or discipline of pre-brief → performance → debrief;
- have strong team leadership;
- develop a strong sense of "collective," trust, teamness, and confidence;
- manage and optimize performance outcomes; and
- cooperate and coordinate.

Because my study focused on the rehearsal process, I decided to base the development of rehearsal strategies on those characteristics that apply to process and thus I made use of only the following three characteristics:

- engage in a cycle or discipline of pre-brief → performance → debrief
- have strong team leadership
- manage and optimize performance outcomes

These characteristics, as identified by Salas *et al.*, have been applied in this study in order to design goal-orientated rehearsal strategies for application in this research project. The design and application of these strategies are discussed further in chapter two.

1.3 Overview of my research project

The present case study differs from existing research because it focused specifically on rehearsals of new music and employed Expert Team Theory as the basis upon which rehearsal strategies were constructed. The results of this study will be helpful for any ensemble leader and especially those working with new music. Learning to apply goal orientated rehearsal strategies formulated for this study can be useful for any ensemble and ensemble leader working in any genre.

With this study I hoped to contribute to increasing the understanding of rehearsal strategies, specifically regarding the nature of teamwork during rehearsals. This research on teamwork dealt with the effectiveness of the ensemble and their ability to work together. The focus of this study was narrowed even more to focus on goal-orientated rehearsal strategies.

The purpose of this intrinsic case study was to explain how Expert Team Theory can inform the design of goal-orientated rehearsal strategies for all members of an ad hoc ensemble at the School of Music at the North-West University. For this research, the case study was considered as the most suitable research method to investigate the ways in which goal orientated rehearsal strategies influence the dynamics during rehearsals of a new music ensemble and the experiences of the ensemble members. The research question that guides this enquiry was:

How can the application of Expert Team Theory to the design of goal-orientated rehearsal strategies be explained?

The following sub-questions flowed from this central question.

- How can relevant strategies described in Expert Team Theory be made applicable to the development of goal orientated rehearsal strategies for a new music ensemble?
- What are the dynamics within the ensemble when these selected strategies are applied?

- What are the experiences of the ensemble members regarding the interaction of the ensemble and the dynamics that were observed when Expert Team Theory was applied?

Eleven Echoes of Autumn, 1965 – George Crumb

The following criteria were employed to choose an appropriate composition for this study: the size of the ensemble, the instrumentation of the composition and the nature of the musical language of the composer.

To fit into the design of this research project, the size of the ensemble that the composition required had to be suitable: not too small, because then the effective testing of the rehearsal strategies would have been impossible. But the ensemble could not be too large either: the more people involved in a project, the more difficult it becomes logistically. Although two people playing together is also technically considered to be chamber music, the aspects involved in rehearsing a duet varies greatly from that involved in larger chamber music ensembles and thus the minimum size would have to be three people. Keeping all this in mind, a work for four players was chosen.

The piece of music that was decided upon is *Eleven Echoes of Autumn* by George Crumb. The ensemble that it requires is violin, alto flute, clarinet and piano. In choosing this work it was important firstly that one of the instruments in the ensemble had to be the instrument that the researcher played and secondly that it was possible to find players of the other instruments who would be able and motivated to participate in the study.

The last factor that influenced the decision of which composition to use is that of the musical language of the composer. The musical language of George Crumb is one that gives the ensemble many different aspects to pay attention to, and musical challenges to overcome. Performing *Eleven Echoes of Autumn* created an ideal context in which the experience of the interactions and group dynamics of the ensemble when using these rehearsal strategies could be observed.

In the next section the programme notes for the piece are given and then each echo is briefly discussed, by giving the instrumentation of the echo, what happens in the echo and the time the ensemble involved in this study took to perform it.

The following programme notes were written by George Crumb for the CRI recording by the Aeolian Chamber Players and can be found in the score of *Eleven Echoes of Autumn*.

Eleven Echoes of Autumn, 1966 was composed during the spring of 1966 for the Aeolian chamber players (on commission from Bowdoin College). The eleven pieces constituting the work are performed without interruption:

- Echo 1. Fantastico
- Echo 2. Languidamente, quasi lontano ("hauntingly")
- Echo 3. Prestissimo
- Echo 4. Con bravura
- Echo 5. Cadenza I (for Alto Flute)
- Echo 6. Cadenza II (for Violin)
- Echo 7. Cadenza III (for Clarinet)
- Echo 8. Feroce, violento
- Echo 9. Serenamente, quasi lontano ("hauntingly")
- Echo 10. Senza misura ("gently undulating")
- Echo 11. Adagio ("like a prayer")

Each of the echi exploits certain timbral possibilities of the instruments. For example, echo 1 (for piano alone) is based entirely on the 5th partial harmonic, echo 2 on violin harmonics in combination with 7th partial harmonics produced on the piano (by drawing a piece of hard rubber along the strings). A delicate aura of sympathetic vibrations emerges in echi 3 and 4, produced in the latter case by alto flute and clarinet playing into the piano strings. At the conclusion of the work the violinist achieves a mournful, fragile timbre by playing with the bow hair completely slack.

The most important generative element of *Eleven Echoes* is the "bell motif" - a quintuplet figure based on the whole-tone interval - which is heard at the beginning of the work. This diatonic figure appears in a variety of rhythmic guises, and frequently in a highly chromatic context.

Each of the eleven pieces has its own expressive character, at times overlaid by quasi-obbligato music of contrasting character, e.g., the "wind music" of the alto flute and clarinet in echo 2 or the "distant mandolin music" of the violin in echo 3. The larger expressive curve of the work is arch-like: a gradual growth of intensity to a climactic point (eco 8) followed by a gradual collapse.

Although *Eleven Echoes* has certain programmatic implications for the composer, it is enough for the listener to infer the significance of the motto-quote from Federico Garcia Lorca: "... y los arcos rotos donde sufre el tiempo" ("... and the broken arches where time suffers"). These words are softly intoned as a preface to each of the three cadenzas (echi 5 - 7) and the image "broken arches" is represented visually in the notation of the music which underlies the cadenzas." (Crumb, 1966, Foreword)

Echo 1: Fantastico

The piano is the only instrument playing in this echo and it is 1 minute, 10 seconds¹ in length. Usually this echo has no ensemble problems or concerns, but because of the pianist's short stature and the construction of the piano I (the flautist in the ensemble) had to help her out and this led to additional challenges in this echo.

Eco 2: Languidamente, quasi lontano ("hauntingly")

All the instruments play in echo 2. The violin and piano play the entire echo with the flute and clarinet playing in the middle of it. This echo is 1 minute, 14 seconds in length and is led by the violinist. For this reason the whole ensemble had to listen to her and adjust their playing to her. The most difficult part of this echo is, however, between the flute and the clarinet, because they have musical phrases that interact with each other.

¹ Lengths of echoes are given according to the performance of the ensemble included as a recording made at the end of the study.

The musical score for 'Echo 2' (Crumb, 1966:3) is a complex piece for Violin, Piano, Alto Flute, and Clarinet. The Violin part is marked *ppp* (*espr.*) and features a melodic line with *sul A* and *sul D* sections. The Piano part is marked *(sempre sim.)* and *ppp*. The Alto Flute and Clarinet parts are highly rhythmic and complex, with markings like *quasi unvoiced/breathily*, *rapidiss. (fuggevale)*, and *lenlamente! espr.*. There are also performance instructions like *Quasi obbligato wind music* and *wind music*.

Figure 1.5: Echo 2 (Crumb, 1966:3)

Echo 3: Prestissimo

This echo takes 1 minute, 18 seconds to play and all the instruments are involved. The flute, clarinet and piano play conversation-like material, changing from one instrument to the next and the violin plays unrelated material that Crumb referred to as “distant mandolin music”. The difficulties in this echo arose between the flute, clarinet and the piano – the violin plays a theme that is disconnected from the other instruments. Even though all the echoes have metronome markings, this is the only echo that has a pulse. To get the feeling of a pulse was the biggest challenge with this echo. The normal approach to pulse is not possible in this echo, because there are sections in the echo where nobody is playing the pulse and no indication of how many beats are in those sections.

Figure 1.7: Echo 4 (Crumb, 1966:5)

In the cadenza one instrument plays a solo passage and two instruments play an accompaniment to the solo instrument. The difficulty in all of the cadenza echoes lay in the accompaniment. The difficulty was not between the accompaniment and the solo instrument, but between the two players involved with the accompaniment.

Echo 7: Cadenza III

The last cadenza is a clarinet solo with accompaniment by the flute and piano and lasted 1 minute and 11 seconds. At the end of the echo the piano builds tension and excitement for the bridge into echo eight.

Echo 8: Feroce, violento

This echo is the climax of the piece; the top of the arch as Crumb explains. All the instruments are involved – playing more violently than in the first part of the piece. This echo lasts 1 minute and 23 seconds. This is the most difficult echo of the set not only in terms of ensemble playing, but in most cases also in terms of technical challenges. The difficulty was mostly between the violin, flute and clarinet. The piano had fairly simple and clear interactions with the other instruments. In this echo the ensemble had a few passages where they had to play isorhythmically. The problem here was to establish some sort of beat in which the players could place these rhythms – the ensemble had to make use of non-verbal communication and mostly body language to establish a beat.

The image shows a page of a musical score for Echo 8, titled "Feroce, violento". The score is written for a large ensemble, including strings, woodwinds, and piano. It features complex rhythmic patterns, including triplets and sixteenth-note runs. Performance instructions include "fff sempre" (fortissimo, always), "meno f" (meno forte), "sub." (subito), "accel." (accelerando), and "rit." (ritardando). A specific instruction "(bell in the air!)" is written above a section of the string part. The score concludes with a "V." (Vivace) section for the piano, marked "fff acuto".

Figure 1.9: Echo 8 (Crumb: 1966,8)

Echo 9: Serenamente, quasi lontano ("hauntingly")

All the instruments play in echo 9 and the music is calming down now and is 3 minutes and 1 second in length. The ensemble playing in echo 9 was very easy again. The structure of the echo was basically: chorus, verse, chorus, verse, and chorus – with the violin playing the choruses, the flute the first verse and clarinet the second. Thus the instrumentalists only had to wait for the other to complete their part before starting theirs. The pianist played throughout this echo and had to follow the other instrumentalists.

Echo 10: Senza misura ("gently undulating")

All the instruments are still involved in this echo and the atmosphere is very calm, lasting 1 minute and 5 seconds. In this echo there were moments of slightly more difficult ensemble playing. The first was where the clarinet started a pattern, the flute entered after that with a pattern that should be played slower than that of the clarinet. The violin entered after the flute and had to play a pattern a little bit slower than the flute pattern. The next part that needed some practice to get together was at the end of the echo where that clarinet played a pattern and the flute needed to fit triplets and quintuples onto that pattern.

Eco 10. Senza misura (gently undulating) *eguale, senza espr. col legno tratto -*

Violin

Alto Flute (seated)

Clarinet (seated)

ghost tones? blow gently without voicing

quasi niente

quasi niente (legatissimo)

3

bow behind left hand, near pin (G#)

Fingering (place left hand over fingerboard)

Figure 1.10: Echo 10 (Crumb, 1966:10)

Echo 11: Adagio ("like a prayer")

In the last echo only the violin and the piano are involved and the piece ends with the piano. The entire echo is very quiet and calm and is 1 minute and 27 seconds. Echo 11 was very easy to put together with a very simple interchange between the violin and the piano.

1.5 Procedures

In this study a deductive approach was used. Deductive theory is the process by which the literature is studied and a theory is derived. In order to test an existing theory in a real life situation, a case study was used. The data from the case study were then inductively analysed by use of the theory taken from the literature (see Rule & John, 2011: 96-99). In this study Expert Team Theory and more specifically goal orientation in Expert Team Theory was used. This theory was applied to the rehearsals of a new music ensemble and then used to interpret the data.

A qualitative research design was used: the research took place in a natural environment, the researcher collected the data and the participants' points of view were central to the study. In this case study, the researcher had multiple roles – the designer of the strategies, leader of the rehearsals, observer and interviewer. Data were collected by means of observation of video recordings and interviews where the participants' reaction to the strategies and the group dynamics involved were observed and the interviews coded. The validation strategies were member checking and peer review and the study was approved by the ethics committee of the NWU. For this reason, the rehearsals followed a predetermined pattern and the participants signed a consent form.

Chapter 2 is a review of the very limited literature available on the topic of this investigation. This review includes the rehearsal process, rehearsal strategies, Expert Team Theory and the goal orientated rehearsal strategies that were applied during rehearsals. The discussion of the goal-orientated rehearsal strategies includes the method of design and how the literature supports these strategies.

Chapter 2: Literature review

In this chapter I give an overview of the literature that informed this study. As mentioned in the previous chapter, very little literature on this topic is available. My review proceeds in four stages. Firstly, I discuss the existing literature on rehearsal processes and more specifically on rehearsal strategies. Secondly, I discuss selected literature on Expert Team Theory. Thirdly I make a comparison between an expert team and a new music ensemble. Then, fourthly, I focus on the goal-oriented rehearsal strategies used in this study.

2.1 Rehearsal process

When using the term *rehearsal process* one refers in a broader sense to all that is involved in a rehearsal. The rehearsal process includes aspects that take place before and during the rehearsal. Some of the aspects that take place before the start of the rehearsal are: deciding on the repertoire that one will be rehearsing; making sure everyone involved have the correct parts; organising a rehearsal venue; and confirming that everyone has the correct information in terms of rehearsal times and venues. The aspects that are involved during the rehearsal are: what repertoire the ensemble will rehearse; how much time one will spend on every piece; discipline and etiquette; whether one will make use of sectional or group practice; and then the specific rehearsal strategy/strategies that will be applied. Although all these matters are of course important for rehearsals, and even for this study, the focus of this study is only on the rehearsal strategies, and the literature is therefore not discussed in terms of the other, broader issues.

2.2 Rehearsal strategies

In reviewing the literature on rehearsal strategy it was noted that most of the literature focuses on three aspects: a specific role, a specific ensemble, and only one context of rehearsals. The specific roles are those of the conductor; the ensemble is the string quartet and the context is education. A substantial part of the literature therefore deals with the education of conductors or with string quartets. From the literature the following aspects were identified as aspects that need to be taken into account by the conductor or leader of an ensemble:

- preparing for a rehearsal (Cotter-lockard, 2012:94; Fashun, 2012:109; Ulrich, 1993:34);
- communicating the interpretation (Cotter-Lockard, 2012:96; Ulrich, 1993:35);
- planning the rehearsal (Cavitt, 2003:228; Freer, 1992:30; Ulrich, 1993:34);
- creative problem solving (Cavitt, 2003:228; Graulty, 2010:55);
- persistence in rehearsing (Berg, 2008:53; Cavitt, 2003:228; Freer, 1992:33);
- pace of the rehearsal (Cavitt, 2003:228; King, 2004:12; Ulrich, 1993:35);
- rehearsal goals (Berg, 2008:50; Ulrich, 1993:35; Worthy, 2006:60);
- verbal communication (Cavitt, 2003:228; Worthy, 2006:60);
- encouraging listening (Berg, 2008:50; Graulty, 2010:55); and
- giving feedback (Cotter-Lockard; 2012:109; Cavitt, 2003:228; Freer, 1992:30,32).

