Chapter 6

A multiple-media study package for sight-singing

6.1 Introduction

In this chapter, the design of a multiple-media study package is briefly discussed. The music criteria (Chapter 2) and media criteria (Chapter 3) are used to design this study package. The study package is designed according to the *Dick and Carey systems approach model for designing instruction.* Dick and Carey describe this model in a book entitled *The systematic design of instruction* (1996). The different steps that were followed to produce a multiple-media study package for sight-singing are explained in the present chapter. Suggestions on the implementation of the study package conclude Chapter 6.

As explained in previous chapters, the sight-reader needs to associate the symbols of music notation with the musical sounds they represent. Based on this notion, it is argued that combining a workbook with a CD recording in a study package should provide the learner with the necessary visual and aural stimuli to master sight-singing.

Instructional design can have a significant influence on the outcome of the instruction. Various learning theories such as behaviourism, conctructivism and cognitivism were formulated by leading educationists such as I. Pavlov, B.F. Skinner and R. Gagné, to explain the learning process. Because learning is an internal, mental process, and because people and learning environments differ, no single learning theory can be regarded as relevant for all people and all situations. Dijkstra (1997: 20) explains that the ideal instructional theory should include all aspects of the process of teaching and learning. To produce the most effective instruction, it is therefore of the greatest importance to consider the theory of instructional design.

It is not the purpose of this thesis to elaborate on different instructional theories, but rather to suggest a practical way to design and present instructional material for sight-singing. A brief discussion of instructional design should be sufficient to provide a background to the design of the sight-singing study package.

6.2 The Dick and Carey systems approach model for designing instruction

Using a proven, systematic model for instructional design may help to ensure successful instruction. No instruction or instructional design can guarantee that learning will take place. However, instructional design can help to ensure logical, systematic instruction, which is most likely to result in the desired learning. Loh (2001: 4) states that the Dick and Carey model for systematic instructional design was first taught in 1968 and is "reputedly one of the most widely known performance-orientated models for instruction development". According to Dick (1997: 56), this model is not only used in the formal education sector, but also by business and industry.

The different phases of this model are:

- Identify an instructional goal,
- Conduct an instructional analysis,
- Identify entry behaviours and characteristics,
- Write performance objectives,
- Develop criterion-referenced assessments,
- Develop an instructional strategy,
- Develop instruction,
- Design and conduct formative evaluation,
- Revise the instruction, and
- Conduct summative evaluation.

Dick (1997: 60) explains that their model is a systems model; therefore each step's output is the next step's input. This implies that every step in the model forms an essential link in the instructional design process. By using this model as a basis to design a multiple-media study package for sight-singing, the researcher can be sure that the instructional materials will be effective. Starting with an analysis of the instructional goal and performance objectives, there is little doubt about what the instruction will achieve. Developing instruction according to Dick and Carey's suggestions includes action research on a small scale: revising the instructional materials and doing a field trial on a bigger scale. By trying the instructional material on an experimental basis before implementing it on a large scale, the designer can eliminate many weaknesses of the instruction. A flow diagram of the Dick and Carey model is presented in Figure 6.1.

