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Tsenang!: An interactive multimedia programme for learning Beginner Setswana

ABSTRACT

In this article the interactive computer-based nature of the Tsenang! programme for learning Beginner Setswana is explained. The structure and components of the programme are presented. The programme consists of four chapters which are divided into lessons. Specific functions, grammar, skills and lexical items are linked to the lessons. The programme also includes exercises for the assessment of the functions, grammar, skills and lexical items. The selection, order and systematic presentation of the lessons, functions, grammar, skills and lexical items as well as the exercises play an important role in the learning of Setswana in this programme. The learning process in Tsenang! is based on interaction and active participation i.e., the processes of learning and exploring new material, consulting related items, consolidating new knowledge and assessment.

Keywords:

language teaching; language learning; multimedia; computer assisted language learning; outcomes based education; Setswana

OPSOMMING

In hierdie artikel word die rekenaargebaseerde interaktiewe aard van die Tsenang! program vir die aanleer van Beginner Setswana verduidelik. Die struktuur en onderdele van die program word bespreek. Die program is saamgestel uit vier hoofstukke wat verdeel in verskillende lesse. Spesifieke funksies, grammatika, vaardighede en leksikale items is aan elke les gekoppel. Die program bevat ook oefeninge waarmee die funksies, grammatika, vaardighede en leksikon getoets kan word. Die seleksie, ordening en 'n sistematiese aanbieding van die hoofstukke, lesse, funksies, grammatika, vaardighede, leksikon en oefeninge speel 'n belangrike rol met die aanleer van Setswana in die program. Die leerproses in Tsenang! is gebaseer op interaktiwiteit en aktiewe deelname (dit is die prosesse van leer (verken nuwe studiemateriaal), die raadpleging van verwante items, die samevatting van verworwe kennis en toetsing).

Sleutelwoorde:

taalonderrig; taalverwerwing; multimedia; rekenaargesteunde taalverwerwing; uitkomsgebaseerde onderrig; Setswana

Introduction

Language diversity is a reality in South Africa and Deprez and du Plessis (2000: 112) point out that no single language fulfils the varied and diverse needs of the South African population. The focus regarding language in South Africa must be on the promotion of multilingualism and the development of previously marginalised languages in Africa.

According to statistics released by the Department of Social Service, Arts, Culture and Sport of the North West province (2001), 67% of the inhabitants of the North West province are mother tongue speakers of Setswana. Despite these statistics little is being done to promote the teaching and learning of Setswana as a second or foreign language in our business sector, schools and local community. More needs to be done to develop and promote Setswana.

Although statistics point out that Setswana is the language with the most mother tongue speakers in North West, the reality is that on ground level there is a move to English, "the language of commerce" by mother tongue speakers of the language. On the other hand, people who are non-speakers of Setswana either do not need to acquire Setswana as they do not need it in their daily lives while those that want to acquire it are faced with the numerous obstacles relating to foreign language learning. The situation in schools in the North West province at present is that teachers are faced with big classes, making the teaching of language on a basic level very difficult, if not impossible.

The past decade has been one of educational reform. Not only has there been a universal paradigm shift from an emphasis on teaching to learning, but the democratisation of the South African national education and training system has also resulted in an outcomes-based national qualifications framework (Department of Education, 1998:10).

Describing learning outcomes, improving assessment and refocusing institutional missions into learner-centred teaching strategies are increasingly favoured. Efforts are also made to transform traditional lecture-based tertiary learning experiences into more active and participatory ones for students (Bitzer, 1999).

To ensure that students are prepared for lifelong learning, contact time is increasingly reduced and independent resource-based study is encouraged (Botha, 2000).

The ideal circumstances for language learning is in a one to one situation. Therefore new ways of teaching language have to be sought and interactive multimedia has to be considered as an option. Realizing the benefits of interactive multimedia, Cairncross and Mannion (2001:156) state that:

> Multimedia has the potential to create high quality learning environments. The key elements of multiple media, user control over the delivery of information and interactivity can be used to enhance the learning process.