Preparing for a rehearsal is extremely important, but preparation is not limited to learning and being able to play the piece that one is about to rehearse. It is also important to do score study and have a holistic knowledge of the score (Cotter-Lockard, 2012:94; Fashun, 2012:109; Ulrich, 1993:34). The musician's or leader's ability to communicate their perception or interpretation of the score in words will not only lead to a clear vision of what the individual interpretation of the score is, but will enable the musician to share this vision with colleagues when necessary (Cotter-Lockard, 2012:96; Ulrich, 1993:35).

Although it is very important for conductors or leaders of groups to plan the rehearsal before entering the rehearsal room, it is a worth-while aspect for any musician to focus on (Cavitt, 2003:228; Freer, 1992:30; Ulrich, 1993:34). It is important to be creative during rehearsals, especially when there are problems to solve and to use different approaches to solve the same problem can have positive effects. This is also true for rehearsal strategies and leading of ensembles (Cavitt, 2003:228; Graulty, 2010:55). The literature also indicated that to effectively and successfully lead an ensemble, persistence is sometimes needed. This means that often the leader will not move on to another section until a specific section has been conquered (Berg, 2008:53; Cavitt, 2003:228; Freer, 1992:33). The pace of a rehearsal is something to which a leader and especially a conductor must pay attention. In considering the pace of the rehearsal, an ensemble leader should

always keep the ensemble in mind. The pace of a rehearsal can have an enormous effect on the attitude of the players and their level of concentration and this might determine their levels of interest during the rehearsal (Cavitt, 2003:228; King, 2004:12; Ulrich, 1993:35). As with the pace of a rehearsal, the ensemble will also determine the goals of a rehearsal. The importance of having clear goals in rehearsal is clearly stated in the literature. Whether multiple goals or a single goal is the focus in a rehearsal depends on the ensemble and conductor. Conductors tend to have single goals for less experienced ensembles and multiple goals for more experienced ones (Berg, 2008:50; Ulrich, 1993:35; Worthy, 2006:60). The aspect of verbal communication in rehearsals is one that is more applicable to conductors and the literature states that it should be kept to a minimum and be brief as possible. Even though frame analysis of video recordings of rehearsals showed that conductors tend to spend almost half of the rehearsal speaking – it was always in short instances (Cavitt, 2003:228; Worthy, 2006:60). Encouraging ensembles to listen actively to one another and to not make use of passive listening while playing, is an important aspect of conducting and rehearsing. Conductors put emphasis on this fact by asking members of the ensemble to comment on what they think might be the reason for the conductor stopping (Berg, 2008:50; Grauly, 2010:55). When giving feedback to an ensemble it is important to make use of both negative and positive feedback. There is a definitive leaning towards the use of positive feedback more than that of negative feedback. When rehearsing chamber music the use of negative feedback should be done cautiously and with great respect and a conductor should always remember to not only focus on what the ensemble is doing wrong, but also on what they are doing right (Cotter-Lockard; 2012:109; Cavitt, 2003:228; Freer, 1992:30,32).

2.3 Expert Team Theory

Expert Team Theory was designed due to curiosity and the desire to establish why some teams succeed above expectation. These teams are also referred to as dream teams – a term originally used to describe the US basketball team that won the Olympic gold medal in 1992 in Barcelona. Dream teams consist of a set of experts in their field, but the same can be said about the teams that lose to dream teams. Thus there is something more than a set of experts needed to form a dream team. The

investigation into the design of Expert Team Theory by Kleinman, Serfaty, Gersick, Ensley, Pearce, and others led to an understanding of how these teams think and do what they do. An expert team is defined as “a set of interdependent team members, each of whom possesses unique and expert-level knowledge, skills, and experience related to task performance, and who adapt, coordinate, and cooperate as a team, thereby producing sustainable and repeatable team functioning at superior or at least near-optimal levels of performance” (Salas *et al.*, 2006:439-440).

The theoretical framework that serves as the basis for the design of Expert Team Theory are: team effectiveness and teamwork, team adaptability and decision-making, shared cognition, team leadership and team affective states: collective efficacy and psychological safety (Salas *et al.*, 2006:440-441).

2.4 Comparison between an expert team and a new music ensemble

While studying Expert Team Theory, I realised that there were similarities between an expert team and a new music ensemble – referring to the definition above. Although I do not claim that the ensemble used in this study is an expert team, there are without doubt striking similarities in the nature of an expert team and some new music ensembles. Both of these groups are made up out of highly trained members where each has a specific skill-set that allows them to fulfil a certain role in the team. Taking these similarities into consideration it seemed reasonable to use Expert Team Theory and more specifically the characteristics of an expert team to develop a set of rehearsal strategies.

2.5 Goal-orientated rehearsal strategies

In the development of goal orientated rehearsal strategies that were the main tool to structure the rehearsals this study, the researcher relied primarily on the characteristic of an expert team (Appendix C) (Salas *et al.*, 2006: 447). In this table Salas *et al.* give a summary of the characteristics of expert teams and what it is that makes them who they are. From this table I chose characteristics that relate specifically to the processes observed in expert teams (as explained in chapter 1), because the focus of this study was on rehearsal process. The following three characteristics were selected.

1. Expert teams engage in a cycle or discipline of pre-brief → performance → debrief
2. They have strong team leadership
3. Expert teams manage and optimize performance outcomes.

The researcher relied on the subcategories, which further explain these characteristics, found in the table to develop the rehearsal strategies that the ensemble will follow in this study. The structure of the rehearsal was deduced from the first characteristic and thus the ensemble always followed a cycle of pre-brief – performance – debrief. The following list outlining the form of the rehearsal was given to the ensemble members at the start of this study:

A Pre-brief

- A.1. Establish / Revise team goals and plans
- A.2. Differentiate between higher and lower priorities
- A.3. Anticipate issues/ problems of members

Performance

B Debrief

- B.1. Provide feedback to each other, both individually and as a team
- B.2. Review issues/ problems of members
- B.3. Diagnose team “effectiveness” – results, process and vitality (morale, retention and energy)

By handing out a copy of this list (outlining the form of the rehearsal) to the participants they were able to follow the steps of the rehearsal process. This made the rehearsal proceed as effectively as possible without any confusion from the participants as to what was happening. It was the hope of the researcher that this list would eliminate the need to continuously focus and redirect discussions to the relevant topics.

For the effective employment of the rehearsal strategies it was important that the participants understood what was expected during each of the steps. For this

purpose the researcher gave a brief explanation as to what each step meant before starting the first rehearsal of the study.

The stage referred to as pre-brief happened before any music was played. At first the ensemble established goals and plans. Levi (2011:300) states that by setting goals the purpose of the team is clarified. For effective rehearsing to take place the entire ensemble should be 'on the same page' in terms of what it is that they want to accomplish at all times during a rehearsal. Following this approach the ensemble clarifies the goals of the team and develop specific objectives that are manageable by all involved (Levi, 2011:300). In correlation with Salas *et al.* (2006:446) who state that an expert team has the ability to differentiate between higher and lower priorities, the next step in the rehearsal process was to prioritize the previously established goals. It might be that there are too many goals to concentrate on at the same time and the ensemble needs to choose. Even if that is not the case, prioritising the goals of the ensemble will ensure that everybody knows what to focus on first and how goals interact. This aspect aligns with Butterworth's (1990:214) observation of the Detroit String Quartet: all the members shared an understanding of what they were trying to accomplish. The last step of the first stage, which Salas *et al.* (2006:446,448) consider as part of the process that expert teams use to achieve their goals, is to try and anticipate issues or problems that might arise. By doing this the ensemble is aware of potential problematic bits in the music – not only from their perspective, but also from the perspectives of other members. This aligns with one of the strategies that Cavitt (2003:228) identified in the successful elimination of errors in instrumental rehearsals: potential errors were identified before each rehearsal. It is important for the ensemble to discuss potential problems, because by understanding as much as possible about the problems beforehand, they can reduce the time spent on those problems (Levi, 2011:185).

The next stage in the rehearsal process was performance. Here 'performance' did not refer to playing a concert; it referred to 'playing through' the music. It was important that the ensemble kept the goals which they discussed in the first stage in mind.

The next stage of the rehearsal was a debriefing session. The first step in this stage was giving feedback. Hoover (2005:34-35) explains feedback as the output from a

system that one can place back into the system to improve the system. At all times during the rehearsal process the leader encouraged open and honest communication. It was important while giving feedback that all the participants be honest and say in a respectful manner what bothered or pleased them. Feedback can be ineffective when team members make use of only positive or negative feedback, but not both (Smith-Jentsch *et al.*, 2008:312). Rehearsing in this manner, and communicating in this way, the ensemble was able to progress effectively and openly. It was the hope of the researcher that when the entire ensemble accepted this method of communication, nobody would take offence to the feedback. Smith-Jentsch *et al.* (2008:312) further states that in some cases expert teams may focus only on positive feedback to keep the peace. A characteristic of successful error correction is that specific positive and negative feedback is given (Cavitt, 2003:228). This is a characteristic that is also described by West, (2012:4); “Dream teams have a high level of positivity, characterized by optimism and a healthy balance of positive and negative interactions”.

The second characteristic of an expert team that informed these rehearsal strategies is: *Expert teams have strong team leadership*. This topic is expanded upon by the authors who state that “[l]eaders of expert teams provide situation updates, foster teamwork, coordination and cooperation and self-correct first” (Salas *et al.*, 2006:448). The leader of the ensemble at all times tried to embody these aspects, but in this study it was the hope of the researcher that the leader would inspire the rest of the ensemble to also adopt these characteristics. One of these characteristic actions is providing situation updates. The importance of providing situation updates are clear in the explanation of Smith-Jentsch *et al.* (2008:309) who states that situation updates are an important part of a process called information exchange during which team members share the relevant information with the rest of their team. This allowed the entire team to see the bigger picture, and enabled them to be aware of what was happening with the other members of their team and what it was that they needed in order to be successful.

The next step in the debriefing process was reviewing any issues and problems. For effective debriefing it is important that feedback be executed by the use of open and honest communication. Here the ensemble evaluated the feedback given to see

what the cause of the problems may be and how each of the members was affected by the issue. The ensemble needs to discuss the information needed by the members involved to solve these problems. The last step in the debriefing stage happened when team effectiveness was diagnosed. This step is important, because focusing on what the team has achieved would lead to a higher level of team efficacy. Levi (2011:61) describes team efficacy as “the perception that the team is capable of performing well at a given task”, and elaborates that: “Teams that have been successful in the past have higher levels of team efficacy. Leaders who believe their team is competent create teams with higher collective efficacy. Teams with higher collective efficacy are more likely to set higher performance goals, which encourage greater performance.” A study done by Tasa, Taggar and Seijts (2007:24) revealed that collective efficacy influences the behaviour of the individual in a team. They found that when a team has a higher collective efficacy the members of the team were more likely to take part in team actions such as examining goals and improving or establishing plans. Collective efficacy, thus, motivates the members of a team to take part in team activities.

This process did not happen only once during a rehearsal. After the debriefing had been completed, the ensemble returned to the pre-brief stage. When they returned to this stage it was important for the ensemble to take the knowledge from stage 2 and 3 with them when they returned to the first stage. This way the ensemble learned from their mistakes, but also kept the situations of the other members in mind during the goal-setting process. Differentiating between higher and lower priorities and anticipating problems or issues was a much easier process the second time around as the ensemble had more knowledge upon which to base these decisions.

Chapter 3: Procedures

In this chapter the procedure that was followed in this study is outlined: the design, the approach and the method of the research. The purpose of this research was to explain how Expert Team Theory can inform the design of goal-orientated rehearsal strategies and to explain how the ensemble members experienced the group dynamics when these strategies were applied. Thus the study followed a qualitative design with an intrinsic case study as the approach. A deductive, theory-first approach to case study were used (Figure 3.1). The data were collected by doing interviews with the participants and observing video material of the rehearsals. The transcribed interviews and the observations of the rehearsal recordings were then analysed using ATLAS.ti. This chapter concludes with a consideration of validation strategies and ethics.

3.1 Research design

In the following section philosophical assumptions upon which the study was based are discussed, as well as the reasons why the study followed a qualitative design and the characteristics of qualitative research.

3.1.1 Philosophical assumptions

The design of the study was based on a certain set of philosophical assumptions. It is important for a researcher to articulate and be aware of these assumptions, because it shapes the way the research questions are formulated and how we seek the information to answer these questions. In order to get first-hand information to analyse (Creswell, 2013:18-20) I tried to get as close as possible to the participants whilst conducting my research – for this to happen it was important to study the participants in the field, in their natural environment, namely a music rehearsal. The philosophical framework of this study is embedded in the interpretative framework of social constructivism. In social constructivism the researcher aims to understand or explain the participants' experiences or views of a certain situation. These views are formed through social interaction and constructivist researchers often address the interaction among individuals. This framework (Creswell, 2013:22, 24-25) was ideal for this study as the understanding of the participants' experiences of the interaction

involved in the rehearsals when the goal-orientated rehearsal strategies were applied is one of the research questions of this study.

3.1.2 Reasons for the qualitative research design

Since this study was concerned with explaining group dynamics and group interaction when goal-orientated rehearsal strategies were applied, a qualitative design was appropriate because “[r]ather than determining cause and effect, predicting, or describing the distribution of some attribute among population, we might be interested in uncovering the meaning of a phenomenon for those involved.” (Merriam, 2009:5). The phenomenon under investigation was goal-orientated rehearsal strategies informed by Expert Team Theory and the people involved were the four ensemble members.

Merriam (2009:1) states that an interest in knowing more about and improving one’s practice can lead to asking researchable questions and that some of these questions are best approached through a qualitative research design. I have a great interest in knowing more about rehearsals and exploring different ways in which to structure music rehearsals. By gathering this knowledge I want to improve my rehearsal technique and expand my repertoire of rehearsal techniques. As the researcher in this study, my experience and history affect the entire study and thus my interest in the topic and the reasons for this interest are important. Therefore, my curiosity and need to improve my own practice led to the researchable questions in this study. These research questions determined the research design (Sims, 2012:683). In designing this study the characteristics of qualitative research were kept in mind.