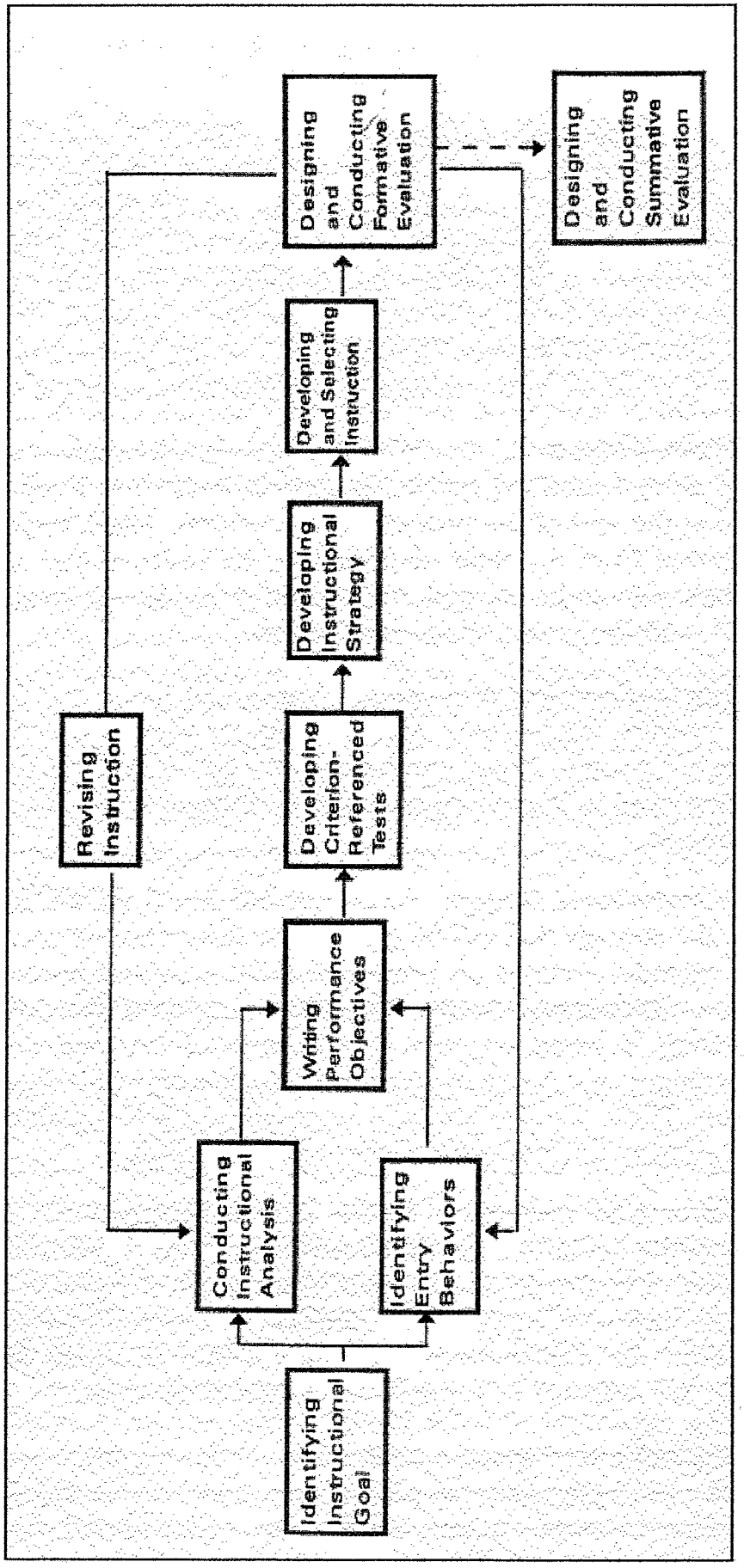

Figure 6.1: ***The Dick and Carey systems approach model for designing instruction*** **(Dick & Carey 1996: 2-3)**

In a critical evaluation of the Dick and Carey model, McGriff (2001: 3) explains that this model accepts that "learning is based on mastering a set of behaviours which are predictable and therefore reliable. The correct instructional analysis and instruction will lead to demonstrable skills." The same author continues to mention the fact that learners' behaviour is not necessarily predictable as a limitation of the Dick and Carey model. Although the desired learning outcome of instruction cannot be guaranteed, well-planned instruction should help to ensure a reasonable success rate for instruction.

6.3 Designing a multiple-media study package for sight-singing

The author used Dick and Carey's systematic design model to design a multiple-media study package for sight-singing. The reasons for using this model are the following:

- This is a widely accepted and well-proven model for instructional design.
- A sight-singing programme designed according to the Dick and Carey model will most probably provide effective instruction.
- The Dick and Carey model includes a complete development programme for well-planned instruction.
- The aim of the thesis is to develop an effective sight-singing programme and not to invent a new model for instructional design. It is therefore appropriate to use an existing model for instructional design to develop a multiple-media sight-singing programme.

The different phases of the instructional design are described in the following paragraphs. Each phase of the design process is of significant value and can affect the final product. These phases are discussed individually.

6.3.1 An instructional goal

Instructional goals, according to Dick and Carey (1996: 27), are "clear statements of behaviours that learners are to demonstrate as a result of instruction." The instructional goal of the multiple-media study package on sight-singing is: **Learners should be able to sing tonal music from sight.**

6.3.2 An instructional analysis

Conducting an instructional analysis is to identify the relevant factors that are necessary to achieve the goal. This should result in a chart indicating the relevant skills for reaching the goal and the relationships between them (Dick 1997: 364). Dick and Carey (1996: 35-36) explain that by doing this analysis the author of a study package has to analyse the psychomotor, intellectual and verbal skills as well as the necessary attitudes that are necessary to achieve the goal. In a study package for sight-singing, the psychomotor skills (to read and to sing) and the intellectual skills (knowledge about the music notation) are the most important. Verbal skills are needed to sing, while the singer needs a positive attitude. With a positive attitude towards the subject, the student will practise until he has grasped each concept that is presented in the programme.

Learning to sing from sight has two major components, namely learning to sing pitch and learning to sing rhythm. Although these two components form a whole, they can be mastered independently of each other. In Table 6.1, compiled by the author of this thesis, the music concepts that learners should master to equip them to sing from sight are listed. The contents are presented in a linear way, indicating that each concept builds on the previous ones. The table is used as a guideline to compile the multiple-media study package for sight-singing.

Table 6.1: Learning content of a multiple-media study package for sight-singing

No.	Melodic concepts	Rhythmic concepts	Combined concepts
1.		Beat and metre	
		Crotchets and minims	
		Time signatures	
2.	Reading pitch		
3.	*So, mi*		
			Melodies with *so, mi*
4.		Quavers	
			Melodies with quavers
5.	*Do*		
			Melodies with *do, mi, so*
6.		Different metres	
			Melodies in different metres
7.	*La*		
			Melodies with *la, so, mi, do*
8.		Semibreves	
9.		Rests	
			Melodies with rests and semibreves
10.	Notenames in the treble clef		
11.	High and low notes		
			Melodies with high and low notes
12.	*Re,* the pentatonic scale		
			Melodies in the pentatonic scale
13.		Anacrusis	
			Melodies with an anacrusis
14.		Tied notes	
15.		Dotted notes	
			Melodies with tied and dotted notes
16.	*Fa*		
			Melodies with *fa*
17.		Semiquavers	
			Melodies with semiquavers
18.		Dotted quavers	
			Melodies with semiquavers
19.	*Ti,* the major scale		
			Melodies in the major mode