According to a computer search, no computer-based multimedia programme for the learning of Beginner Setswana is currently available. In an attempt to fill this gap and to promote learning of Setswana to the "general public", members of the department of African languages at the Potchefstroom University embarked on a project to develop a multimedia programme for learning Beginner Setswana. This programme originated from the "multi-language programme" which is a computer-based multimedia language learning programme that was developed at the Centre for Living Language at the KU (Katholic University) Leuven in Belgium due to the efforts of Professor Lut Baten. The programme for learning Flemmish was called Instap (step in / come in).

The PU for CHE obtained the rights to use the computer software in order to develop language learning programmes for selected African languages. In line with the name Instap it was decided to

call the Setswana programme Tsenang!. In this case the Setswana word Tsenang is used to invite more than one person to come in or to enter.

The programme was designed for learners who want to learn Beginner Setswana on a basic level. It could be used by school children, university students as well as the general public. The Instap software which we acquired consists of an authoring tool and a student programme. To construct the student programme, the purpose-built authoring tool is used. The main task of the developers was to select and develop the relevant Setswana material with the authoring tool. The student programme, which is the product that is used by the learner, could then be created accordingly.

The purpose of this article is to discuss the teaching and learning approach used in the development of the Tsenang! programme, as well as to give an overview of the "language" content of the programme.

The approach to language teaching and learning in Tsenang!

Grigorenko et al. (2000:1) state that:

> THE ABILITY TO LEARN LANGUAGE HAS been central to human existence for thousands of years, and the ability to acquire a foreign language (FL) or languages beyond one's native tongue is particularly important for adaptation in today's world. But not everyone learns FLs equally easily, whether in classroom settings or everyday life contexts. Even casual observation suggests that some people learn additional languages faster, easier, or better than others do.

It became clear with the development of the Tsenang! programme that the approach to follow to promote language learning is learner-centred. As indicated by Cairncross and Mannion (2001:157) the emphasis in language learning must be placed on "the need to involve the learner in activity when promoting deep learning".

Language learning is not a passive activity. Passive learning limits learners and causes them to mirror the presented knowledge rather than allow them to grow in their own experience (Brooks-Harris & Stock-Ward, 1999). In a passive learning situation learners have no time to reflect on the ideas presented, no time to formulate thoughtful questions, and no time to internalize information (Fisher; 2001).

Active learning on the other hand implies that learners will engage in some kind of learning activity that forces them to remain mentally alert as they manipulate the content information in a variety of ways. Active learning can be accomplished when students are engaged with the course content through analyzing, recalling, restating, interpreting, reflecting, considering and applying the information (Fisher, 2001). Brooks-Harris and Stock-Ward (1999) also state that active learning can be accomplished when students are engaged with the course content through reading, writing, discussing, listening and reflecting on ideas and issues taught in the course. These activities permit students to create a viable intellectual framework within which to store, access, retrieve and use the information they acquire (Fisher, 2001).

Tsenang! is based on an eclectic approach, which implies implicit as well as active learning, therefore the teaching strategy which underlies the programme should be viewed as an approach rather than a method (Wybenga; 2000:334).

For any design to be successful and in terms of developing usable and understandable products, Cairncross and Mannion (2001:156) point out that the design must be based on "the needs and

interests of the users and be informed by an understanding of their limitations and capabilities". They also indicate that:

> In the context of interactive multimedia learning applications this involves consideration of both human-computer interaction and learning theory.

Baten et al. (1998:4–7) also ask the following questions when referring to foreign language learning:

> How is a foreign language acquired?
> Where are the learners in the process?
> What is the following step for the learners?
> Which inputs stimulate the progress of the learning process?

In answer to question one Baten et al. (1998:4) hold the opinion that the order and route in which learners acquire a second language is the same but that the distance and rhythm may differ. The progress of learners differs based on individual differences and therefore the facilitator cannot determine the progress of the class.

Regarding the second question, Clark (1998:256) states that it is important to find out what learners must do to learn. Learners must therefore be physically active during the process of learning. In the Tsenang! programme the learner determines his own pace by consolidating his knowledge through attempting the exercises in the programme. The mentioned progress report in Tsenang! indicates the learner's pace and progress.

With reference to the third question learners attempting to learn Setswana by using Tsenang! can determine the next step they have to take sensibly, based on the consolidation of their knowledge at any given stage. Based on the results of the exercises that the learner attempted s/he decides on the following step. Thus, the learner may decide to do revision by revisiting and repeating certain items or s/he may decide to progress to a new lesson.