3.1.3 Characteristics of qualitative research

The research design correlates well with the characteristics of qualitative research as described in Creswell’s (2013:44) definition. My study began with the theoretical framework of Expert Team Theory that informed the application of goal-orientated rehearsal strategies. Furthermore, I wanted to know how the ensemble members ascribed meaning to the group dynamics and interaction with the application of these goals orientated strategies in a new music ensemble rehearsal. The data analysis was inductive and patterns or themes were established. The final written report

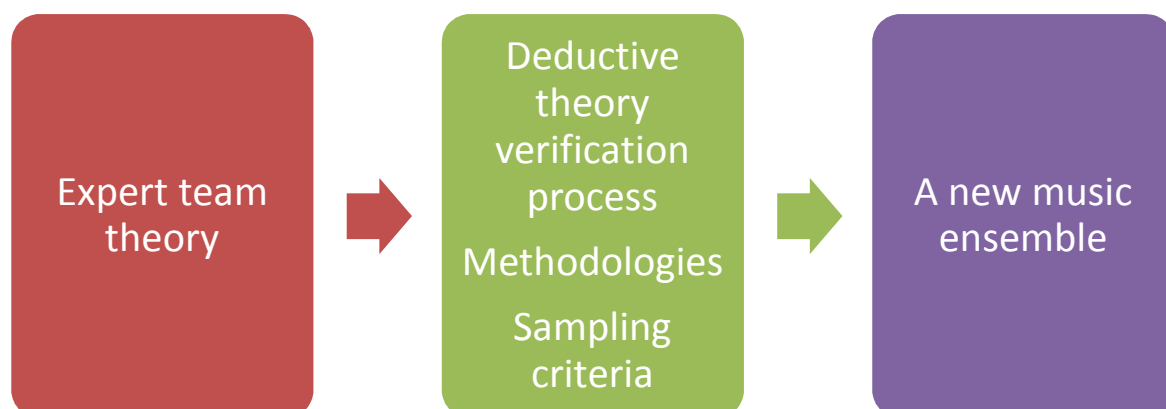
includes the voice of the ensemble players, my own reflexivity and an interpretation of the problem. I also indicated the contribution to the literature that this study will make.

3.2 Approach – Case study

I used case study research as the approach to inquiry and this allowed me to “develop an in-depth understanding of a single case” (Creswell, 2013:97) of which the focus was documenting the experiences of the ensemble members regarding their interaction and group dynamics when the rehearsal strategies were applied.

In this case study I used a deductive approach. “Deduction moves from the general to the specific” (Rule & John, 2011:96). The “general” was the Expert Team Theory that was used to create goal-orientated rehearsal strategies and the “specific” was the ensemble that rehearsed, namely *The Eleven Echoes of Autumn* by George Crumb. Although this approach is more common to quantitative research it can also be used in qualitative case studies (Rule & John, 2011:96), as I have done in this study. My study thus began with Expert Team Theory and sought to apply it in a specific new music ensemble in a specific time and place. I use this theory-first approach to explain the application of Expert Team Theory and goal orientated rehearsal strategies to a specific case.

Figure 3.1: An adaptation of Rule and John (2011:97) to represent a theory-first approach to case study



The theory-first approach has an influence on the uniqueness of the case. Stake (1995:1) states that the cases of interest are people or programs and that each one

is similar and unique in different ways and that which interests us is how cases are similar and how they are unique. The case that is the focus of this study is not only the ensemble, but also the rehearsal process of which they were part. It is this rehearsal process that makes this case unique, because of the rehearsal strategies that were employed. I determined exactly how this case was unique by outlining the differences between the rehearsal process that was studied and the ordinary rehearsal process.

In an ordinary rehearsal there are many factors that influence the form that a rehearsal might follow and some of these factors include the presence or absence of a conductor, the goal of the rehearsals and the composition of the ensemble.

One of the biggest influences on the rehearsal process of an ensemble is the presence or absence of a conductor. When a conductor is present, he/she is the leader in many different ways. He/she decides upon the rehearsal tempo, process and when what will be rehearsed, furthermore the conductor is in charge of the interpretation of the music. When a conductor is not present, the rehearsal follows a different process with everyone in the ensemble involved in making decisions. Since this was a small ensemble of four players no conductor was necessary. When an ensemble rehearses without a conductor the rehearsal process is decided upon by the entire ensemble, decisions include: tempi, problem-solving and when to practise what. If the composition of an ensemble is a mixture of students and teachers or if the ensemble rehearsal is for educational purposes the majority of the decisions will be made by the teacher and the students will mostly say very little in terms of interpretation or process. In this study it was not a mixture of teachers and their students, and members thus shared more equal roles.

Even though the ensemble constituted almost equal members, the rehearsal strategies involved in this study shaped the role of the researcher to some extent into that of an ensemble leader. Although the use of predetermined rehearsal strategies sounds like a more confined and rigged rehearsal process, the strategies were designed to increase the role of group discussions during the rehearsal. During the application of these strategies it was important for the researcher that the participants always felt safe to communicate and voice their opinions. This made it possible for the researcher to more successfully document the interactions of the

ensemble. To document the interactions the strategies were applied in the rehearsal process of one ensemble's preparation of one chamber music work and thus an intrinsic case study was used for this study (Stake, 1995:3).

This case study was bounded by time, place and activity (Creswell, 2013:97, Yin, 2014:33-34) as follows:

Time: The rehearsal period included four rehearsals that lasted for two hours each, a dress rehearsal of one hour in preparation for the concert and the concert. The activities all took place within a time span of three weeks. The first rehearsal took place on the 15th of July 2014 and the concert on the 4th of August.

Place: All the rehearsals and the concert took place in the NWU School of Music concert hall.

Activity: In these rehearsals the ensemble rehearsed *Eleven Echoes of Autumn, 1965* by George Crumb. As discussed in detail in Chapter 2 the rehearsal process included the following three steps, further limiting the activities that were studied: pre-brief, performance and debrief.

Not only was this case bounded by time, place and activity, but also the number of participants was finite and therefore the case was "intrinsically bounded" (Merriam, 2009:41). In this case study one ensemble was the unit of analysis (Merriam, 2009:42).

The rehearsal plan that the researcher used to make sure the ensemble worked constructively and that the entire piece is rehearsed is as follows:

Cycle is used to refer to a prebrief – performance – debrief. The section of music that named with the cycle is that what is used in the performance slot. It is possible for an entire cycle to be repeated more than once in a time slot. The time provided is only a suggestion, but it would be wise for the ensemble to try and keep a close to it as possible.

Rehearsal 1 (120 min)

- Introduction (10 min)
- Pre-brief (10 min)
- First work through “Eleven echoes of Autumn” (30 min)
 - The aim is for the ensemble to get through the entire piece no matter what happens – this is an exploratory work-through
- Debrief (10 min)
- Break (10 min)
- Pre-brief (10 min)
- Second work-through (30 min)
 - Again the aim is to get through the piece – still exploring
 - Concentrating on what has been said about the first work-through
- Debrief (10 min)

After the first rehearsal it was clear that the ensemble did not need to take a break during a two hour rehearsal.

Rehearsal 2 (120 min)

- Introduction (5 min)
- Cycle with echoes 1 – 6 (15 min)
- Cycle with echo 1 and 2 (10 min)
 - These two echoes were rehearsed together, because the ensemble isn't very difficult and thus less time was needed to be spent on them. Initially echo 1 would not have needed any rehearsal time, but because I had to help the pianist play this echo this changed.
- Cycle with echo 3 (15 min)
- Cycle with echo 4 (15 min)
- Cycle with echo 5 (20 min)
 - First rehearse the accompaniment of the cadenza without the solo part.
 - After the accompaniment is correct do the cadenza again with the solo instrument.
- Cycle with echo 6 (20 min)
 - Follow the same procedure as with echo 5
- Cycle with echoes 1 – 6 (15 min)

Rehearsal 3 (120 min)

- Introduction (5 min)
- Cycle with echoes 7 – 11 (15 min)
- Cycle with echo 7 (20 min)
 - Follow the same procedure as with echo 5
- Cycle with echo 8 (20 min)
- Cycle with echo 9 (20 min)
- Cycle with echo 10 (10 min)
- Cycle with echo 11 (10 min)
- Cycle with echoes 7 – 11 (15 min)

Rehearsal 4 (120 min)

- Introduction (5 min)
- Cycle with entire work (30 min)
 - Play through
- Cycle with entire work (60 min)
 - More diligent working and stopping when needed
- Cycle with entire Work (20 min)
 - Primarily a play through of the work

Rehearsal 5 (45 min)

- Introduction (5 min)
- Cycle with entire work (30 min)
 - Play through
- Identify places that need rehearsing and do cycles concentrating on those places.

3.3 Method

In the next section the following aspects concerning the method of study used are discussed: participants, role of the researcher, data collection, data analysis, validation and ethics.

3.3.1 Participants

There were four participants in this study, two males and two females: a violinist, flautist, pianist and clarinetist. The participants' ages varied between 18 and 66, and they had different musical backgrounds and experience. The sampling strategy that I used in sampling the participants for this case study was convenience sampling. This

type of sampling, where individuals are chosen according to access or the possibility of participating in the study, allowed me to compose a group of participants that suited my study and where the members possessed the necessary skills (Creswell, 2013:157-158). The rehearsing of this work was not only for research purposes – it was firstly for the performance of the piece and thus the sampling of the participants had to include people who would be able to give a successful performance.

3.3.2 Role of the researcher

Qualitative research involves the researcher as a “key instrument” in the research (Creswell, 2013:45) and in this study it was not different. The researcher fulfilled the following roles in this study: he was the designer of the rehearsal strategies, the leader of the rehearsals, part of the ensemble and the interviewer. As the designer of the rehearsal strategies the researcher had an in-depth understanding of the bases upon which these strategies were built and had great interest in the experience that the ensemble members have regarding the interaction and group dynamics when these strategies were applied. It is only a natural progression for the researcher to be the leader and applier of these strategies considering that he is the one that developed them and has interest in the experiences that followed.

When considering whether the researcher also had to form part of the ensemble there were a few aspects to consider: in order for the researcher to be the rehearsal leader he would have to either be part of the ensemble or be a conductor or outside leader. It would be unusual for an ensemble to rehearse with a conductor and not be conducted on stage and an outside rehearsal leader would also create an unnatural rehearsal environment. A small ensemble such as this one is usually not conducted, because an ensemble of this size plays more effectively without a conductor. Keeping all this in mind it was decided that the researcher would also form part of the ensemble. This would give the researcher the opportunity to apply the rehearsal strategies and lead the ensemble in the most natural way possible.

The last role that the researcher fulfilled was that of the interviewer. As the designer and implementer of the rehearsal strategies it would make very little sense for anybody else but the researcher to conduct the interviews, especially in the first study of this topic. The questions that the researcher asked during the interviews

stemmed directly from his observations during the rehearsals when the goal orientated rehearsal strategies were applied.

3.3.3 Data collection

There were two types of data collection in this study, namely interviews and observations of rehearsal videos.

Semi-structured and structured interviews

During the interview process I used semi-structured and structured interviews. For this study I did not want to ask questions that were too open-ended as I was afraid that I might not get information that was of importance for this study. By using semi-structured and structured interviews I wanted to focus the attention of the participants on the aspects of the rehearsal of which I wanted to learn more about. I decided to do a follow-up interview sometime after the study where I used more open-ended questions. This final interview was to broaden the data sample by using alternative methods of collecting the data. When asking the questions I adapted the specific wording to get the best response for the person in the interview. I used the following topics to base my questions on:

Interview after rehearsal 1

- Opinion on how they felt about voicing their opinions during the rehearsals
 - Influence that leadership and the presentation of the strategies had on their answer.
- In the first play-through of the work clear interaction was observed in the places identified in the pre-brief. The participants' opinion in terms of these interactions and the strategies were asked.
- In pre-briefing the second play-through of the work the participants spoke about how surprised they were with the success of the first play-through. Their opinions about the ensembles chances for mission success were asked.
- Step 3 of the debriefing phase involved diagnosing the effectiveness of the ensemble. The opinion about team effectiveness when these strategies were applied was obtained.

- Based on the observation of the rehearsal I asked Sam and Chris why they sometimes looked a little bored or removed themselves from the discussions – whether something was bothering them or whether they were not focused enough when discussion problems.
- I asked questions trying to ascertain how they experienced the dynamics/ interaction within the ensemble when the strategies were applied.

Interview after rehearsal 2

- I spoke about how in the first rehearsal we worked more holistically playing through the entire piece. I asked how they experienced the interactions within the ensemble.
- I spoke about how in the second rehearsal we worked on smaller bits – starting and stopping a lot more. I asked how they experienced the interaction and group dynamics in this rehearsal.
- I asked them to compare the interaction and group dynamics between the two rehearsals.
- I also asked to diagnose the teams “effectiveness” – result, process and vitality (morale, retention and energy).

Interview after rehearsal 3

- I asked them to describe the group dynamics within the last rehearsal.
 - And the influence the strategies had on their answer.
- I spoke about how the strategies have become a much more integrated part of the rehearsals and asked if they agreed.
 - Upon this comment I asked if they are still aware of a goal orientated way of working.
- Stating that we had worked through the entire piece in detail by the end of rehearsal three I asked their opinions about the ensemble’s chances of mission success.

Interview after rehearsal 4, dress rehearsal and performance

- I stated that the rehearsal strategies relied greatly on communication and then asked how they experienced the communication in the last rehearsals.
 - Next I asked how they would describe the evolution of the communication.
- Step 3 of the debriefing phase is diagnosing the effectiveness of the ensemble and thus I asked their opinion about team effectiveness when these strategies were applied in the last rehearsals.
 - I asked what their opinions were regarding the effectiveness of the ensemble during the rehearsal process.
- Their experiences of the dynamics/ interaction within the ensemble when these strategies were applied were ascertained.
 - I asked them to describe the evolution of the group dynamics.
- I asked them to describe the teamwork, coordination and cooperation in general.

Follow-up interview

- I asked them to describe the first social interaction during the rehearsals that they can remember.
- I asked them to tell me a bit more about the interaction between the musicians during the rehearsals.
- We spoke about an incident that stood out from the rehearsal period.
- I wanted them to tell me what the main differences were between rehearsing this music alone or with other people.
- I asked them to tell me how rehearsing this way differed from how they were used to rehearsing.
- Their thoughts on how other people might have experienced the performance of the Crumb.
- I asked them to describe the main differences between a good rehearsal and a bad rehearsal when we rehearsed the Crumb.
 - Then how they felt after a bad rehearsal.
 - How they felt after a good rehearsal.

- Lastly I asked them to give their opinion of how the rehearsals would have been without the strategies.

The questions that I asked in these interviews were based on my observations of the rehearsals and took into account the Expert Team Theory that the strategies were built on. I aimed to ask questions that would ascertain how the participants had experienced different aspects of the rehearsal, specifically the interaction and group dynamics.

Observations of rehearsal videos

The interviews gave a clear description of the participants' view of the interactions during the rehearsal, but it was also necessary for the researcher to observe these points of interaction. The rehearsals were recorded by use of a video camera for this reason and if for any reason the researcher should need to refer back to the rehearsals. Thus the second type of data collection was the video recordings of the rehearsals in which the goal-orientated rehearsal strategies were employed. I used the observation protocol in Appendix B. Due to technical difficulties rehearsal three was not recorded and thus it was not possible for the researcher to observe this rehearsal.