20.	Note names in the bass clef		
			Melodies in the bass clef
21.	Notes on the keyboard		
22.			Compound time
		Melodies in compound time	
23.	Sharps		
		Melodies with sharps	
24.	Flats		
			Melodies with flats
25.	Natural sign		
			Melodies with natural signs
26.	Find *do*		
27.		Irregular groupings	
			Melodies with irregular groupings
28.	Natural minor		
			Melodies in the natural minor
29.	Harmonic and melodic minors		
			Melodies in the harmonic and melodic minors
30.		Melismas	Melismas
			Melodies with Melismas
31.	Four part music		
			Four part music
32.	Musical terms		

6.3.3 Identifying entry behaviours and characteristics

Dick and Carey (1996: 64-65) explain that entry behaviours are the knowledge and skills that learners should possess before starting with the instruction. To commence with sight-singing instruction, it is very important that learners should have mastered specific knowledge and skills, which are not all necessarily related to music. The learner should be able to:

- read fluently in his mother tongue,
- understand English,
- do elementary mathematics: add, subtract, multiply and divide, and be able to work with fractions, and
- sing in tune.

This knowledge and these skills are needed throughout the sight-singing course. The ability to read is applied to music in a similar way as it is applied to language. The explanations of music concepts are in written form and the sight-singers are confronted with lyrics, therefore the ability to read is important. In South Africa, which has eleven official languages, it is important that the learner should be able to understand the language in which the instruction is offered, in this case, English. Mathematics is important for understanding rhythms. The durations of tones are divided, added, subtracted and multiplied. This mathematics is done within the context of the metre. The ability to sing in tune is the last condition for entry, but it is probably the most important one. If a learner cannot sing a given pitch or a series of pitches accurately, he will not be able to sing from sight in a musically acceptable way.

6.3.4 Writing performance objectives

The performance objectives are derived from the instructional analysis. They describe the skills that should be mastered, conditions under which they will be performed and the criteria that they should meet (Dick 1997: 366). The relevant skills, conditions for performing the skills, and criteria are described in Chapter 2 of this thesis. The performance objectives for the sight-singing study package can be formulated as follows:

The learner should be able to sing from sight:

- all diatonic and chromatic intervals accurately, within the range of an octave,
- tonal melodies accurately in the pentatonic, major and minor modes,
- melodies with chromatic tones accurately,
- these melodies on the tonic sol-fa syllables or on the lyrics, if it is provided,
- the following durations of tones in rhythmic exercises and in songs: semibreve, minim, crotchet, quaver and semiquaver,
- melodies in simple and compound duple, triple and quadruple time,
- melodies that use irregular rhythm patterns,
- melodies that contain melismas, and
- his own vocal part in a four-part harmonisation, while the other parts are being played.

Having mastered these skills implies that the learner also understands the knowledge that is relevant to each skill.

6.3.5 Developing criterion-referenced tests

Accessing the learner's progress enables the teacher to amend his tuition and revise certain aspects when it is necessary. It also helps the learner to realise whether he understands the concepts being tested, and whether he mastered the relevant skills. Dick and Carey (1996: 142) explain that criterion-referenced tests are tests that are designed to measure a specific set of objectives. Each of the objectives (outcomes) for the sight-singing study package should therefore have corresponding tests.

Mastering the skills related to sight-singing can have different meanings for different people. The teacher should not always expect perfect sight-singing. He should rather determine whether the learner understands the relevant concept, and whether he can apply his knowledge.

6.3.5.1 Evaluation of sight-singing

Different types of evaluation are applicable to teaching and learning sight-singing. The learner, the teacher and fellow learners can participate in the evaluation process. Seeing that most of the performance objectives for the sight-singing study package involve reading and singing, only general criteria for these are suggested. These criteria will remain the same regardless of the level of sight-singing. Sight-singing can be evaluated according to the following criteria. The sight-singer should:

- keep a steady beat,
- accent the correct pulses within the metre,
- sing the correct rhythms,
- sing the lyrics correctly, regarding rhythm, pitch (and pronunciation),
- identify the metre correct as simple or compound time,
- identify the key and mode of the music,
- start on the correct beat,
- start on the correct pitch,
- sing the intervals between the different pitches correctly,
- sing the melody correctly,

- end on the correct pitch,
- sing in musically acceptable phrases,
- choose a suitable tempo, and
- sing through the piece, without stopping.

6.3.5.2 Assessment instruments for sight-singing

Several types of assessment instruments can be used to evaluate learners' progress in sight-singing. The assessment instruments that are suitable for the multiple-media study package for sight-singing presented in this thesis are the following:

- **Continuous self-evaluation:**

The sight-singer should constantly evaluate his efforts, as explained in paragraph 3.4.1 and 3.4.2. This is done in every exercise he sings from sight. By anticipating the music before singing it and by listening carefully to himself, the learner can evaluate his efforts at sight-singing.

- **Self-evaluation exercises:**

In these exercises the starting note is given on a CD, followed by metronome beats for the length of the exercise. The learner is expected to sight-sing the exercise in time with the metronome. After he has sung the exercise, a role model on the CD sings the same exercise, enabling the learner to compare the role model's version of the exercise to his own. The starting tone is given again, followed by metronome clicks. The learner can now sing the same melody again, correcting his mistakes.

- **Rhythmic and melodic tests:**

A number of tests is provided for every set of exercises. The tests for rhythmic and melodic exercises consist of rhythms or melodies similar to those in the workbook. The learner should be given one to two minutes to study the test without singing (or playing) it. He should then sing the exercise without stopping. The teacher or peer who is listening should evaluate the sight-singer's effort according to the criteria mentioned in paragraph 6.3.4.