In answer to question four it is necessary to indicate the inputs that stimulate the progress of the learning process. The systematic presentation of the material by the facilitator enables the learner to find the route to learning. The content must be presented in an orderly fashion according to the structures of the language. Apart from the route that the learners choose, the order that is in the material must aid the learner. In the learning of a foreign language the facilitator must work selectively with the content of the language, according to degrees of importance. These three matters namely systematic presentation, order and selection also referred to as the SOS approach, lie at the centre of Tsenang! (Baten et al, 1998) (refer to Appendix A for an example of the implementation of this approach in Tsenang!).

Learning in Tsenang!

Learning in Tsenang! is achieved by reading or working through a lesson with the choice of consulting certain available tools at any stage, and then to consolidate acquired knowledge by assessing it in the exercises. This can be done in the order that the learner desires, as all parts are integrated and accessible at any time by a simple click of the mouse. The learner can either move to a new lesson or work through the same lesson again. Thus, a person who wants to learn Setswana as a foreign language through the Tsenang! programme works according to certain steps. These steps are:

> studying ,
> consulting,
> consolidating and testing.

Diagrammatically this can be illustrated as follows: See figures 1 to 4:

Diagram 1: Studying the lesson

```
                    Learn
                     ▼
┌──────────────────────────────────────────┐
│                   Study                    │
│                    ▼                       │
│          ┌──────────────────┐              │
│          │      Lesson       │             │
│          └──────────────────┘              │
└──────────────────────────────────────────┘
```
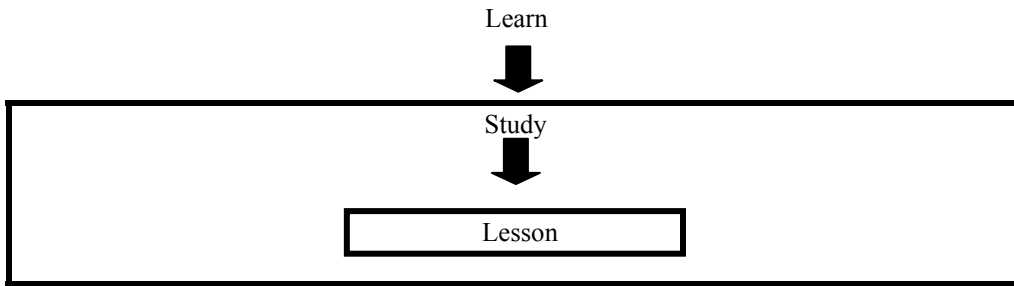
The main element in the learning process is the lesson. The learner reads through the text. S/he has the option to listen to the Setswana text. An Afrikaans or English translation is also available.
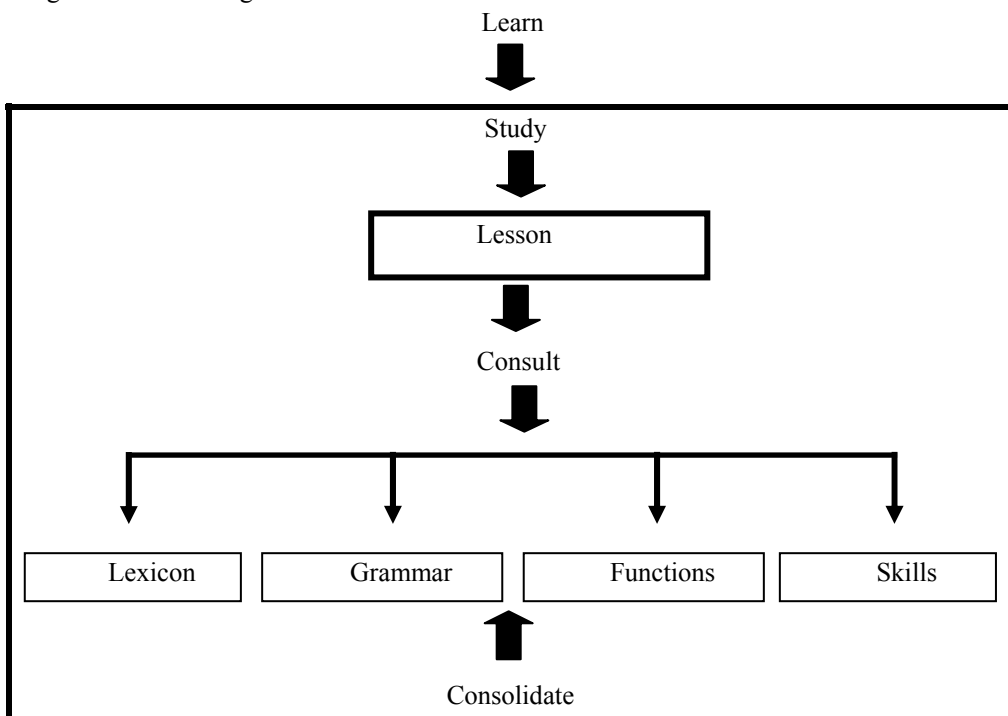
Diagram 2: Consulting linked items.

```
                    Learn
                     ▼
┌──────────────────────────────────────────┐
│                  Study                     │
│                    ▼                       │
│          ┌──────────────────┐              │
│          │      Lesson       │             │
│          └──────────────────┘              │
│                    ▼                       │
│                 Consult                    │
│                    ▼                       │
│   ▼         ▼          ▼          ▼        │
│ ┌──────┐ ┌────────┐ ┌──────────┐ ┌───────┐│
│ │Lexicon││Grammar │ │Functions │ │ Skills││
│ └──────┘ └────────┘ └──────────┘ └───────┘│
│                  ▲                         │
│              Consolidate                   │
└──────────────────────────────────────────┘
```