Using the observation protocol the researcher was able to easily document the reaction of the participants to the application of the rehearsal strategies. The different categories of the observation protocol were: strategy used, participants' reaction, influence on the music and general remarks. When observing the rehearsals it was important for the researcher to document every time a rehearsal strategy were applied. It was important for the researcher to document the reactions of the participants when the strategies were applied for these reactions could lead to valuable insight into the participants' experiences of interaction in the rehearsals.

3.3.4 Data analysis

The transcribed interviews and the completed observation protocol of each rehearsal were included in one heuristic unit in ATLAS.ti. and analysed by the researcher.

NCT model for data analysis

Suzanne Friese (2014:12-14) explains the process by which one uses ATLAS.ti effectively as the NCT model – where the “three basic components of the model are noticing things, collecting things and thinking about things”. At the first level of analysing or coding, the researcher either writes down or tags things that are of interest. The coding can be descriptive or conceptual – it is important that one marks these things of interest. The next step is called “collecting things” and this process includes the researcher coding things that belong together under the same code. The name of the code can change – as more and more data are collected it will become clearer how categories should be labelled. When organising these codes one looks for similarities in the different codes to search for the next level of collection. The codes that were similar in some way can be placed in subcategories, categories and later themes.

The last stage in this process is the stage of thinking about things. This is the stage where the researcher thinks about how all the themes, categories and sub-categories fit together and what that means for the study (Friese, 2014:14-15).

3.3.5 Validation

In validating my findings two strategies were used, namely member checking and peer review.

The first and most important of these validation strategies was member checking. Member checking involved sending my findings back to the members of the ensemble and asking them whether they agreed with these findings and whether the interpretation of what they said and what their actions meant had been accurately recorded (Creswell, 2013:251-252).

The second validation strategy used was peer review. This strategy was the best guide against bias or personal opinion influencing the study. The strategy involved my research supervisor checking my work and especially my findings and results in order to confirm the validity of these findings (Creswell, 2013:251-252).

3.3.6 Ethics

To protect me, the North-West University and the participants involved in this case study, all required documentation that was filled out and the rehearsal also followed a pre-determined pattern. The participants signed a consent form (Appendix A) that states that their participation in this study was completely voluntary and that if they wished to withdraw from the study at any point there would be no consequences. The document also stated the exact nature of the study, the reason for the study and the way in which data would be collected. Lastly it stated that if a participant had any questions they would be free to contact the researcher, that no harm would come to any of the participants and that the data and their identities would not be made public. This study was also presented to and approved by an ethics committee at the North-West University.

Chapter 4: Data analysis

In this chapter I answer sub-questions 2 and 3:

- What are the dynamics within the ensemble when these selected strategies are applied?
- What are the experiences of the ensemble members regarding the interaction of the ensemble and the dynamics that were observed when Expert Team Theory was applied?

Sub-question 2 is answered mainly by analysing my observations of the video recordings of the rehearsals, while answers to the third sub-question are suggested on the basis of my analyses of the open-ended interviews. Where relevant and possible, however, patterns in the two kinds of data (observations and interviews) taken together are also discussed. These two questions are thus not answered separately.

The Expert team performance effective process and outcomes table on page 447 of *The Cambridge Handbook of Expertise and Expert Performance* (Salas *et al.*, 2006) was used as *a priori* codes to analyse deductively the interviews with participants and the observations made of the rehearsals (see also section 1.3 of this report). The analysis is therefore structured in terms of the following nine themes and each theme is discussed in the corresponding section below. In these discussions, the categories under each of the themes are also taken from the table:

- 4.1 hold shared mental models
- 4.2 optimize resources by learning and adapting
- 4.3 have clear roles and responsibilities
- 4.4 have a clear, valued, and shared vision
- 4.5 engage in a cycle or discipline of prebrief → performance → debrief
- 4.6 have strong team leadership
- 4.7 develop a strong sense of “collective,” trust, teamness, and confidence
- 4.8 manage and optimize performance outcomes
- 4.9 cooperate and coordinate

In the next nine sections, I record my observations regarding the categories under each theme. This will then be taken as a foundation for the final section of the chapter (section 4.10) in which I interpret my observations.

4.1 Hold shared mental models

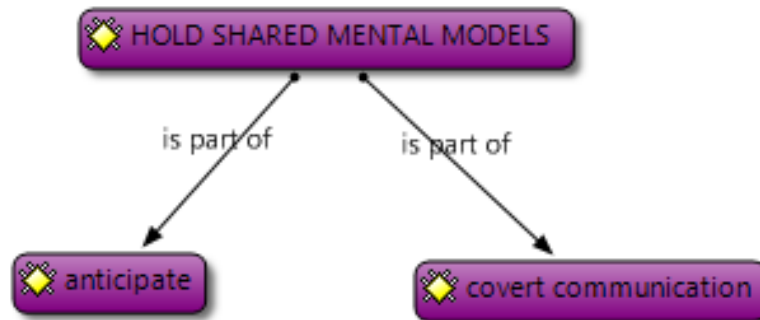


Figure 4.1: Network view of 'Hold shared mental models'

Interestingly enough, the characteristic of team members who anticipate each other was touched upon in the interviews with the participants only once, by Sam who stated: "...people could feel what the other person was trying to do or accomplish and took over from that". I did not find any evidence of this characteristic in my observations of the video recordings of the rehearsals. This is remarkable, because one would expect that the sharing of mental models in an ensemble, something that is clearly present in the data, would lead to more of the kind of anticipatory behaviour described in Expert Team Theory.

When referring to the category of 'expert teams communicate without the need to communicate overtly' the participants mostly spoke about the nature of the music and how necessary covert communication was for the performance of this specific piece. Chris remarked upon this aspect:

...you can't really do, you cannot do anything in this work on your own. I think it's a, it's a work where the, the interaction is such great deal.

When searching for evidence of the presence of this category, I took the meaning of 'an expert team not needing to communicate overtly' as referring to the use of non-verbal means of communicating while playing instruments. This was a fruitful strategy, because it also helped me to understand how the patterns of communication changed from the earlier to the later rehearsals. The participants

commented on how communication in the ensemble changed, from being more focused on overt or verbal communication to the employment of covert or non-verbal communication. One such statement was made by Sam regarding her experience of rehearsals 4 and 5:

I think it was, in certain aspects, it was not necessary to communicate as much because the music started to make more sense and people could feel what the other person was trying to do or accomplish and took over from that.

Chris agreed with Sam in remarking on rehearsals 4 and 5:

I think that in the beginning we rely much more on communication like verbal communication and I think it evolved towards the end, hum more to, hum physical communication because we got to know each other much better and – in a in a musical sense – we got to know the gestures and things so I think in the end we didn't communicate as much *bu*, verbally but physically more.

As the ensemble started to know the music and understand where the points of interaction in the music are, they did not need to talk about it anymore, as Chris explained:

I think because we knew the music a bit better and we knew in our own part where, where – you know in smaller detail – where you must listen to other players... in previous rehearsal we didn't really know how that fitted into each other but in the second rehearsal we looked to each other and we had quite good interaction.

Pat was the only participant who did not comment on the nature of the communication and how that was influenced by the nature of the piece. Pat mentioned the lower energy level of rehearsal three, but also said that: “the interaction was still good I think that was still at a high level”.

The observations of the video recordings supported what the participants said in the interviews. There are clear indications of the use of non-verbal communication between the members of the ensemble when performing certain sections of the piece. During the performances of most of these sections the ensemble members made use of various kinds of covert communication. This happened in all the rehearsals and the concert performance. There was an example in rehearsal two – when the clarinet and the piano played accompaniment to the violin cadenza in echo 6 – where Sam and Pat resolved the problem of entering together when the musicians agreed that the use of non-verbal communication was the answer to that

problem. The nature of the non-verbal communication also changed during the rehearsal process – even the use of covert communication, in the form of body language, for example, became less obvious with every rehearsal, most likely because there wasn't as big a need for large gestures to ensure well-coordinated ensemble playing.

4.2 Optimize resources by learning and adapting

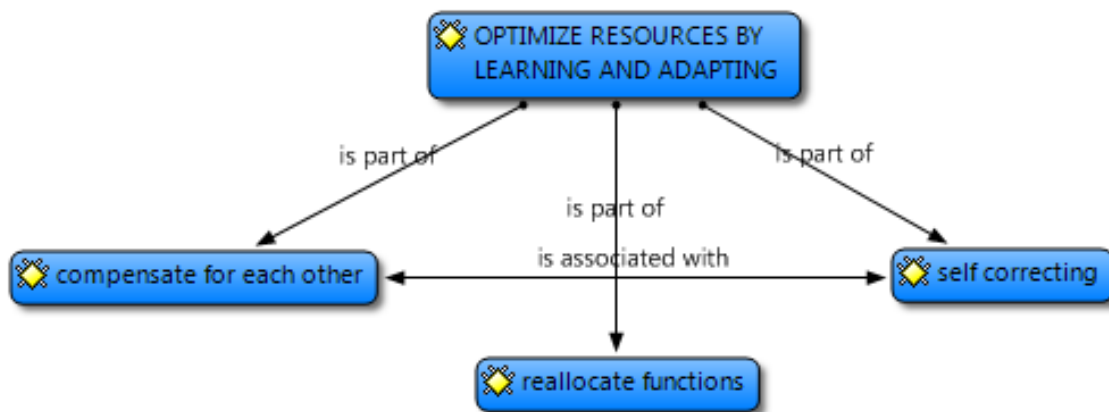


Figure 4.2: Network view of ‘Optimize resources by learning and adapting’

The ensemble’s dedication to achieve success with this project, and mainly with the concert performance, was clear in the interviews and this was also evident in my observations of the rehearsals. Pat spoke about self-correcting on many different occasions and mostly referred to how all members focused on detail in order to get more aspects correct:

It will become more effective if we do a section and then maybe where there is a point where there is a difficulty either somebody is not hearing where somebody else is coming in or whatever – that we stop there and go through that and repeat it till everybody is completely comfortable.

Chris agreed with Pat and stated that:

I think the second rehearsal was, was much more effective it may have not seemed that successful because we made many more mistakes than in the first rehearsal, but I think that’s, that’s, that’s quite a good sign if you, if you make mistakes and you notice it.

Pat also mentioned feeling unsatisfied walking away from a rehearsal where a problem was not fixed: “there was one and it might have been the first one where I walked away feeling I wasn’t happy about, about achieving that particular thing”. Sam spoke about how the ensemble might rehearse or self-correct only once saying:

I think if we if we run the, if the goal is to run the whole piece and then see which problems occur from that and then work strategically to, to kind of erase each problem towards the goal I think we will be able to perform successfully.

During the observation of the rehearsals it became clear that the participants’ dedication to ‘self-correcting’ was firstly evident in the improvement of their playing from one rehearsal to the next – indicating that they also practised their parts when not in the group rehearsals. There are also instances where they practise sections on their own during the group rehearsals when the ensemble stopped playing or when a matter that did not involve them was being discussed. Further evidence of ‘self-correcting’ is clear in the feedback and situation updates that the participants give – they make sure they ascertain the knowledge that they need to play correctly for example: in rehearsal 1 Pat asks Chris to play her part in eco 1 in order for him to know what to listen to before he enters.

‘Compensating for each other’ and concentrating on one another’s part were very necessary as Chris explained:

The main focus is almost not on your own technique or your own perfectionism, but more on getting things together. Well that’s how I experienced it – that was when we were putting it together – it was almost like you had to focus more on the other members’ parts than your own to enter correctly and yes, and one of the greatest challenges for me was to enter at the right time, because that is a challenge with this piece.

Often these acts of compensating for others had musical implications. Pat agreed with Chris that there was a difference in practising alone and with the ensemble:

Alone what I was trying to do was concentrate on getting the fingering work right but without the benefit of knowing how the timing would be. Uhm... When we were together of course there were timing, there were interactions. Other people had to finish their sections before we played. And I think that was a big difference. You and I for example, uhm had to follow on from each other and it was important to run continuously. So I think that was a very big difference.

Sam, however, did refer to ‘compensation’ that did not have a direct reference to a musical action, and explained more about the interpersonal dynamics:

On a certain topic or with a certain thing you can discuss it with people up to a certain point and then you get to a point where you realize that; they will either not budge or, just hum, acknowledge a different point of view, so then I will rather step back and listen to what they have to say and then try doing it like that and see how it goes – instead of saying but this and this and this and this is what I think and that's I feel and that's what I will do.

She continued this chain of thought by stating that:

one should be sensitive to different personalities and ways of doing as well, hum some people has a soft way of approaching things other people has a very, direct – which I think I do – so rather, rather than, than being hard on someone in a way that they will perceive it as being hard and harsh I will rather not – because of the personality thing - I will rather not engage in that and see what comes from the music and if the problem still occurs persistently then I will try in a calm way to say but ok right I hear what you're saying. We've done it now a few times but it doesn't feel like it's working so maybe we could try x, y and z but I will not necessarily try bang on my, my perception of a thing before we haven't tried out a few other things.

From these quotes one can easily see that it is not always regarding musical aspects that one has to compensate, but sometimes compensation is necessary for the good of the ensemble and the ability to work together.

'Compensating' was very clear in the rehearsal video observations and was mostly evident in the first rehearsals. As the rehearsals progressed, it became less and less necessary for the members of the ensemble to compensate for one other. In the first rehearsals there was evidence of a lot of compensation when some of the members made mistakes or got lost. Participants would have to wait for one another playing more repetitions that necessary or perhaps making use of non-verbal communication to indicate to someone that they should play. There were some instances where one participant indicated on the other's sheet music where they were and that it was time to enter. The nature of the piece that the ensemble rehearsed led to more compensation than pieces by other composers. Thus the ensemble never stopped 'compensating for each other' – at the end the compensation was expected in order to give a convincing performance and no longer because of mistakes.

The characteristic of 'reallocating functions' was not addressed in any of the interviews. However, there were two instances of 'reallocating functions' in the score that happened in the rehearsal and performances of this work. It was necessary to 'reallocate the functions' in these two places, because of the alternative technique that the pianist had to execute. The pianist who played in the ensemble is quite short

and thus it was necessary for one of the other members to help the pianist to execute these sections.

4.3 Have clear roles and responsibilities

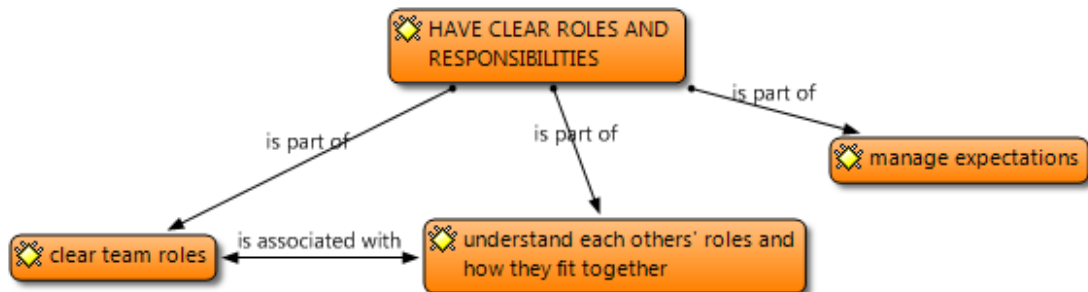


Figure 4.3: Network view of 'Have clear roles and responsibilities'

On the category of 'managing their expectations' Pat referred to his own system of measuring the progress of the ensemble:

If we measure with, hum the idea of precision in mind – with that I means everybody's been absolutely together, everybody plays the right notes, everybody has the right dynamics then I would say we have an 80% chance of success.