- **Written tests:**

Tests in which learners are expected to write down the answers are included for note names and key signatures. For each of these concepts, there is an exercise in the workbook and a similar one in the textbook. Doing both these exercises gives learners the opportunity to apply their newly acquired knowledge. The correct answers to these tests are provided at the back of the testbook.

- **Keyboard-tests:**

A test on keyboard sense can be played on a keyboard instrument such as a piano, organ or even a melodica. A series of notes in the treble and the bass clef is given and the learner should play each note on the keyboard. A maximum of 5 seconds can be permitted between the notes. These tests, included in the testbook, are similar to the exercises in the workbook.

- **Exercises in the workbook:**

Each exercise in the workbook can be used as a test. It is advisable that the teacher should listen to a randomly selected exercise, from the set of exercises, on a particular concept. When the teacher is satisfied that the learner has mastered the specific concept, he can give the learner a test from the testbook.

- **Echo exercises:**

The echo exercises can be used as tests if the teacher asks the learner to sing specific phrases from an exercise. The learner should practise these exercises, listening to the CD to familiarise himself with each phrase. After echoing the exercise, the learner should sing the phrases in random order, ensuring that each one is sung correctly.

These different types of tests should enable the teacher to evaluate a learner's progress in sight-singing. The learner can use the same criteria to evaluate his own sight-singing. The evaluation process gives teachers the opportunity to make learners aware of their mistakes and to guide them towards accurate sight-singing.

It is important that the teacher should keep the learner's age and musical abilities in mind when he is evaluating sight-singing. These two factors can be a guideline for the teacher to know what grade of perfection he can expect when evaluating each individual pupil.

6.3.6 Developing an instructional strategy

The term "instructional strategy" refers to the "various aspects of sequencing and organising the information and deciding how to deliver it", according to Dick and Carey (1996: 178). Dick and Carey (1996: 184) distinguish six major components of an instructional strategy, namely:

- media selection
- pre-instructional activities
- instructional presentation
- learner participation
- testing
- "follow-through".

The instructional strategy for designing sight-singing instruction is described in terms of these components in the following paragraphs.

6.3.6.1 Media selection

Selecting appropriate media for a sight-singing-study package is described in Chapter 4. The author's conclusion is that a workbook with a CD (or cassette) recording is the most suitable medium to use for this study package. The workbook conveys music notation and written explanations, while the CD conveys examples of singing and spoken explanations.

The learner, teacher and peers are utilised as human media, especially for evaluating sight-singing efforts. Music instruments (such as a piano or electronic keyboard) and audio aids (namely a metronome and a pitchfork) are also recommended for this programme.

6.3.6.2 Pre-instructional activities

It is essential that learners should be motivated to learn more about a given subject. Learners who start working through an instructional package on sight-singing most probably experience a need to improve their sight-singing skills. At the Drakensberg Boys' Choir School, new choristers are only allowed into the concert choirs when they have completed a sight-singing course. This motivates the students to master sight-singing as fast as possible.

All sight-singing students, most likely, experience a need to acquire sight-singing skills or to improve these skills. In the introduction to a practise book for the flute, Wye (1987: 2) states "If you do not want to play the flute, don't." This is also true of sight-singing: If one does not really want to learn sight-singing, one should not waste time and energy learning something one is not interested in. When students really want to learn sight-singing, they will practise and master every concept that is introduced.

The author presents sight-singing as a mystery that the learner can solve by playing a music detective. This approach can make the study package more fun for the learners, regardless of their ages. By following each clue, the learner gradually solves the *mystery of sight-singing.*

In the introduction to the study package, the author provides orientation regarding the contents of the package, and explains the advantages of sight-singing. This explanation may help to convince prospective learners of the great importance of sight-singing. The author also mentions the prerequisite knowledge required of sight-singing students.

6.3.6.3 Instructional presentation

The material that should be presented to learners can be summarised as explanations, examples, exercises and tests on the concepts that are essential to sight-singing. In the workbook, new concepts are introduced by using written text and examples in the form of music notation and illustrations. Exercises on each concept are provided as notated music. The tonic sol-fa system is used to help learners with pitch and the French time names are used to help them with rhythm.

Music examples and verbal explanations are provided on the CD that accompanies the workbook. Echo exercises are included in the workbook and on the CD to help learners master many of the concepts in this programme. For this type of exercises, the learner is expected to listen to the CD and echo (sing) every phrase while following the notation in the workbook. After completing the echo exercises on a particular concept, the learner should sight-sing the exercises for this concept in the workbook, without any help.

Utilising multiple-media enables the author to provide tests, music notation, illustrations and audio examples. This combination of media helps learners to understand the information that is presented and to practise the skills that are necessary for sight-singing.

The concepts presented in this multiple-media package for sight-singing are listed in Table 6.1. The order in which concepts are introduced is crucial in sight-singing instruction. It is of great importance that the different concepts are introduced in a logical order. This can enable the learner to accumulate all the knowledge and skills he needs to sing from sight. Because sight-singing is a skill that must be practised, it is important to revise previous concepts while practising new ones.

In this programme, melodic concepts are explained in terms of the different degrees of the scale being used. The tones of the pentatonic scale are introduced first, starting with *so* and *mi,* followed by *do, la* and *re. Fa* and *ti* are added to complete the major scale. Chromatic tones are introduced, followed by the natural, harmonic and melodic minors. Eventually, four-part music is explained and exercises are provided in which learners can practise singing their own vocal parts while the other three parts of chorales are being played.