Linked to each lesson are:

    the lexical items contained in that lesson,
    grammatical items,
    functional items and
    linguistic skills

(These items are elaborated on later in the section on the structure and presentation of the content.)

By a simple click of the mouse the learner can refer to any of these items at any time. At this stage

the learner should have acquired the lexical items and their use in the sentences of the lesson, in other words the learner should know the lesson now.

Diagram 3: Consolidating knowledge by completing the tests on the linked items

Learn

Study

Exercises

Lesson

Test

Consult

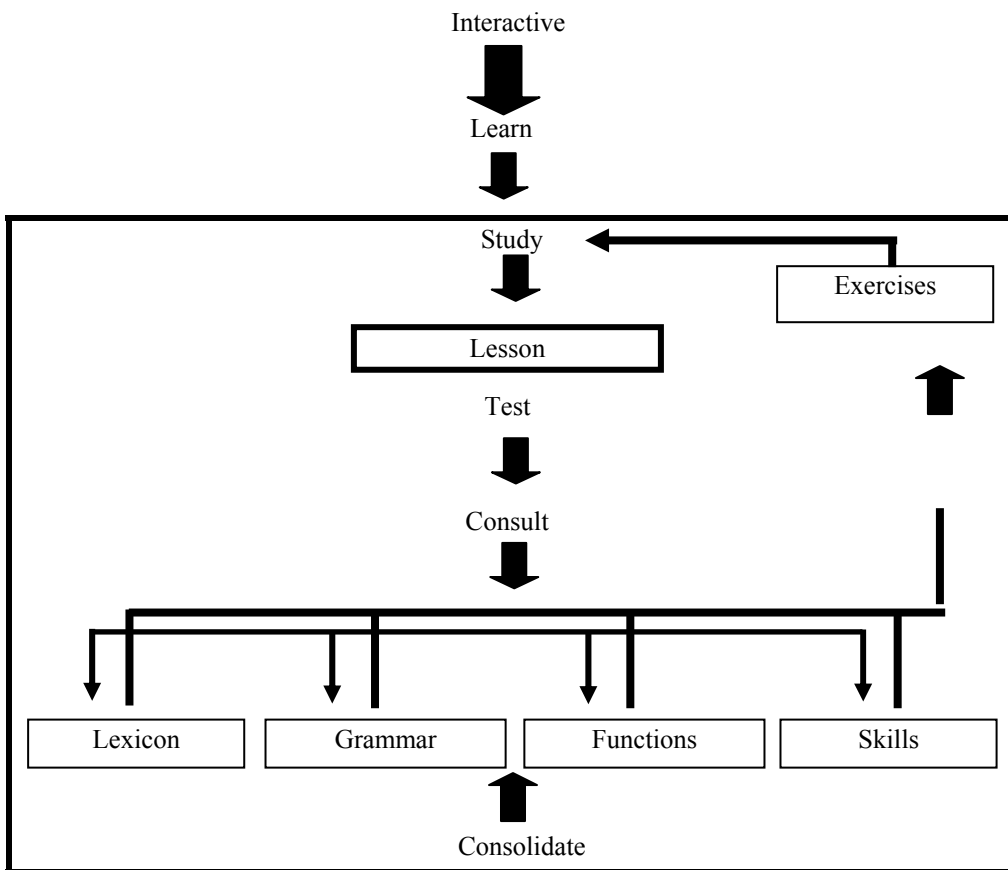| Lexicon | Grammar | Functions | Skills |
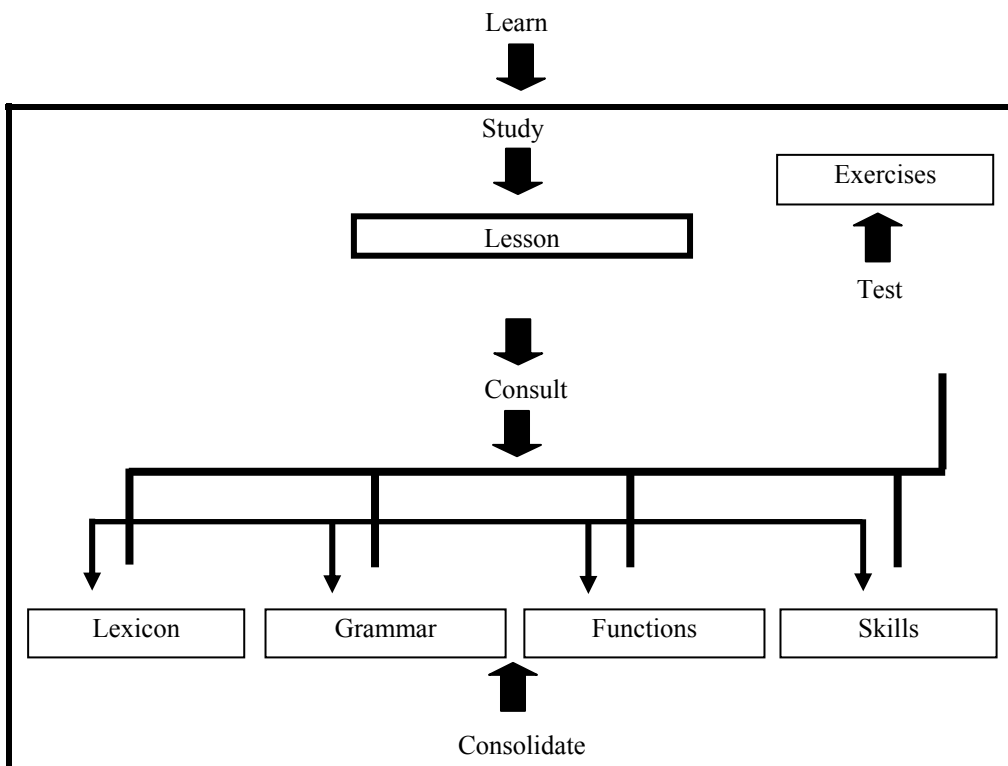
Consolidate

The learner can consolidate his/her knowledge by testing it through completing the exercises that are linked to each item. The results of these exercises help the learner to determine his/her pace and progress. The pace of the learning process is thus determined by the learner (individually). On completion of the exercises the learners can proceed to a new lesson, or repeat the same lesson in whichever fashion they desire.

The programme includes a personal progress report that is linked to the learner's "passport". The learner can refer to this report when s/he logs onto the programme or at any time while busy in the programme.

The programme thus gives the learner the option of listening to the lessons as many times as he/she wishes, moving backwards or forwards at will. The learner can also refer to any of the linked items or decide to attempt any linked exercise at any time. The learning process thus is interactive. The interactive nature of the programme can be illustrated as follows:

Diagram 4: Interactive nature of Tsenang!

```
                          Interactive
                              ↓
                            Learn
                              ↓
       ┌──────────────────────────────────────────────┐
       │         Study      ←──────────────────┐       │
       │           ↓              ┌─────────────┴────┐  │
       │                          │    Exercises     │  │
       │      ┌──────────────┐    └──────────────────┘  │
       │      │    Lesson    │              ↑           │
       │      └──────────────┘                          │
       │          Test                                  │
       │           ↓                                    │
       │         Consult                                │
       │           ↓                                    │
       │  ┌────┬──────┬───────┬─────────────────┐       │
       │  ↓    ↓      ↓       ↓                  │       │
       │ ┌────┐ ┌───────┐ ┌─────────┐ ┌────────┐ │       │
       │ │Lexicon│ │Grammar│ │Functions│ │ Skills │ │     │
       │ └────┘ └───────┘ └─────────┘ └────────┘         │
       │               ↑                                │
       │          Consolidate                           │
       └──────────────────────────────────────────────┘
```

The underlying notion in the construction and development of interactive software is to facilitate and provide constant feedback between the user and the machine. In Tsenang! the feedback that is given with the exercises enhances learning and interactivity.

Cairncross and Mannion (2001:156) state:

> Interactivity in multimedia-assisted learning applications can and should go further than simply allowing learners to choose their own path through an application by pointing and clicking at various menus, items and buttons. If deep learning is to be promoted then the application should actively engage the users in carrying out tasks, which allow them to apply the new knowledge being presented. Reflection on that experience needs also to be encouraged.
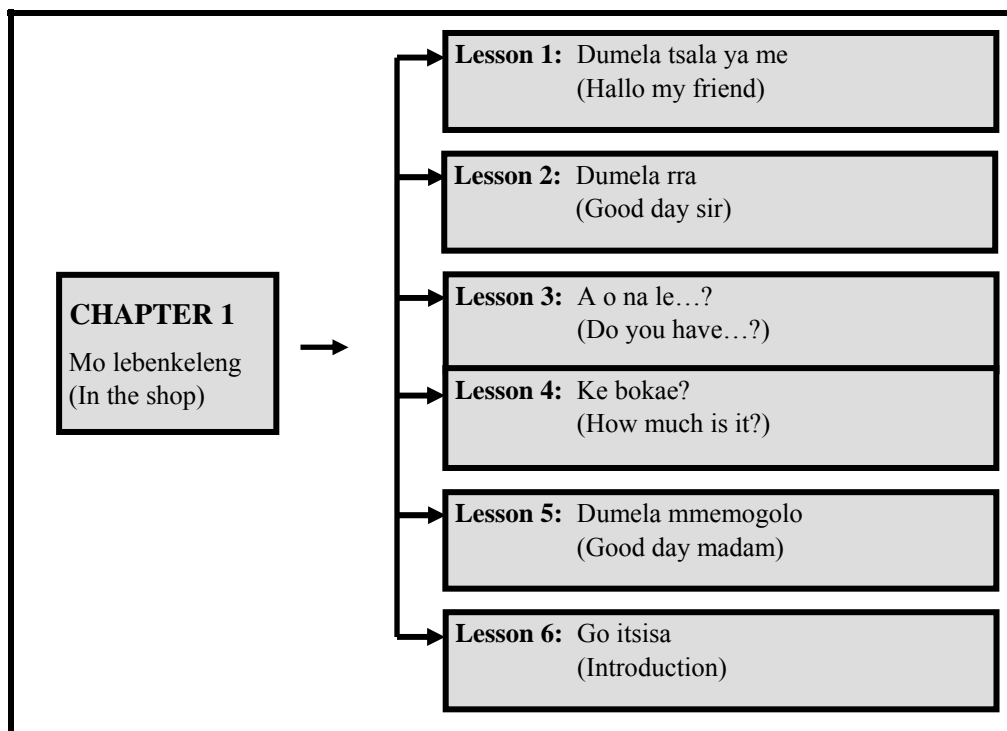
Structure and presentation of content

The content of Tsenang! is structured in topic-specific chapters. Every chapter consists of a number of lessons. Related grammatical, lexical, functional and skill items are linked to each lesson (refer to Appendix A). Exercises on these items are linked to the lessons and are also available from the specific items. Learners have access to a personal notebook in which they can record problems.