He also had his own performance and abilities in mind when saying:

Because of my own difficulties, I'm still struggling with certain little bits, I'm still thinking around 80 maybe 85 percent level in terms – using the same references as before and that is accuracy of movement accuracy of timing etcetera.

Sam's reference to this theme was more in terms of being cautiously optimistic. In the interview after the first rehearsal she stated:

I think it's still very early to say because we've had only one rehearsal but that being said hum, I still think that it worked quite well. I, I didn't feel that anything was problematic or that there - that more problems occurred from rehearsals or from people or from different players I think.

This attitude continued, as could be heard in the interview after rehearsal 3 when she suggested a strategy for the next rehearsal in order to achieve success. However, her opinion seems to change and in the last interview Sam's initial hesitation is clear again when she referred to how they felt at the start of the

rehearsal process. She also stated how relieved she was when the performance went well:

I think initially we all thought it's gonna be difficult and tricky and how will this become music, but in the end it did and I think everyone kind of got a kick from it.

The category 'they have members who understand each other's roles and how they fit together' doesn't have the same meaning for a music ensemble as it would have for another team. In this case this category referred to their different parts and how they fit together. Chris and Sam both spoke about the nature of the music and how it was essential for each member of the ensemble to understand how their parts fit with the other parts and also how this affected the focus of the rehearsal. Chris was of opinion that because:

...the music is so free you don't really have hum clear points when hum you couldn't just listen or something. So you the, the only, hum thing to hold on to was, was the interaction between the, the instrumentalists so only with eye contact or with a gesture or something you could have really saw ok she's going now so I must go after or something like that.

Sam felt that this aspect of the music made practising on her own more difficult and that getting to know how the other parts fit helped a lot:

It's, it's trickier to do it on your own - to figure out everything and see what's happening but the moment you have other instruments playing with you especially if you have similar sounds that you need to create it kind of becomes easier.

Pat also spoke about the differences between individual and group rehearsals:

When we were together of course there were timing, there were interactions. Other people had to finish their sections before we played. And I think that was a big difference. You and I for example, uhm had to follow on from each other and it was important to run continuously. So I think that was a very big difference.

In the beginning of the rehearsal process, as evident in the video observation, it was necessary for the participants to ensure that they understand how their parts fit together and interact with the other parts and thus they asked many questions about the other members' parts – asking them to play sections in order for them to hear how these sections sound. This step was very important, because visual representations and the aural results don't always correspond.

The category 'team member's roles are clear' was mentioned once by Chris, who said that the leadership was clear and that the ensemble could just follow that.

by you there were leadership in saying we must do this and this and this and the communication, hum you know in the communication so we could, could've just followed your leadership.

The roles that each member fulfils were very clear and indicated by the score.

4.4 Have a clear, valued, and shared vision

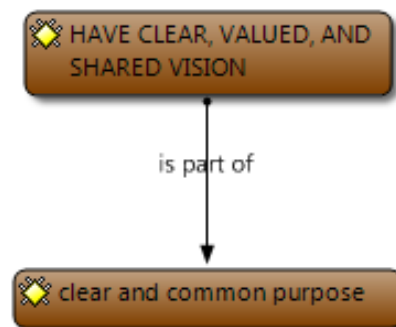


Figure 4.4: Network view of 'Have a clear, valued, and shared vision

The category 'expert teams have clear and common purpose' was a category that clearly emerged from the interview data. Chris explained this when she stated: "before we even started we knew exactly what we were going to do" and "I think with all the discussion and things going on, we knew, we know exactly where to concentrate". Pat thought that the leadership added to the team's clear purpose by saying: "I think you know what you're talking about and what you want and that makes it easier to respond correctly." Sam agreed with Pat by stating:

I think, hum everything was very well communicated from your side right from the start; what is to be done with each, each time we played through the music. So from that it was also easy to, to decide what should be communicated what was the main things to address.

It is clear from the interviews that all members of the ensemble had a strong focus on the end result of the rehearsal process – the concert. Chris confirms this by saying: "I think we only... we focused a bit more on, on playing through for the concert and, and again getting the overall picture bit better."

4.5 Engage in a cycle or discipline of pre-brief → performance → debrief

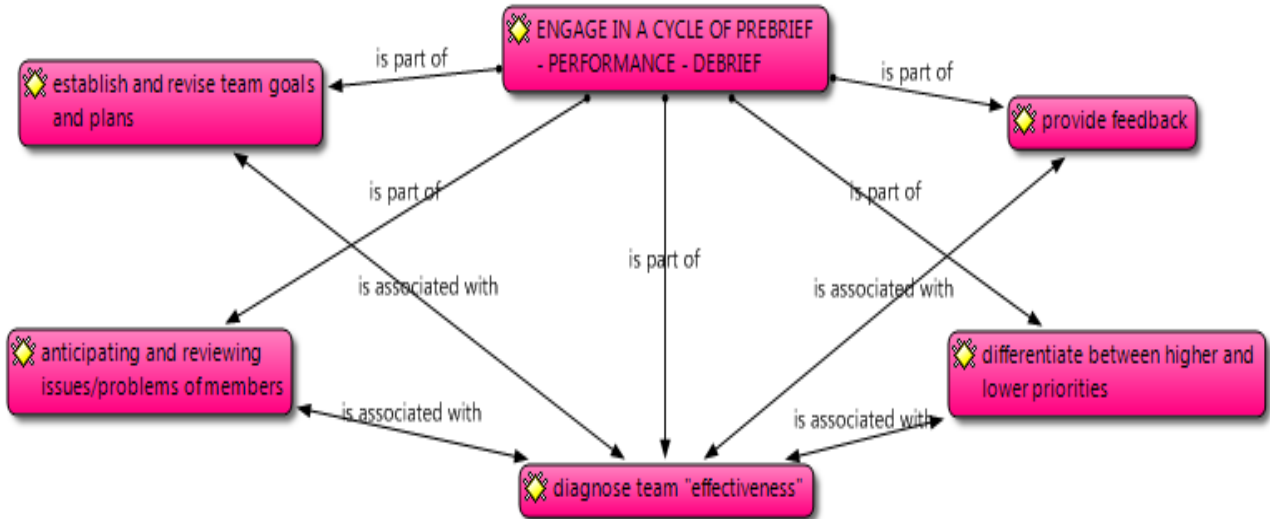


Figure 4.5: ‘Engage in a cycle or disciple of pre-brief → performance → debrief

The cycle of ‘pre-brief → performance → debrief’ was used as the structure for all the rehearsals, thus the categories that fall in this theme was often referred to by the participants. One of the main topics that the participants mentioned was that they felt safe to communicate during the rehearsals, as Sam states:

I don't think anyone hum asked questions in a, in a way that one could feel, hum patronized or, or spoken down to the thing. I think everyone communicated with each other in a very civil way.

Chris agreed with Sam and also added that the ensemble members helped each other when saying:

we say a lot more what we think can help each other and, and like you said not in a negative sense but really, really positive. I think that we, we well the group talks a lot more – helps each other like more.

Pat also shared this sentiment when remarking that:

we asked questions when it was necessary. I don't, I don't believe any of us felt put down or anything else if the answer to the question wasn't what was expected...

Another aspect that all of the participants remarked upon was the development and growth of the communication. Pat said that:

I think because we have become a little bit more familiar with what's required of the music and a little bit more familiar with each other even though we knew each other before the time. I mean the fact that we have been playing together now for the two or three rehearsals hum just frees up the ability to communicate.

Sam's shared the same opinion as Pat saying:

...as the hum rehearsals progressed the communication also developed more and progressed more and there was a greater freeness in asking something or, or discussing what type of problem you had and trying to solve it.

Chris was the only participant who spoke about the nature of the piece and how this led to the need to give feedback and discuss problems that occurred. Sam also mentioned that a good rehearsal was a rehearsal in which the communication between the members was good.

Feedback happened through the entire rehearsal process. The nature of the feedback changed as the collective efficacy of the ensemble developed and then again as they knew the piece better. As the collective efficacy of the ensemble developed the members started to be more talkative by giving more feedback as to their impressions of the performance. The amount of feedback also increased as the members got more in-depth knowledge of the score and the other members' parts. Towards the end of the rehearsal process the amount of feedback lessened as there was less for the members to say because most of the problems have been fixed.

'Establishing and revising team goals and plans' was mentioned by all the participants throughout the interviews. Chris's opinion about this step was:

I think uhm this way of working is very effective, because with this you actually state, uhm the problem is literally addressed and you say exactly what the problem is. So everybody knows what the problem is and then there is also a plan of how we will fix this problem. So I think this way is very productive, although I think it's difficult, because it's not always easy to put problems into words.

Sam also spoke about this aspect and how the process worked:

I think when we, we had a certain strategy we, we tried to execute that and then assessed what happened and then after the assessment again tried to, to then embed that in what we needed to do.

Chris and Sam also agreed that as the rehearsal process progressed the goals changed from smaller more focused goals to the bigger goal of being able to perform the piece successfully in concert. This idea was stated by Chris in the interview after the third rehearsal:

I think the more specific detail was a bit less but that is also good 'cause we're getting to know the specific detail much better now so we can focus more on the whole.

Pat only referred to the aspect of focusing on specific detail in his interviews, saying: "I think speaking personally I found it more valuable actually being able to stop like that and focus on some of the difficult things."

It is very interesting, though, that Chris refers to rehearsal three as one with less detail and more focus on the bigger picture by saying: "I think the more specific detail was a bit less but that is also good cause we're getting to know the specific detail much better now so we can focus more on the whole." Reflecting on the same rehearsal Pat contradicts Chris: "I see a goal as a little bit broader, so I would say a little less so because we were focusing on a bit more detail." Sam made one other reference that was very different from the reported experience of other participants' in saying that different people experience music in different ways:

I think different people experience difficulties in music in a different way – so for some people it helps to play through the music and then identify for others it helps to identify possible problem areas beforehand and then be aware of them when they play through them and then discuss them again afterwards. I think the way in which it was done helped all the mentioned parties and the different ways in which people may approach or may need to discuss things. So I think lots of problems were avoided by making people aware of it beforehand and, and I think it also attributed to the success of the rehearsal.

When the video was observed it was clear that throughout the whole rehearsal process goals and plans were established and revised. Before every "performance" section of the rehearsal goals were established and after the performance the ensemble evaluated them and they were revised accordingly. From the feedback of the members, sections were identified and goals established to ensure focused work during the entire rehearsal. The rehearsal process and what needed to be rehearsed

next was also constantly revised by taking the different ensemble members' situation or feelings into consideration. As the ensemble became more comfortable with the notes and the ensemble aspects of the work the goals were revised. These goals changed from being focused on technical and ensemble problems to goals more focused on interpretation and creating the right mood for the piece.

Referring to the differentiation between higher and lower priorities Sam stated the following:

I think it was a good decision to have strategies, to break down the piece, uhm and to decide to concentrate on one aspect at a time and then if that has been achieved then you moved on to, to try and to mm combine more of those together.

After rehearsal 1 she had the following to say: "it was also easy to, to decide what should be communicated what was the main things to address" (3:15). Chris agreed with this statement and said:

we discussed that before we played and hum when we all knew which this or what those problems were we really concentrated and so, so I think with all the discussion and things going on, we knew we know exactly where to concentrated and then we rely on each other so think that that yea it's very effective.

Pat spoke about focusing on detail in rehearsal 3; "we were focusing on a bit more detail". Chris, however, more specifically spoke about how the priorities changed as the performance date came nearer, saying:" I think we only, we focused a bit more on, on playing through for the concert and, and again getting the overall picture bit better." Observations of the rehearsals supported what the participants said during the interviews and the change to more concentration on the bigger picture was very clear.

In terms of the category 'anticipating any problems/issues that any of the ensemble members might have' the ensemble members spoke about a wide range of topics connected to this characteristic. Chris spoke about how the anticipating helped the interaction and non-verbal communication:

we talked about the, the points that will that will be a bit problematic in the beginning and I think because the music is so free you don't really have hum clear points when hum you couldn't just listen or something so you the, the only hum thing to hold on to was, was the interaction between the, the

instrumentalists so only with eye contact or with a gesture or something you could have really saw ok she's going now so I must go after or something like that.

She later clarified her opinion:

I definitely think that we, we interacted more because we knew that that areas that would be they would be a bit more difficult so yes I definitely think we interacted more.

Sam spoke about how anticipating problems led to fixing them more easily:

I think by, by communicating beforehand which people could experience which problems you don't necessarily eliminate them but by being aware of the problem I think it is more easily fixed in the end

She also mentioned that discussing the music beforehand is especially useful for some people:

...for some people it helps to play through the music and then identify for others it helps to identify possible problem areas beforehand and then be aware of them when they play through them and then discuss them again afterwards.

Sam felt that it was interesting and refreshing working in this manner :“It was interesting and refreshing but a good refreshment to communicate about the music before playing and to foresee certain problems“ and that anticipating also helped the members of the ensemble see who is doing what where in the work.

So to, to speak about it before hand I think clarified quite a few things also because uhm it's not music one plays every day. It's strange techniques, strange things you have to do so maybe to, to have heard from, from the people before starting playing uhm how they experienced it and how they went about it to make it work I found that quite interesting and nice.

Only one point was mentioned by both Chris and Sam and that was that it was necessary to talk about the potential problems because of the nature of the music.

In the rehearsals when the ensemble was anticipating potential problems, members also gave situation updates and feedback about their situation and difficulties. Problem areas were revisited when they had not been completely fixed in the previous time that the piece or that specific section was performed. In general the problematic points, in terms of ensemble, identified in the first rehearsal were the same ones that needed attention and not many additional problems were identified.

There were definite indications of an increase in non-verbal communication at the points identified in the prebrief when anticipating possible problems. As the rehearsals progressed, the ensemble spoke much less about these problems as everyone was aware of them and gave the attention that was needed.

Effectiveness is the characteristic to which the members referred the most during the interviews, a total of 28 times. Chris spoke about the effectiveness in the first rehearsal:

I think we were, were effective but I think we can be a bit more effective because we, we I think hum some of us were still sight read a bit and it was the first time we've put it *tog*...or actually the second time we only put it together so I think there were there were still a lot of concentration on the music and not, not hum not as much on the on the strategies that could have been. So then we can still improve on that a bit but I think it will improve naturally as we know the music better.

Sam thought that the first rehearsal went well and that no additional or new problems were caused by the rehearsal and felt that the first rehearsal was more effective than rehearsals where a more traditional strategy was followed.