The rhythmic concepts of beat and metre are introduced as an introduction to the sight-singing instruction. Using crotchet beats, in simple duple, triple and quadruple time, crotchets, minims and quavers are presented. Different beats are then introduced, followed by semibreves, rests, anacrusis, tied notes, dotted notes and semiquavers. Compound time is introduced next, followed by irregular rhythmic groupings.

A study package on sight-singing can hardly be complete without including the essential theoretical concepts of music and music notation. In this study package the following aspects of music theory are included: beat, metre, durations, irregular rhythms, intervals, note names, pentatonic, major and minor modes, as well as major and minor key signatures. Written exercises are provided on note names in the treble and the bass clef and on major and minor key signatures. A section with selected musical terms related to vocal music concludes the study package. The author aimed for a more holistic approach in the presentation of information in the study package. The written and graphic materials in the workbook, and the verbal explanations with music examples on the CD recording complement each other. The language used in the study package is as simple as possible, bearing in mind that the learner is not necessarily familiar with music terminology. Detailed discussions and explanations of music concepts are avoided, in order not to confuse the learner with unnecessary information. Several melodic and rhythmic concepts are presented by requiring the learner to echo phrases in which these concepts are used.

The multiple-media study package on sight-singing is titled *The mystery of sight-singing*. By presenting sight-singing as a mystery and the learner as a music detective gradually solving this mystery, the author hopes to present this study package as a musical challenge. In the introduction and at the end of the instructional CD, a recording of music sung by the Drakensberg Boys' Choir is included. This choral music not only serves to make the recording interesting, but also demonstrates what can be achieved by a choir who can sing from sight. A figure of a music detective with a looking glass is used in the workbook to indicate when the learner should start listening to a specific track of the CD. This figure increases the visual impact of the workbook and breaks the monotony of the music notation. The illustrations also help to remind the learner that he should be looking (listening) for clues on the CD, and therefore listen very attentively.

The echo exercises and self-evaluation exercises are described on the CD, just before the first exercise of that specific kind. The same type of exercise is not explained a second time, because the learner should understand it the first time. The role models that sing on the CD are choristers from the Drakensberg Boys' Choir. Using the boys as role models instead of professional singers can suggest to sight-singing student that the concepts being introduced are within their reach.

6.3.6.4 Learner participation

It is of vital importance that the learner should participate actively in the sight-singing programme. Because practise is an essential part of learning sight-singing, this skill can only be learnt if the learner spends enough time reading music and re-creating it vocally. Every concept that is introduced should become part of the sight-singer's body of knowledge and he should be able to use it in the sight-singing process, as explained in Chapter 2.7.2.

The student is expected to participate in the learning process by

- singing from sight,
- evaluating his own sight-singing efforts,
- reading the text in the workbook and the music notation,
- listening to the instructional CD and to his own sight-singing efforts,
- writing answers to some music theory exercises, and
- memorising some singing-related musical terms.

In situations where a group is learning to sing from sight, individual members of the group can take turns to sight-sing with the rest of the group listening. While listening, the group can evaluate each other's sight-singing. The exercise of singing in front of other people and of evaluating others' sight-singing can benefit both the singer and the listener. Singing from sight while someone is listening encourages learners to sing accurately and without hesitation. Evaluating fellow students' sight-singing requires that the learner should read the notation and anticipate the sound. He should then compare the singers' efforts to the anticipated sound and note specific mistakes in order to improve his own sight-singing.

6.3.6.5 Testing

Both pre-tests and post-tests are important in the planning of instruction. Dick and Carey (1996: 188) explain that learner's opinions of the programme can be helpful in the process of improving instruction. Testing learners' opinions before, during and after completing the instruction can provide the programme's developer with valuable information. Because he did action research, developing sight-singing instruction, the author could test participants both formally and informally. As a pre-test, learners had to pass a music audition as well as an academic admittance test. These tests ensured that all the learners meet the entry requirements for the sight-singing course. Working with small groups of learners (17-35), the author could evaluate the instructional material while the learners are using it. He could also amend the instruction when certain explanations or exercises were not effective.

Learners are tested when they think that they are able to sing all the exercises of a section in the workbook. The testing consists of two phases, namely singing one or more prepared exercises from the *Workbook*, and sight-singing an unprepared exercise from the *Testbook*. It is important that the learner should not prepare the exercises from the *Testbook*, to ensure that his sight-singing ability is evaluated and not his memory. These tests can help teachers to evaluate learners' sight-singing efforts. They can also help teachers to determine when a learner does not understand a particular concept. When he notices shortcomings in knowledge or skills, the instructor can ask the student to go back to a specific part of the instructional material, or he can provide an alternative explanation or more exercises.

Learners at the Drakensberg Boys' Choir School did a post-test at the end of the sight-singing course to determine whether they had reached an acceptable level of sight-singing. The post-test is in the form of an audition in which each learner is required to sight-sing a passage in

front of the choir. The post-tests proved the instruction to be very effective, with the new choristers' level of sight-singing showing a great improvement to previous years' groups.

6.3.6.6 Follow-through

After completing a post-test, it is important that the results of the test should be "followed through". The instructional developer can use the results of the post-tests to improve the instruction, in an effort to eliminate all shortcomings. During the action research, the author amended the sight-singing programme several times according to the results of post-tests. More explanations were added and existing ones were improved. Several exercises were also added to make the programme more complete. A number of exercises were changed or replaced in an effort to ensure that the exercises are within each learner's reach.

6.3.7 Developing and selecting instruction

The function of individualised instruction, as Dick and Carey (1996: 225) explain it, is to present instruction to individual students through educational media. This enables learners to progress at their own pace and teachers to spend more time helping students who need help on specific aspects of the subject.