Chapters and lessons

Consider the following diagram:
Diagram 5: Lessons of chapter 1

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                        ┌──────────────────────────────────────┐
                        │ Lesson 1:  Dumela tsala ya me         │
                        │            (Hallo my friend)          │
                        ├──────────────────────────────────────┤
                        │ Lesson 2:  Dumela rra                 │
                        │            (Good day sir)             │
                        ├──────────────────────────────────────┤
   ┌──────────────┐     │ Lesson 3:  A o na le…?                │
   │ CHAPTER 1    │     │            (Do you have…?)            │
   │              │ →   ├──────────────────────────────────────┤
   │ Mo lebenkeleng│    │ Lesson 4:  Ke bokae?                  │
   │ (In the shop) │    │            (How much is it?)          │
   └──────────────┘     ├──────────────────────────────────────┤
                        │ Lesson 5:  Dumela mmemogolo           │
                        │            (Good day madam)           │
                        ├──────────────────────────────────────┤
                        │ Lesson 6:  Go itsisa                  │
                        │            (Introduction)             │
                        └──────────────────────────────────────┘
```

Tsenang! consists of four chapters. As has been indicated before, no similar programme for Setswana is available for reference. The developers therefore decided on a commercial situation as main theme, as it was thought that it is the place where the most interaction between speakers and non-speakers of Setswana occur most frequently in daily life. We then tried to write a script that runs through all the chapters. The sub-themes we selected are buying and selling, job application, the family and the workplace. These themes were used as titles for the four chapters.

Each chapter has four to six lessons each, dealing with a sub-theme. As the aim of the programme is to accomplish communicative skills, the texts of the lessons appear in dialogue form. The term "text" refers to any form of communication whether spoken or written. According to Dirven et al. (1993:3) the use of texts is "the best way to deeply impregnate words in memory". With the texts the learner also has access to the audio of the dialogues as read by speakers of Setswana. The learner can listen to the audio at will.

Sixteen characters are used in the script to enable the learner to keep track of the storyline. The characters are:

Karabo (shop owner, father)
Tshepo (works for Karabo)
Pitso (unfamiliar man buying at Karabo's shop)
Tsholofelo (Tshepo's friend, applies for work at Karabo's)
Mmapule (Karabo's wife)
Pule (son of Karabo and Mmapule)

Mmaphefo (daughter of Karabo and Mmapule)
Mosadimogolo Motlagomang (lady buying at Karabo's shop)
Motshelapeterrolo (petrol attendant)
Morutabana (teacher)
Rremogolo (grandfather of Pule and Mmaphefo)
Tatolo (works in the office at Karabo's shop)
Tebogo (receptionist at Karabo's office)
Ofentse (works in the office at Karabo's shop)
Mmago Tsholofelo (Tsholofelo's mother)
Rrakgwebo (owner of bicycle shop)

Each chapter is concluded with a short rhythmic rhyme and a Setswana song. The rhyme was recorded with a metronome to introduce the rhythm of Setswana speech. Contrary to what was believed no pure Setswana songs could be found on the market. Therefore, a group of music students and a section of a campus choir recorded the Setswana songs.

The items linked to the lessons will now be introduced in short.

Functions

The focus of Tsenang! is to enable learners to use Setswana in interpersonal communication. In communication certain language functions are used. In Tsenang! specific functions are linked to specific lessons. Examples of the communicative functions in Tsenang! are: greeting, saying goodbye, saying yes or no, offering help, requesting help, saying thank you, introducing people, asking directions and expressing delight. Knowledge of these functions gives insight into the tradition and customs of the Batswana. Each function is linked to the lesson in which it has been applied.

Grammar

Although the focus of Tsenang! is not on the grammar of Setswana, a short explanation of some grammatical items are included. These items are relevant for the learning of Setswana on a basic level.

One of the questions that emerged, was how these grammatical items should be presented at this level. We decided to present the grammar as an introduction to the morphology and syntax of Setswana. It is also presented in a graded form according to the order of the chapters in the programme. The same grammatical item can thus appear in different lessons, but presented on a different level. The grammar includes items such as the basic structure of the noun, noun classes, class prefixes, the basic structure of the sentence, the basic structure of the verb, the subject morpheme, absolute pronouns, demonstrative pronouns, possession, the future tense, instrument (with), locality and commands. As grammatical structures in Setswana differ vastly from those in Afrikaans and English, learners interested in grammar, can gain insight about the structures of the mentioned grammatical items of Setswana.

Skills