I think it's still very early to say because we've had only one rehearsal but that being said hum, I still think that it worked quite well I, I didn't feel that anything was problematic or that there, that more problems occurred from rehearsals or from people or from different players I think.

I think it was quite effective, I think the way in which it was approached and the way in which it was executed was, I think more so maybe than, than normal rehearsals if you think of the way in which a normal rehearsal will, will go. Normally one would play not one, but many people will play through the music first and then determine ok why this what's wrong but by, I think by, by communicating beforehand which people could experience which problems, you don't necessarily eliminate them but by being aware of the problem I think it is more easily fixed in the end.

Pat felt that the first rehearsal could have been more effective if the ensemble had stopped more often to fix problems: "for me I would think it would be more effective if there was more allowance to have – where there have been little hiccups or whatever", but was happy about when that was done in rehearsals 2,

the music itself I felt was 50% better because we could focus on some of the details, we looked at timing, coming in together the interpretation, making we were and the right things there. And I think that has a good result at the end

Pat:

we focused on things like starting and finishing things together getting notes and what not correct, uhm timings correct hum and hum rhythms within the tempi and I think that was very effective.

Pat also stated in interview four that he would have wanted to spend more time really fixing the details: "The way I was brought up as you keep practicing things over and over again and in detail until you get it right." He also mentioned that the energy in the rehearsal 3 was a little lower, but that it was still an effective rehearsal and many things were achieved. Both Pat and Sam spoke about the enjoyment involved in the rehearsal process and the concert and that they feel that the audience also shared in this enjoyment. This is a good indication of the morale of the ensemble and Chris added to this by talking about feelings of excitement after a good rehearsal. Chris spoke about a bad rehearsal saying it's a rehearsal in which one learns very little and then ends up a bit bored, but did not refer to a specific rehearsal as a bad one. Chris also spoke about the rehearsal process and the different approach these strategies bring: "It's sometimes hard to put things in words in just ordinary hum rehearsals, so I think hum, hum being forced to put... hum your problems in words and not just showing it, it's is another way of, of hum seeing in your brain another way of hum interpreting." Sam agrees with Chris saying that it's new and fresh.

4.6 Have strong team leadership



Figure 4.6: Network view of 'Have strong team leadership'

Some of the participants' ideas on team leadership have already been presented. The categories that fall under this theme are more focused on leadership aspects. It was the hope of the researcher before the rehearsals started that these characteristics, especially situation updates and fostering of teamwork, coordination and cooperation, would be adopted by the participants.

All three the participants mentioned that it was easy to respond to the given instructions. Chris said that: "we could, could, could've just followed your leadership".

Pat said:

I think we needed your guidance, uhm well I especially needed your guidance because I didn't really know the music, yes I listened to videos and I tried to do some modelling on those but when you came to my home and we did the one on one thing it gave me a much better understanding. Uhm so if there had been none of that I think it would have taken us far longer to get to the point where we did.

In the observation of the rehearsals these opinions were supported by seeing the leader give clear, easy-to-follow instruction about what was to happen and guiding the players in terms of the music and the rehearsal strategies.

Determining whether the ensemble believed their leader cared about them was a difficult task, especially when the ensemble leader was also the researcher, but I

think the same references to the leadership and the positive thoughts that they had about the leadership is evidence to this claim. As Pat mentioned: "I think we needed your guidance".

Situation updates were an aspect of the way that expert teams work, and which the ensemble adopted. Chris said that it was in the nature of the music that situation updates had to be given and Pat agreed by saying: "we asked questions when it was necessary". Sam thought that with each rehearsal providing situation updates became easier:

I think the, the more rehearsals we had and the more we played together the easier it became hum...I think one started to know all the other players as well. It just made it easier and comfortable. You had more freedom in asking something.

She also mentioned that because people are different and experience things differently explaining a certain situation can be a little difficult.

I think a good rehearsal was when the communication went well and that was I think 80, 90 percent of the time it was like that. I think the struggle came in in discussing things and, and people perceive things in different ways, you will understand something in a certain way but another person you will have to explain the same thing to in a different way in order for them to understand. I think that sometimes made it difficult, not impossible to work, uhm in some rehearsals that just made the process a bit longer I think.

In observing the rehearsals there is clear evidence of situational updates. Sam is the person in the ensemble who most often made use of this when sharing about her part and why things might go wrong or take a little longer.

When referring to the category of: 'they foster teamwork, coordination and cooperation' Sam talks about the nature of the piece and that it is easier to play it with the rest of the ensemble than practising alone:

I think with the other people it actually becomes a bit easier...Ja. It's it it's trickier to do it on your own...to figure out everything and see what's happening but the moment you have other instruments playing with you especially if you have similar sounds that you need to create it kind of becomes easier. So I think rehearsal in that or the practicing in that aspect together made it easier necessarily than alone.

Chris also stated that the nature of the piece asked for teamwork and relying on each other to be successful and says: "the music is so free you don't really have hum

clear points when hum you couldn't just listen or something so you the, the only hum thing to hold on to was, was the interaction between the, the instrumentalists”

It was clear that Pat wanted to foster teamwork when saying:

I think hum, Chris maybe because she's a little younger is much more reticent, I think to say anything hum, and to get to - I think we need to encourage her to be more involved in saying something than Pat that was nonsense you must fixed that or whatever

Pat also talked about the development of the teamwork during the rehearsal process and that everybody getting to know each other better improved that. Chris indicated enthusiasm by saying that they really have a great group of people on the team.

4.7 Develop a strong sense of “collective,” trust, teamness, and confidence

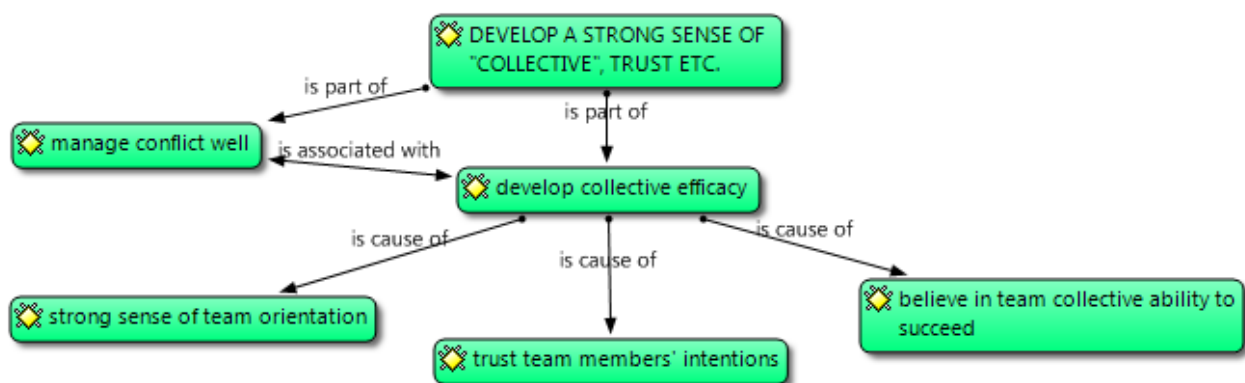


Figure 4.7: Network view of ‘Develop a strong sense of “collective,” trust, teamness, and confidence’

Sam was the only participant who spoke about ‘managing conflict’ in her interviews. Her main concern was that people perceived situations and understood things differently.

On a certain topic or with a certain thing you can discuss it with people up to a certain point and then you get to a point where you realize that they will either not budge or, or just hum, acknowledge a different point of view – so then I will rather step back and listen to what they have to say and then try doing it like that and see how it goes. Instead of saying but this and this and this and this is what I think and that's I feel and that's what I will do.

In the rehearsals I observed that the ensemble members continued without unproductive incidents or loss of professionalism even when there was visible irritation – this was most evident in rehearsal 3.

The reason for their constraint can be found in another pattern in the data. Both Chris and Sam referred in the interviews to their having a ‘strong sense of team orientation’. Each referred to slightly different approaches to the same topic – that of focusing on the team and bonding as a group. Chris spoke about the focus of knowing exactly what it was that they were doing and what strategy they were using and focusing on each other’s part instead of one’s own in order to get through the music. Sam spoke about how every little achievement took them closer to their goal:

I think with each, each strategic thing we accomplish we also accomplish something toward the goal we are aiming for; weather it is for one movement or six movements in a row or the piece as a whole, but I think each time one leads to the other, so yes I think it’s still goal orientated.

When referring to their trust in the other ensemble members’ intentions, everybody except Chris, spoke only about two aspects: having no reservations when communicating and the improvement in communication over the whole rehearsal period. They mostly spoke about how the ensemble members had no reservations in saying what they wanted and referred to not being afraid to say what they wanted. Pat responded to the question of feeling safe about giving his opinion by saying: “Yes. There were, hum, no reservations at all about that.” Sam agreed by stating:

I don't think anyone hum asked questions in a, in a way that one could feel hum... patronized or, or spoken down to the thing, I think everyone communicated with each other in a very civil way.

The other aspect that everybody touched upon was how the interaction through communication improved during the rehearsal process and people were more at ease to ask or say what they wanted, as Sam mentioned in the second rehearsal:

First rehearsal. I think everything was still a bit touch and go. Everyone was feeling and sussing out each other to see what would be acceptable to mention what would not be an issue what would suite certain personalities. Uhm which I think... changed quite a bit towards the next rehearsal.

Chris also spoke about another topic, saying: “I think we've got a, we've got a great group” –an indication that there was trust among the members of the ensemble.

Chris also referred to the fact that the nature of the music called on performers to trust each other.

All the remarks about the category of 'developing collective efficacy' can be grouped into three stages of the rehearsal process: the initial uncertainty of not knowing one another, the growing confidence as people started getting more familiar with one another and the stage where they knew each other and especially their body language well enough to make use of less and less verbal communication. The only person who referred to the first step in this process was Sam who summed up the situation well in the interview after the first rehearsal:

I think people were still sussing out one another, because some people have played together before, some people have not and within different circumstances each time so doing an exam together or doing a concert together or doing a big ensemble piece together it's, it's the same thing but it's also different in each way so I think people were still trying to feel each other see hum what is acceptable for one person what is not acceptable for one person what kind of hum strategy works for one person what does not work for the other person.

All of the participants discussed phase 2. They all agreed here that as they got to know each other better and felt more comfortable the interaction and their willingness to say what they wanted grew. Pat explained the situation as follows:

I think everybody grew from the first rehearsal to the second rehearsal. I think the more people played together and talked together, joke, hum it makes that communication easier and make everybody I think I believe, certainly from myself - believes it's easier to say something hum and, with an object rather simply insulting somebody.

Sam agreed with Pat when she said:

I think with the more hum relaxed communication between, between the members hum things flowed also, better in the rehearsal one was able to, hum to say to someone; but this will help me more or could we please do that or could we do this if you do this it helps me, hum yes so I think there was hum, a great improvement in terms of that. Not that it was bad initially, but it became better with the second rehearsal. And I think – simply 'cause people hum started to see what makes the other tick.

Towards the third phase Chris explained the development in the following manner:

...because we got to know each other much better and hum in a, in a musical sense we got to know the gestures and things so I think in the end we didn't communicate as much *bu...*verbally but physically more."

About the third stage Sam said:

I think it was, in certain aspects, it was not necessary to communicate as much because the music started to make more sense and people could feel what the other person was trying to do or accomplish and took over from that.

These phases were also visible in the observation of the rehearsal video and it was clear in the first rehearsal that people were a little hesitant to speak or give their opinion and thus the leader did most of the speaking. In the second rehearsal there already was a vast difference in how the ensemble interacted and the dynamics in the rehearsal was much more relaxed and energetic with lots of jokes and laughter. In the middle of rehearsal four and rehearsal five the ensemble started to use non-verbal communication more than verbal communication and there was a definite focus on the concert that was getting closer.

4.8 Manage and optimize performance outcomes

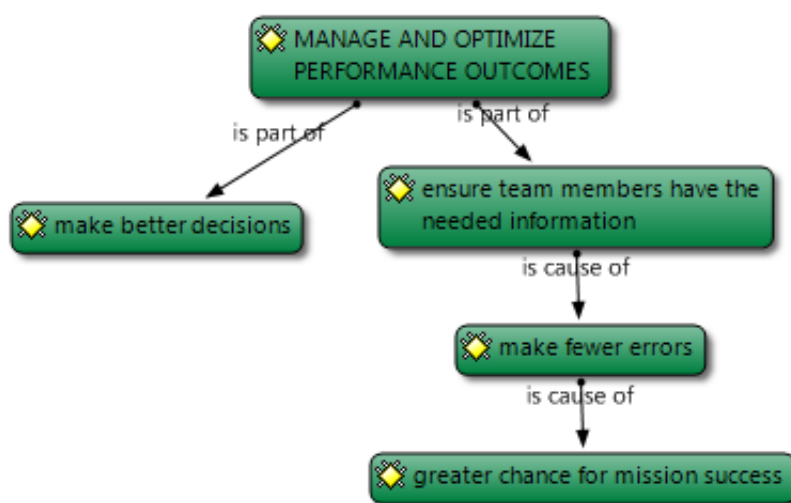


Figure 4.8: Network view of 'Manage and optimize performance outcomes'

Chris and Sam both spoke about the ensemble making fewer errors, both referring to how the anticipation of problems helped the ensemble to make fewer errors. Sam stated in the interview after the first rehearsal: "So I think lots of problems were avoided by making people aware of it beforehand and, and I think it also attributed to the success of the rehearsal." When Chris spoke about making fewer errors she spoke about how the rehearsal strategies influenced the progress of the rehearsal,

saying: “And I think if it was not for this we could not have managed what we did in five rehearsals”. My observations of the videos supported these claims: problematic areas mostly went by without any incident and there was considerable improvement from rehearsal to rehearsal.

Expert teams communicate ‘often enough’; and they ensure that fellow team members have the information they need to be able to contribute. Musicians do not usually talk too much about music and how they see a certain section or phrase; they would more often give an example by playing or singing it. Chris also spoke about this in the first and follow-up interviews referring to how the greater than usual usage of verbal communication gave him new insight into the rehearsal process:

I think talking is very good. It's sometimes hard to put things in words in just ordinary hum rehearsals, so I think hum, hum being forced to put, hum your problems in words and not just showing it, it's another way of, of hum seeing in your brain another way of hum interpreting. I think it's very effective.

Pat made one comment about this category saying that as an ensemble they exchanged ideas. Chris said that because of the nature of the music it was necessary for the ensemble to discuss the music. In this regard Sam spoke about the civil way in which the ensemble asked each other for the things that they need in order to play correctly and how the communication became easier with every rehearsal:

I think with the more hum relaxed communication between, between the members hum things flowed also, better in the rehearsal one was able to hum to say to someone but this will help me more or could we please do that or could we do this if you do this it helps me hum yes so I think there was hum, hum a great improvement in terms of that - not that it was bad initially but it became better with the second rehearsal. And I think or simply ‘cause people hum started to see what makes the other tick.