6.3.7.1 Selecting appropriate instructional materials

The instructor should evaluate various instructional materials to be able to select the most suitable material for the particular group of learners. This process gives him an indication of what is available and of the way other instructors approached the subject. A number of programmes for sight-singing instruction were discussed in Chapter 5 of this thesis. These materials are evaluated according to criteria regarding content, the use of educational media and according to Dick and Carey's general criteria for instructional materials. The evaluation of these materials indicated that they are not ideal for the choristers of the Drakensberg Boys' Choir. As a result of this, the author was compelled to compile a study package that would be specifically designed for this particular group of students.

6.3.7.2 Developing instruction

The author wrote an experimental workbook and a testbook for sight-singing. This workbook consists of explanations of sight-singing concepts, followed by exercises on each concept. The testbook contains similar exercises as the workbook, but learners were not allowed to

learn these exercises before sight-singing them. The aim of these tests is to ensure that learners are singing from sight and are not only memorising a number of exercises. This method produced good results and the students achieved a high standard of sight-singing. However, when learners progress at their own pace, the teacher had to explain each concept repeatedly to individual learners. This indicated that the instruction should be improved. In the next paragraphs, the formative evaluation of this instruction is discussed.

6.3.8 Designing and conducting formative evaluation; revising instructional materials

Formative evaluation, according to Dick and Carey (1996: 257), is "the process designers use to obtain data to revise their instruction to make it more efficient and effective." To obtain this data they recommend three typical phases of formative evaluation:

- One to one evaluation,
- Small-group evaluation, and
- A field trial of the instructional material.

In the author's situation at a specialist choir school, isolated in the Drakensberg, not all three phases of formative evaluation seemed to be realistic. The author was convinced that the new instructional material is a significant improvement on the material that was previously used. Therefore, it would be unfair to let only some boys use the new material. The solution was to let all the new choristers of 2001 at the Drakensberg Boys' Choir use the new material as an experiment. The management of the school granted the author permission to implement this experimental sight-singing method to try to reach a higher standard of sight-singing.

The formative evaluation of the multiple-media study package for sight-singing consisted of two phases. In both phases, the instructional material was used to teach sight-singing to the new choristers of the Drakensberg Boys' Choir.

6.3.8.1 Phase 1: Workbook version 1 and Testbook version 1

The initial instructional method consisted of a *Workbook* with explanations of concepts, sight-singing exercises and some written exercises as well as a *Testbook* with similar exercises as in the *Workbook*. This method was used to teach sight-singing to 31 new choristers in 2001. This can be regarded as "small group evaluation" (Dick & Carey 1996: 257) because the number of students was limited.

In *Workbook version 1*, the reading of pitch was introduced first, starting with *so* and *mi*. This was followed by the rhythmic concepts of crotchets, minims and crotchet beats. The order in which intervals were introduced is the one Kodály suggested for teaching songs to children, namely *so-mi, la, do, re, fa,* and *ti* (Nye & Nye 1985: 290). Sharps, flats and natural signs were then introduced, followed by the natural, harmonic and melodic minors. The beat is regarded as a crotchet until learners learnt to read all the tones of the pentatonic scale. Melodic and rhythmic concepts were introduced alternatively, with sight-singing exercises to practice each concept.

The *Testbook* contains tests for the melodic and the rhythmic exercises in the *Workbook* to evaluate learners' progress. No lyrics are provided with the exercises in the *Testbook* to enable the learners to concentrate on reading the music. The author firmly believes that every learner should frequently get the opportunity to be evaluated to improve his sight-singing. To prevent the learners from preparing the tests before being evaluated, only the teacher had a copy of the *Testbook*. When a learner is evaluated, he may study the exercise for about two minutes before singing it to the teacher.

The author's evaluation of his *Workbook version 1* and *Testbook version 1* led to the following conclusions:

- Learners did not master the concept of different durations as beats (e.g. 4/8 or 4/2 time) very well.
- There were not enough exercises to provide sufficient practice on each concept, especially for the combination of *la, so* and *mi*.
- Because each learner progresses at his own pace, the teacher had to explain the same concepts repeatedly, wasting a lot of time.
- The students did not have an audio source of reference except for the teacher and their peers.
- Using a separate testbook, and not giving learners an opportunity to sing the exercises before being evaluated enabled the teacher to see whether the learner is mastering the necessary skills for sight-singing.

Revising the *Workbook* and the *Testbook* included the following:

- *Workbook version 2* now starts with the rhythmic concepts *beat* and *metre.*
- Different beats and different durations are introduced simultaneously. The first durations used are crotchets and quavers. At the same time crotchet and quaver beats are explained.
- Echo exercises are included in *Workbook version 2,* as well as a concept CD recording *version 1* with role models singing the echo exercises. Choristers of the Drakensberg Boys' Choir are used as role models on the CD.
- Several exercises were added to provide more sight-singing practise.
- In *Testbook version 2* a number of exercises were replaced by easier ones. The order of the tests were changed according to the exercises in the workbook. (No tests for echo-exercises are provided because the teacher can evaluate the learner by asking him to sing some phrases of the echo-exercises.)