Apart from listening, reading, speaking and writing skills, where the sound system of Setswana is very important, various cultural aspects of the Batswana are also referred to. These include aspects such as personal space, religion, lobola, gender, personal names, pregnancy, child education, eye contact, respect, various fathers and mothers and voice volume.

Lexical items

Tsenang! includes more or less 1300 lexical items. These lexical items (words) are available in a dictionary with translations, morphological indications, a semantic meaning, content examples and their translations. Lexical items can be found in the lessons and their linked items and the notebook. All lexical items are also available in the dictionary.

The notebook

The programme also has a personal notebook facility. The learner can copy lexical items to the notebook. The programme then enables the learner to practise pronunciation, spelling and the meaning of these words. The learner can also copy any of the grammatical items, functions or skills to the notebook for later revision. By using the notebook each student is offered the opportunity of getting involved personally of participating individually. Personal involvement is, therefore, characteristic of this programme.

Exercises

The programme employs twelve types of exercises and variations thereof. Exercises are linked to the items that are linked to the lessons. Learners can, however, also reach the exercises through the different items themselves. Most of the exercises include feedback to enable the learners to correct their answers or to improve their results. Some exercises, on the other hand, have no feedback. Some of the exercises have to be completed within a specified period of time, thus forcing the student to read at a certain speed.

Basic reading, writing and listening efficiency are tested in the exercises. To improve on the area of real life tasks the learner has to leave the computer and go and practise verbal communicative efficiency in Setswana in any given situation. However, these cannot be evaluated and would rely on the discipline and motivation of the learner.

The presentation of the content

Visual effects such as clipart, graphics and photographs play a very important role in language learning programmes such as this one. The layout includes items such as icons, colour, font type and font size. We stuck to the layout used in the software. The programme also includes an audio function which enables the learner to record his/her voice. S/he can then compare it to that of the programme, while at the same time practising pronunciation.

Because of the interactive nature of Tsenang! learners have the choice to start with the lesson itself or any item linked to it. The programme allows a learner to follow his/her own route through the programme. However, we decided to supply a study guide. This study guide would direct learners according to the route decided upon (SOS approach) when the developers compiled the content (lessons and all linked items) (refer to Appendix A).

Conclusion

The multimedia language learning programme Tsenang! for Setswana will shortly be ready to be sold commercially. The developers of the multi-language software in Belgium are working on a network edition of the programme which would also make it suitable for use in classroom conditions in schools and tertiary institutions. As the programme provides the possibility of setting tests by selecting exercises from the programme and storing learners' results, it makes assessing

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the progress of learners in groups easy. This also enables the tutor to keep track of the progress of individuals as results are stored by name.

To conclude, it can be stated that Tsenang!, as the only multimedia language learning programme for Setswana, has the potential as indicated by Cairncross and Mannion (2001:156) to create high quality learning environments. The key elements of multiple media, user control over the delivery of information and interactivity can indeed in the case of Tsenang! be used to enhance the learning process.

Appendix A

To illustrate how the approach of selection, order and systematic presentation was interpreted by the developers, the functions, grammar and skills presented in the lessons of chapter 1 are set out as example.

Lesson 1

Functions	Greeting (acquaintances); Inquiring about well being (acquaintances)
Grammar	Words for people and objects; Noun: basic structure
Skills	Setswana and the Sotho language family; Distinguishing between different sounds; Syllables and pronunciation; a; ê and e; i

Lesson 2

Functions	Greeting (strangers); Asking someone's name; Asking someone's surname; Asking how you could be of help; Who?
Grammar	Noun; Noun classes
Skills	Shaking hands; ei; j; ô and o

Lesson 3

Functions	Help me!; Asking for an item; I have...; I don't have...; Confirmation: Yes or No
Grammar	Class prefix
Skills	Personal space; s (sh); w; y

Lesson 4

Functions	Questions in Setswana; Asking the price (How much?); Thank you; Saying good bye
Grammar	Noun class mo- ba-; Noun class le- ma-
Skills	Expression of thanks; g; kg; ny

Lesson 5

Functions	How are you? (respectful)
Grammar	Words indicating action; Sentence: basic structure
Skills	Manner of writing Setswana verbs; ng; u;

Lesson 6

Functions	I and We; It is...; It is not...
Grammar	Verb: basic structure
Skills	Spiritual life; Lobola; th; tlh; tsh

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