Chris agreed by stating:

I think the group dynamics get, get quite a bit better I also think the communication between the group get...is improving, hum for example we quite, we say a lot more what we think can help each other and, and like you said not in a negative sense but really, really positive. I think that we, we well the group talks a lot more, helps each other like more.

As becomes clear from these quotes Chris and Sam both agreed that the ensemble tried to help each other by providing the right information and clarifying the situation

in which each of them found themselves. In the rehearsals the ensemble used non-verbal and in some cases verbal communication when in the 'performance' stage of the rehearsal to ensure that the ensemble continues to perform well. In the pre-brief and debrief phases the ensemble asked questions and spoke to one another to clarify sections where something might not be completely clear or together.

In none of the interviews did any of the participants refer to the category 'they make better decisions'. Although there was progress in every rehearsal with the standard and the precision of the notes – there wasn't any evidence of the ensemble making better decisions in the rehearsal videos. It is of course possible that most decisions were taken while performing and not discussed in words either during the rehearsals or during the interviews.

Chris and Sam spoke about the first rehearsal and how well it went – expressing a positive view of the ensemble's chances for success. As clear in Chris' statement after rehearsal 1:

I think we have great chances because the first play through went really well we can we can only build from there. I think we've got a, we've got a great group, we've got a lot of interaction and we understand how, what the different outcomes is and we've got a good leader so, I think we can really reach our goal.

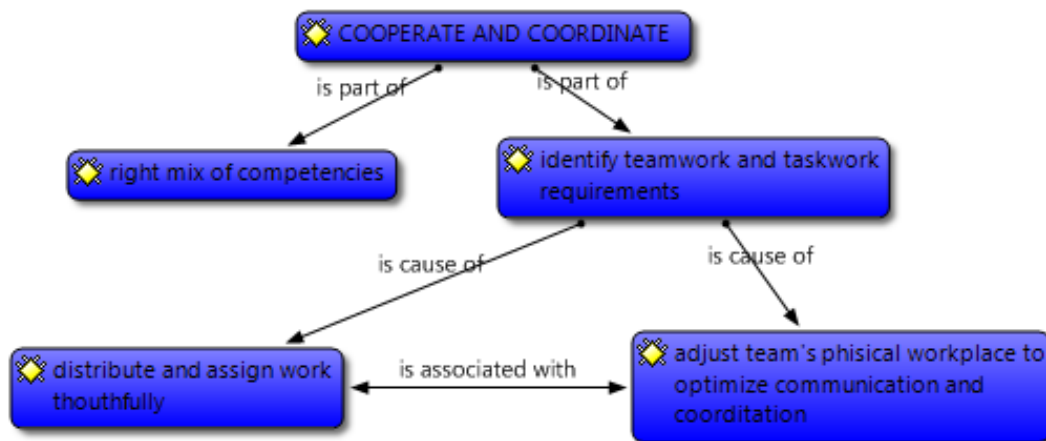
Sam agreed with Chris, but giving her own reasons:

I think we, we have a good chance of experiencing success with this, hum with the rehearsals with the, the obstacles and the – what we would like to achieve within every rehearsal. Seeing that everyone knew their parts coming to the rehearsal, seeing that everyone is open to discussion and no one feels offended when, when spoken to about a certain thing for instance saying would you please do this more like so and so and so because it will help me. So I think within that mind-set it, it is very easy to, to be successful or, or have the success for performance of this piece.

Chris talked about the influence that the rehearsal strategies had and mentioned that the strategies challenged the way they perceived the music and the fact that the ensemble worked thoroughly, added to the success of the ensemble. In the follow-up interview he said that without these strategies the ensemble would not have been able to play the way they did. Pat and Sam agreed with Chris' statement and was of opinion that the ensemble did not really have a bad rehearsal: "the fact that we only had four rehearsals plus just a preconcert one I, I think we played quite honestly

very, very well” and that without the strategies “I think it would be a disaster because uhm I think we needed your guidance uhm, well I especially needed your guidance because I didn’t really know the music.”

4.9 Cooperate and coordinate



I think the one time that Sam spoke about identifying teamwork and task work requirements summed up the essence of why this step is important by saying: “it’s not music one plays every day.” For this reason the ensemble members had to talk about sections of the music and what needs to happen there as Chris says in the follow-up interview.

We really had to rely on the other instruments parts to for example enter correctly and to uhm create the right atmosphere at certain places – so it was actually a necessary part that we should have interaction with each other in the form of speaking to one another to ask can you please do this at that place, because that will help me to play my part tight and so forth.

Chris also talked about the development and how people got to know the music better and how this enabled them to recognize what was happening and to concentrate on the other members’ parts and thus verbally or on their own identifying the ‘teamwork and task work requirements’. This again gave them the insight to be able to articulate their needs in terms of better ensemble work. The observations of the rehearsals supported these claims: it can be seen that the ensemble always tried to figure out what needs to happen and what the requirements are in order for the piece to be successfully performed. They asked each other what they were doing in certain places and gave feedback regarding to their own instrumental parts.

The ensemble possessed a mix of competencies in terms of the experience level, age and personality. Sam was the only participant who remarked upon this saying that different people experience things in different ways and that the strategies allowed everyone to understand and progress in the rehearsals. Sam also mentioned that these differences in understanding and perceiving things led to some conflict:

I think the struggle came in in discussing things and, and people perceive things in different ways – you will understand something in a certain way but another person you will have to explain the same thing to in a different way in order for them to understand. I think that sometimes made it difficult, not impossible to work, uhm in some rehearsals that just made the process a bit longer I think.

While observing the recordings of the rehearsal the different competencies became very clear and although it did sometimes lead to things taking longer than they needed to, as Sam also says, it did also force the ensemble to look at problems and situations in more than one way, thus leading to more in-depth knowledge of the score and the ensemble requirements.

As the ensemble who participated in this study was an ad hoc ensemble, the characteristic of consciously incorporating new members could not be observed. The characteristic of distributing and assigning work thoughtfully was not touched on by any of the participants in the interviews. However, in the observation I could observe instances when work was distributed in terms of showing entries or points of arrival – this distribution, however happened in an organic manner and was not consciously discussed.

In observing the rehearsals I noticed three instances when the team's physical workplace was examined and adjusted. The first happened in the first rehearsal when they had to decide upon on how to place the sheet music in the piano so that the clarinettist and flautist could see it, and in the same rehearsal the ensemble discussed the best seating arrangement so that they could have optimum communication. The third instance occurred when there was a suggestion for the clarinettist and flautist to stand because the chairs were restricting their movements.

4.10 Patterns and links between the themes

To conclude this chapter, I will interpret the observations to show how the theoretical lens (Expert Team Theory) enables me to understand the rehearsal process as a dynamic confluence of experiences that are created through the interaction of the ensemble members.

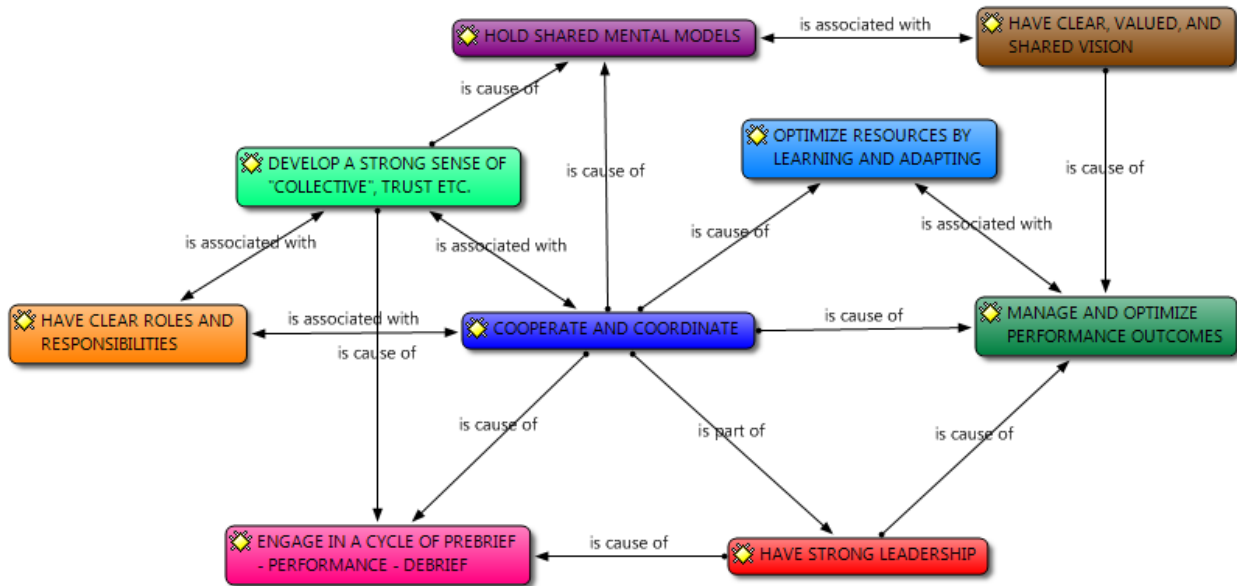


Figure 4.10: Network view of all themes

Although themes were discussed separately, they are interrelated and link with each other as illustrated in figure 4.10. In the discussion that follows, some thoughts are presented in parallel in an attempt to show the web-like way in which different themes developed. I will therefore repeat some thoughts, always drawing new relationships among the various aspects of the dynamics and experiences that shaped the process which I investigated.

The most salient aspect of the process consisting of five rehearsals and the concert performance, through which this ensemble grew as an expert team, can be summarised by the theme ‘cooperate and coordinate’. When the research started, the ensemble was characterised by a mix of competencies and levels of experience, background knowledge and abilities. The members were aware of this mix, and some of them commented on their impressions of other members, and on themselves and also on their views regarding the dynamics in the group. They were faced by the challenge of performing to a high level a kind of composition that was

not music that they play every day. During the first rehearsal the ensemble was still hesitant in their communication and interaction, because they were still getting to know each other and trying to understand what it was that made different people tick. They also did not know the music in terms of the interaction that was expected; they were especially uncertain about how they had to act in order to interpret the music **together**. The dynamics observed can be described as uncertain, but still productive.

The cooperation and coordination of the ensemble grew as they developed a better understanding of the music and of each performer's potential, way of working and real contributions. In order to accomplish this, the ensemble had to speak about the 'teamwork and task work requirements' of the score. A better understanding of the score and its requirements led the ensemble to more easily assigning work to different team members. The rehearsal process started with a verbal phase of coordination and cooperation that transformed itself as the ensemble developed a stronger sense of 'collective efficacy' and gradually gave way to cooperation in music and gestures.

Based upon the experiences of the ensemble members and supported by the observations of the video recordings, I could see how the 'coordination and cooperation' of the team developed in parallel to their 'sense of 'collective''. The ensemble spoke often about how, through the rehearsal process, their sense of 'collective' developed. The matter of 'collective efficacy' is central to the development of a 'strong sense of 'collective''. The ensemble developed their 'collective efficacy' by having a focus and knowing what it is that they had to do and also by being able to trust the intentions of their team members. The level of trust in the intentions of all members of the team was increased by the manner in which the participants spoke to one another. Everyone felt very safe voicing their opinions, because of the civil way in which they communicated.

As a way to develop trust and a sense of the collective within the ensemble, the members of the ensemble managed (potential) conflict progressively better by realising when somebody would not have been able to discuss a topic further with another member of the ensemble. Keeping the different personalities of the members of the ensemble in mind when there was conflict and stepping back when

necessary helped the ensemble develop a sense of team orientation and motivated them to believe in their ability to succeed.

Team cooperation and coordination – together with their having a strong sense of ‘collective’ – caused the ensemble to engage more effectively in the cycles of pre-brief → performance → debrief as planned by the leader. For the team to engage in this cycle they needed to communicate freely and sometimes at some length, especially in the beginning of the process. Communication was clearly improved by dynamics which are discussed above under these two themes. The members started the rehearsal process with uncertainty regarding the music, the other members and the strategies implemented in the rehearsals. Still, when the ensemble members spoke it was out of a need and willingness to help each other. This increased with each rehearsal. Just as verbal cooperation gave way to cooperation in music and gestures, the focus of the ensemble changed from focusing on smaller goals within each rehearsal to bigger or more holistic goals.

Based upon the experiences of the ensemble members as reported in their interviews and supported by the observations of the video recordings, strong leadership was an integral part of this growth in cooperation and coordination. All three members of the ensemble reported on leadership, stressing the following aspects. Strong leadership gave the members a feeling of security in the rehearsal as they knew exactly what it was that they had to do and it also helped to guide the ensemble through uncertain stages and aspects of the rehearsal process.

The ensemble felt comfortable giving situation updates to the leader and to each other during the rehearsal process and this increased as the process continued and evolved. This method of communication is very closely related to the structure of the rehearsals as can be understood from the theme of ‘engaging in a cycle of pre-brief → performance → debrief’. The leader was the instigator and presenter of the strategies. The manner in which the leader presented this strategy clearly influenced the way the ensemble experienced the process and the manner in which they developed.

The growth of the cooperation and coordination of the ensemble can also be seen in the essential part that was played by their having clear roles and responsibilities and

their further defining (as the process unfolded) of these roles. The participants described how the nature of the music needed the ensemble to 'understand each other's roles and how they fit together'. Talking about and discussing the roles that each of the members played and how it all fitted together gave the ensemble more clarity on how the ensemble was compiled and what the task requirements were. This led to growth in the cooperation and coordination and the development of a strong sense of 'collective'.

Based upon the interviews and the video observations it was clear that the ensemble managed and optimized their performance outcomes. The ensemble was able to do this because of their always increasing levels of cooperation and coordination. Another factor caused this increasing optimisation, the one reported under the theme 'have clear valued and shared vision' which is associated in the data with evidence of 'hold shared mental models'. Their cooperation and coordination supported by their sense of 'collective' helped the ensemble members to realise the need to help each other by ensuring they provided the information that they needed. The more the cooperation and coordination improved the more the group spoke and this led to a greater amount of information being shared. This increase in the amount of information given to the ensemble led to their making fewer errors, increasing their chances of mission success, and adding to the sharing of mental models and vision.

A cooperative and coordinated ensemble is an ensemble that will optimize their resources by learning and adapting. Self-correcting, a category under this theme, was evident in both the interviews and the observation of the rehearsals. This is very important characteristic of any group that wants to achieve success: participants need to frequently check on themselves – that they were playing correctly and cooperating with other performers. Self-correcting is a parallel to compensating as this will lead to higher standards of performance. Both of these aspects are greatly affected by the group's cooperation and coordination because a group that is cooperative is invested in the group's performance and will improve this standard by all means possible, also through well planned self-correcting.