6.3.8.2 Phase 2: Workbook version 2, Testbook version 2 and CD version 1

A study package, consisting of *Workbook version 2* and *Testbook version 2* with a CD recording, *version 1*, was used to teach sight-singing to the 35 new choristers of the Drakensberg Boys' Choir in 2002. The second version of the workbook starts with beat and metre, followed by crotchets and quavers. At the same time both crotchet and quaver beats were introduced. Evaluating this combination of instructional materials consisted of a small group evaluation with the 35 choristers and consultation with experts on sight-singing, sight-reading and music education. The following persons were consulted:

- Mr. C.M. Ashley-Botha, director of music at the Drakensberg Boys' Choir School,
- Prof. E. Fourie, lecturer in piano and researcher on piano sight-reading at the University of Pretoria,
- Dr. P.E.O.F. Loeb van Zuilenburg, former lecturer in aural training at Stellenbosch University,
- Prof. J. Potgieter and Mr. J. Roos, music examiners for the University of South Africa, Pretoria,
- Dr. S.M. Schulz, lecturer in music education at the University of Pretoria,
- Dr. J. van der Sandt, lecturer in Choral Conducting at the University of Pretoria and the official choral conductor of the University, and
- Mr. V. van Zijl, cultural co-ordinator at the Rand Afrikaans University, Johannesburg.

The evaluation of *Workbook version 2*, *Testbook version 2* and *CD version 1* led to the following conclusions:

- Starting with rhythmic concepts emphasises the importance of rhythmic elements. Being able to distinguish between different metres helps learners to sight-sing with musically acceptable accents and phrases.
- Using different note values for the beat of the music as soon as the note values are introduced confused the learners. The concept of a steady beat against which different durations are sounded was not formed easily when different beats were introduced at the beginning of the instruction.
- Introducing *la* after *so* and *mi* does not establish a strong sense of tonality.
- Some learners found it hard to keep within the key in which they started.
- The concept of using echo exercises with a CD recording proved very successful. It provides an aural reference to the learners, giving them the option to listen repeatedly to the same examples.
- *CD version 1* was not user-friendly enough. More narration was needed to explain concepts and exercises. The author thought that an introduction had to be added to the workbook to explain how to use the study package and to encourage learners to master this useful skill.
- The echo exercises in the *Workbook version 2* consist of phrases of one to four bars in length. The result of using *CD version 1* with the Workbook indicated that learners could benefit more from short echo exercises than from longer ones. They sang most of the short phrases correctly after listening to the recording once, while they had to listen a number of times before singing the longer phrases accurately.
- *Testbook version 2* was effective as an evaluation tool. The majority of the learners could sing reasonable versions of the tests.

The study package for sight-singing was revised according to the evaluation of *Workbook version 2*, *Testbook version 2* and *CD version 1*. The following amendments were made:

- Only crotchet beats are now used until the pitches *so*, *mi* and *do* and the durations crotchets, minims and quavers have been introduced.
- *Do* is introduced after *so* and *mi* to strengthen the concept of tonality.
- Shorter phrases are used in the echo exercises.
- The French rhythm names are used to symbolise durations and rhythmic patterns.

- A new instructional CD, namely *version 2* was made to correspond with the echo exercises in *Workbook version 3*. Due to the great number of tracks for the instruction, the recording now consists of two CDs.
- *CD version 2* was made more user-friendly by starting with a welcoming introduction and narration added to explain certain concepts.
- Self-evaluation exercises were added. The aim of these exercises is to enable each student to evaluate his own sight-singing. The student is expected to listen to the starting tone on the CD and to sing the exercise from sight, while a metronome on the CD provides a steady beat. After the necessary number of beats, a role model sings the exercise, followed by more metronome clicks. The learner is asked to compare his singing to the recorded version and sing the exercises again, avoiding any mistakes.
- *Testbook version 2* was amended according to the workbook.

6.3.8.3 Phase 3: Workbook version 3, Testbook version 3 and CD version 2

Workbook version 3, Testbook version 3 and *CD version 2* were used to teach sight-singing to the new choristers at the Drakensberg Boys' Choir School in 2003. *CD version 2* proved to be a great improvement on *CD version 1*. With sufficient explanations, learners were less dependent on the teacher and could progress at their own tempo.

Using the study package consisting of *Workbook version 3, Testbook version 3* and *CD version 2* highlighted a number of inaccuracies in the workbook and on the recording. These were corrected, resulting in *Workbook version 4* and *CD version 3.*

The following changes were made to *Workbook version 3, Testbook version 3* and *CD version 2:*

- A section on dotted quavers was added.
- *Do* at the beginning of exercises is given as a stemless note, instead of a minim. This is done to avoid any confusion between the position of the tonic and the beginning of the exercise.
- A number of exercises which were too difficult were amended or replaced.
- Several tracks on the CD were replaced with more accurate singing.
- The *Testbook* was modified to correspond with the *Workbook* and the CD.

The final study package is presented in the Appendixes, namely:

- *Workbook version 4:* Appendix A
- *Testbook version 3:* Appendix B
- *CD version 3:* Appendix D

6.3.9 Summative evaluation

Summative evaluation is to evaluate the effectiveness of instructional materials and does not form an integral part of the instructional design process (Dick 1997: 367). The multiple-media study package for sight-singing could be used by different groups of learners. These learners and their teachers should evaluate the study package and give comments to the author. If necessary, the study package can be amended again, according to the recommendations.

6.4 Justification of the contents and presentation of the multiple-media study package for sight-singing

The grading of concepts and exercises in a sight-singing programme is of the utmost importance. In the following paragraphs, the order of contents and the presentation thereof are explained.

Learning to sing from sight can be a time-consuming process, demanding concentration and patience. To help ensure that the programme will be challenging and interesting, the title of the study package is "The mystery of sight-singing". This title implies that sight-singing is something regarded as mysterious and that this mystery can be solved by using the study package. On the front page, a drawing of the music detective with a magnifying glass indicates that the learner can play detective to solve the "mystery" of sight-singing. The detective figure is printed throughout the workbook to improve the visual impact of the workbook and to remind the learner that each track on the CD is a next step towards being a good sight-singer.

Rhythmic and melodic concepts are introduced alternately in this study package. The alternative would be to introduce all the relevant rhythmic concepts first and then the melodic concepts, or the other way round. The author preferred to introduce the melodic and rhythmic

concepts alternately to enable the learner to sing exercises from sight that are musically acceptable.

Each concept is briefly explained in the workbook and, where necessary, on the CD. The explanation is followed by an echo exercise. These echo exercises give learners the opportunity to listen to the specific concept being used in different phrases. They should echo each phrase and compare their singing to the role model's, while following the notation in the workbook.

The echo exercises are followed by a set of exercises which the learner should do without the help of the recording. In the melodic exercises, rhythmic and melodic concepts are combined to provide a musical context for the newly acquired knowledge and skills. A number of self-evaluation exercises are provided in which the learner is expected to compare his sight-singing effort to the singing of a role model. (The different types of exercises are described in Chapter 6.3.5.)

The tonic sol-fa system is used for all the melodic exercises, except where there are lyrics provided. This system is a well-proven aid to help sight-singers sing pitch accurately. Using this system eliminates several theoretical explanations. For example, the learner can sing *so* to *mi* without knowing that it is the interval of a minor third. The tonic sol-fa syllables are changed as follows when the tone is sharpened or flattened:

Table 6.2: Tonic sol-fa syllables

Degree of the scale	Natural	Sharpened	Flattened
1	*do*	*di*	*dô*
2	*re*	*ri*	*rô*
3	*mi*	-	*mô*
4	*fa*	*fi*	-
5	*so*	*si*	*sô*
6	*la*	*li*	*lô*
7	*ti*	-	*tô*

In this study package, *do* is the tonic in major keys, and *la* is the tonic in minor keys. This is the system that Curwin suggested when he introduced the tonic sol-fa in British schools. Using *la* as the tonic of a minor key simplifies the distinction between major and minor. Even if the sight-singer does not realise that a song is in a minor key, he should be able to sing it correctly if he uses the tonic sol-fa syllables.

An alternative way to sing the minor scale on tonic sol-fa, is to regard *do* as the minor tonic. The harmonic minor will then be *do, re, mô, fa, so, lô, ti, do.* In the *Training status method* (Oosthuyzen 1994), *do* is regarded as the tonic of minor keys. Learners who were taught with this system could not sing minor keys accurately. The author found that learners who do not have prior music knowledge can sing more accurately in the minor mode when they regard *la* as the tonic.

The French rhythm names are used as an aid with durations and rhythm patterns. These syllables are an aid for sight-singers to sing rhythms accurately. The author found that using these syllables has a positive effect on learners' performance of complicated rhythms, especially in compound time.

Sharps, flats and naturals signs are explained and exercises using them are provided before learners are expected to determine the key of each exercise. Using different sight-singing programmes, the author found that learners can identify key signatures easily if they understand the function of sharps, flats and natural signs in music. The reason for this order is that learners would understand key signatures well if they know the effect of accidentals and if they are able to sing notes altered by accidentals.

The minimum information is provided when concepts are explained. Lengthy, technical explanations of the relevant music theory are not necessary for the sight-singer. It is more important that he should be able to read music and reproduce it vocally.

6.5 Implementing the multiple-media study package for sight-singing

The multiple-media study package for sight-singing can be useful for any learner who is serious about learning to sing from sight. It is a study package that will take considerable time to work through, but a skill such as sight-singing takes a long time to master.

Learners can work through the study package in their own time, at home, or in a group, to develop their sight-singing skills. Excerpts from this study package can be used to teach sight-singing in the Class Music class. It is probably not possible to complete the whole method in the Class Music period, or in the portion of the learning area Culture and Arts.

This study package can be implemented to teach sight-singing to choristers, or to refresh their existing knowledge and skills.

Music teachers and choral conductors who did not receive sufficient training in the subject can acquire the skill of sight-singing by using only this study package, without any extra help.

6.6 Summary

In this chapter, the design of the multiple-media study package for sight-singing was described. The *Dick and Carey systems approach model for designing instruction* was used as a guideline for the design of the instruction. This is a proven and tested model for instructional design (Chapter 6.2). It covers all the aspects of designing instruction and was applied to designing a multiple-media study package for sight-singing.

The different phases described in this model were used as a reference to design the instruction. Planning instruction according to this model was a way to ensure an effective, well-motivated product. By analysing the instructional goals, the subject content and the needs of the learners, the designer was able to write instructional materials suitable for sight-singing instruction.

The instructional material encourages each learner to progress at his own pace. Regular evaluation of the learner's progress forms an integral part of this instruction. Different types of evaluation are included in the study package, namely self-evaluation by the student, written tests and sight-singing tests.

This study package can be implemented to improve the sight-singing abilities of singers, instrumentalists, choristers, choral conductors, music teachers and music enthusiasts. Because the study package uses a CD with a workbook, learners can study sight-singing without the help of a teacher, making it a valuable tool for self-directed learning.

The multiple-media study package for sight-singing, designed according to the model, is included in Appendix A (*Workbook),* Appendix B *(Testbook)* and Appendix D *(CDs)* of this thesis.