The musical language of *Eleven Echoes of Autumn* ensures that players cannot do anything as individuals and that they need a vast amount of non-verbal communication and interaction between the members of the ensemble to be

performed successfully. A cooperative and coordinate team is one that wants to work together and feels a camaraderie within the ensemble. With the increase and growth of this aspect the ensemble got to know the other members' body language and gestures and thus the team did not feel the need to communicate overtly. In the same manner this increase in the team's sense of "collective" and cooperation gave them a clear vision of what it was that they were trying to do. This common purpose ensured more focus from the ensemble and led them to optimize their performance outcomes.

Chapter 5: Conclusions

In the previous chapter I showed how Expert Team Theory allows me to understand the dynamic growth process of the new music ensemble I studied. Using Expert Team Theory is one way of explaining the application of Expert Team Theory to the design of goal-orientated rehearsal strategies. It is clear that the data suggest that the theme of cooperation and coordination lies at the centre of this process. This observation led me to a related theoretical lens, namely cooperative learning through which I will now further interpret my findings in order to explain the application of Expert Team Theory to the design of goal orientated rehearsal strategies from another, related angle.

5.1 Cooperative learning

In this chapter I answer the main research question by interrogating my findings in terms of cooperative learning. In order to do this, I re-interpret the process that I described in section 4.10 in terms of cooperative learning.

One category of the central theme, ‘cooperate and coordinate’ is ‘mix of competencies’. Views on cooperative learning hold that every group member adds to the resources of the team. A mix of competencies increases the “range of abilities, expertise, and skills” and gives a variety of points of view (Johnson and Johnson, 2013:452-453). The mix of competencies in this new ensemble, ranging in age, experience level and training, added to the success of the ensemble, as mentioned in some of the interviews.

Cooperative learning emphasizes the importance for students to simultaneously engage in task work and teamwork requirements – with this type of learning one cannot complete the task work if one does not learn teamwork skills (Johnson & Johnson, 2013:459). The evidence gathered from the interviews and observations showed that the ensemble members engaged in task work to fulfil teamwork requirements, and that they grew in their understanding of this important aspect. The participants stated in their interviews that the nature of the music made it necessary to talk about the task requirements of the piece. Seeing teamwork in this light corresponds with the view described by Slavin (1991:73) that all the methods of

cooperative learning contain the idea that students learn together and are responsible for each other's progress and also their own progress.

As the new music ensemble grew and developed a better sense of collectiveness, the interpersonal skills that the team needed for effective teamwork also developed. The ensemble's 'sense of collective' (a theme which also included 'trust') developed in parallel with their cooperation and coordination. Johnson and Johnson (2013:120) state that: "[a]n essential aspect of group effectiveness is developing and maintaining a high level of trust among members." Trust is not a constant state, but it increases and decreases as the members of the group interact. The most important elements involved in improving trust are "openness and sharing", working hand in hand with "acceptance, support and cooperative intentions" (Johnson & Johnson, 2013:120-121). In the case of this new music ensemble, the data suggest that trust grew during the process. Ideas like 'sharing in a supportive environment with acceptance' was mentioned during the interviews. From the interviews and the observations it became clear that trust played a central role in the development of the collective efficacy of the group. In order for the ensemble to work effectively and make progress in the rehearsals they had to trust the intentions of the other members of the ensemble. In the interviews the members mentioned that the ensemble spoke to each other with respect and good intentions. Johnson and Johnson (2013:121) identified this as an important aspect of building trust and referred to this as "acceptance" – where the members of the group communicate with "high regard" for each other and for their contribution to the team's work.

Referring to their actions of managing (potential) conflict the ensemble members referred to keeping different personalities and approaches in mind. In cooperative learning these ideas are related to concepts of "support" and "cooperative intentions". "Support" refers to the manner in which the group recognizes their team member's strengths and capabilities and "cooperative intentions" aim to focus on the intentions of the group members and how they all aim for the same goal (Johnson and Johnson, 2013:121).

The theme of 'expert teams engage in a cycle of pre-brief → performance → debrief' corresponds well with a key aspect of cooperative learning: that instructors of cooperative learning classes make decisions about the class before that class by

formulating objectives, explain their instructions to the class and then also evaluate the process and the team's results (Johnson & Johnson, 2013:451-452). In the rehearsals the leader of this new music ensemble explained not only the rehearsal strategies to the ensemble members but also clearly established goals and encouraged the members of the ensemble to further establish and take ownership of the goals. The ensemble referred to the leadership that they experienced during the rehearsals and how they at all times knew exactly what they had to do and what the goals of the ensemble were. Communication had to be free and uninhibited for this cycle to be effective. As mentioned above, cooperative learning states that the building of trust allows a group to communicate without hesitation and thus building trust to ensure the necessary levels of communication. The ensemble exhibited "trustworthy behaviour" (Johnson & Johnson, 2013:122) and they reported that their communication was out of a need and willingness to help one another. Johnson and Johnson (2013:122) state that "trustworthy behaviour" is when the members of the ensemble are willing to respond to one another's taking of risks in a manner that will lead to the experience of positive consequences. This behaviour was also clear in the manner in which the ensemble approached the entire project. The ensemble accepted the rehearsal strategies with an open mind and a willingness to try to rehearse unfamiliar music in a new way.

This cycle, that includes anticipating potential problems and group feedback, corresponds with 'group processing' as described in cooperative learning, because the group reflects on what was helpful and what not and what they could possibly change. These actions helped to "clarify and improve the effectiveness" of the rehearsal process and helped the ensemble achieve their goals (see Johnson & Johnson, 2009:369).

Team leadership played a significant role in how the ensemble members experienced the rehearsals and more specifically how the strategies were applied during the rehearsal. The ensemble reported that the leader clarified the tasks and that this helped them to easily navigate uncertain stages in the rehearsal process and lead them to comfortably giving situation updates. Cooperative learning specifies the role of the instructor as follows: "1. Specifying the objectives for the lesson; 2. Making decisions about placing students in learning groups before the lesson is

taught; 3. Explaining the task and goal structure to the students; 4. Monitoring the effectiveness of the cooperative learning groups and intervening to assist with tasks” (Johnson, Johnson & Karl, 1991:58). According to the reported experiences of the ensemble members these leadership roles were also present in the rehearsal process. By specifying and explaining the objectives or goals of the rehearsals the ensemble knew what they needed to do and, furthermore, monitoring and evaluating the group effectiveness led the ensemble to give situation updates and communicate problems. The only role (as described in cooperative learning) that was not identified by the participants was the decision of the placement or composition of the ensemble. This of course happened before the rehearsals. The composition of the ensemble was taken into consideration both when deciding on the composition that the ensemble would rehearse and choosing the participants for the study, but this was not a collective decision.

Having clear roles and responsibilities allowed the ensemble to develop and improve their cooperation and coordination. In cooperative learning the importance of this aspect is also stressed. It was important for the instructor to assign clear roles to each member of the group. This ensured that each member of the group had a clear picture of what was expected of him/her and also what they could expect from their team members (Johnson & Johnson, 2013:454). In this study the most important division of roles was done by the composer in the score. The ensemble, however, found it valuable to understand each other’s roles and how they fitted together. In cooperative learning the assigning of roles helps to clarify what is expected of each member and where they fitted into the team (Johnson & Johnson, 2013:454). This process helped the ensemble clarify where they had to play and how their part added to the whole. As trained musicians they understood their roles, which became progressively clearer.

The ensemble found that holding shared mental models improved their cooperation and coordination. Cooperative learning also stresses this characteristic by stating the importance of the instructor’s knowing and communicating what the aim of every lesson is and what the group needs to accomplish. The instructor should clearly state these aims to the group (Johnson & Johnson, 2013:452). Based on the interviews clear instructions and goals caused the ensemble to develop shared

mental models through the clear communication by the leader. These shared mental models ensured that the ensemble knew what it was that they needed to communicate in order to provide the other members of the ensemble with the information that they needed. Johnson and Johnson (2013:121) identified “sharing” as an element of building trust within a group and correspond well with what the ensemble mentioned, because “sharing” refers to members providing the information that the rest of the ensemble needs to accomplish their goal.

This same aspect was clear when the participants spoke about optimizing their resources by learning and adapting while relying on each other. Johnson and Johnson (2013:458) refer to positive interdependence as “the heart of cooperative learning” and positive goal interdependence is when the entire group has one goal that they know they can’t achieve without each other. Cooperative learning states that the instructor has to make it clear to the learners that they have to work together and that each one in the group should do their part and make sure that the others also do theirs (Johnson & Johnson, 2013:458). From the interviews and observations of the rehearsals it became clear that the ensemble members had a clear goal in mind, and this goal become clearer and more important as the rehearsal process continued and the date for the concert approached. In the interviews the ensemble regularly mentioned that this was the kind of work that one could not do alone and that teamwork was essential. They stressed how this increased the need for a clear, valued, and shared vision by the ensemble in order to used non-verbal communication to perform the work successfully.

The development of cooperation and coordination within the ensemble, supported by the building of interpersonal trust, ensured that the ensemble developed a progressively clearer understanding of the body language and gestures of all members of the ensemble. Although it was not really necessary for the leader of the ensemble in this study to encourage the members to do their part, it was clear from their focus on self-correcting that this was very important to them. Slavin (1991:73) states that one of the concepts of the “student learning method” of cooperative learning is “equal opportunities for success” which, in this case, can refer to the members of the new music ensemble improving on their past performances to improve their contribution to the team. Compensating is parallel to self-correcting

(another aspect reported by the participants and observed in the recordings) and this again corresponds to an element of building interpersonal trust referred to earlier called: “cooperative intentions” (Johnson & Johnson, 2013:121).

5.2 Limitations of the study

The limited knowledge and experience regarding research methods and strategies of the researcher had an impact on this study. This study was conducted using few participants – with only one ensemble in the preparation of one work. Thus the data obtained from this study were the opinion of only three people. As the ensemble only prepared one work the influence of the rehearsal strategies and their applicability on the musical language of other composers were not tested. As seen in this study, the musical language of a composition plays a decisive role on the rehearsal process: what works for the musical language of one composer would not necessarily work for that of another composer.

The ensemble that took part in this study was an ad hoc ensemble and so the building of collective efficacy and team coordination played a big role in the effects that the strategies had on the ensemble. The participants also were not familiar with the style of the composition and this made the whole situation very new to them and their opinions were likely to be restricted because of the novelty of the situation. From the interviews it was clear that the ensemble had not put much thought into different rehearsal strategies and thus their opinions were not reflective.

The researcher did the interviews and this could have led to the participants giving less honest answers or saying what they thought they had to say instead of giving their opinions.

5.3 Recommendations for further research

There are many possibilities for further research using the rehearsal strategies that were developed for this study. Investigating a single ensemble preparing a full concert programme with pieces by different composers with different musical languages will give the researcher the chance to study the effect of these strategies on different musical languages and with a longer rehearsal period more data will be

collected. Collecting more data over a longer period of time will give the researcher a more in-depth understanding of the effect that the strategies have. If the researcher could have involved different ensembles rehearsing the same work different opinions could have led to very interesting and illuminating data, especially if the ensemble members had different levels of skill.

The development of collective efficacy played a big role in the rehearsal strategies and the effects of the strategies. In the present study the ensemble's development of collective efficacy was very obvious, because it was an ad hoc ensemble. When a similar study involves a permanent ensemble that already has a healthy group efficacy the effect that the strategies have on the efficacy will bring valuable new insights into the effect of these strategies.

There might be valuable insights to be gained by differentiating the roles that the researcher plays in the study. It's possible for the researcher to not be the leader of the ensemble in the rehearsals, but teach the strategies to another musician. Then the researcher could play in the ensemble, but not lead and even not perform and only observe. In the same way the researcher could also not conduct the interviews, but have an experienced assistant conduct the interviews.

The data collection could also be expanded by using group discussions in addition to interviews. Other ways of self-reporting, such as reflective journals, can be used.

The researcher can introduce cooperative learning theory earlier in the process, using it to inform the interview questions and in analysing the data.

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Appendix A

Dear Participant,

The following information is provided for you to decide whether or not you wish to participate in the present study. You should be aware that you are free to decide not to participate or to withdraw at any time without affecting your relationship with this department, the instructor, or the North-West University.

The purpose of this study is to explain goal orientated rehearsal strategies for a new music ensemble. The procedure will be a single, intrinsic case study design. At this stage in the research, the research process will be generally defined as perceptions of the course and making sense out of qualitative research at different phases in the course.

Data will be collected at two points – during four rehearsals of the ensemble and interviews with the participants about observations made during the rehearsal. Data collection will involve audio-visual material (video recordings made of the rehearsals) and interviews (transcripts of interviews with participants). I will be the only individual involved in the data collection process.

Do not hesitate to ask me any questions about the study either before participating or during the time that you are participating. I would be happy to share my findings with you after the research is completed. However, your name will not be associated with the research findings in any way, and only the researcher will know your identity as a participant.

There are no known risks and/or discomforts associated with this study. The expected benefits associated with your participation are the opportunity to work on the performance of a musical work, to play in a unique ensemble setting and experiencing goal orientated rehearsal strategies as an active participant. If submitted for publication, a by-line will indicate the participation of all members of the ensemble.

Please sign your consent with full knowledge of the nature and purpose of the procedures. A copy of this consent form will be given to you to keep.

Signature of Participant: Date.....

André Oosthuizen, Principal Investigator

Appendix C

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THE MAKING OF A DREAM TEAM

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Table 25.1. Expert team performance effective processes and outcomes

Expert Teams . . .

Hold shared mental models
They have members who anticipate each other.
They can communicate without the need to communicate overtly.

Optimize resources by learning and adapting
They are self correcting.
They compensate for each other.
They reallocate functions.

Have clear roles and responsibilities
They manage expectations.
They have members who understand each others' roles and how they fit together.
They ensure team member roles are clear but not overly rigid.

Have a clear, valued, and shared vision
They have a clear and common purpose.

Engage in a cycle or discipline of prebrief → performance → debrief
They regularly provide feedback to each other, both individually and as a team.
They establish and revise team goals and plans.
They differentiate between higher and lower priorities.
They have mechanisms for anticipating and reviewing issues/problems of members.
They periodically diagnose team "effectiveness," including its results, its processes, and its vitality (morale, retention, energy).

Have strong team leadership
They are led by someone with good leadership skills and not just technical competence.
They have team members who believe the leaders care about them.
They provide situation updates.
They foster teamwork, coordination, and cooperation.
They self-correct first.

Develop a strong sense of "collective," trust, teamness, and confidence
They manage conflict well; team members confront each other effectively.
They have a strong sense of team orientation.
They trust other team members' "intentions."
They strongly believe in the team's collective ability to succeed.
They develop collective efficacy.

Manage and optimize performance outcomes
They make fewer errors.
They communicate often "enough"; they ensure that fellow team members have the information they need to be able to contribute.
They make better decisions.
They have a greater chance of mission success.

Cooperate and coordinate
They identify teamwork and task work requirements.
They ensure that, through staffing and/or development, the team possesses the right mix of competencies.
They consciously integrate new team members.
They distribute and assign work thoughtfully.
They examine and adjust the team's physical workplace to optimize communication and coordination.
