The courage to change: challenges for teacher educators

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With the introduction of the National Qualifications Framework (NQF), the education system in South Africa changed from content-based to outcomes-based education (OBE). The Faculty of Education at the University of South Africa (UNISA) also endeavoured to shift to OBE. In addition, the faculty had been criticised for the poor quality of certain of its distance-education material and, consequently, several lecturers engaged in rewriting learning material. During the transition period, when materials written according to "old' approaches and already-updated new materials, were simultaneously in use, research was undertaken to determine the preferences of Honours BEd learners regarding learning material. Questionnaires were mailed to 2 421 Honours BEd learners residing in South Africa and 818 were returned. Analysis of the returned questionnaires indicated that the learners revealed ambiguity in their responses. They recorded a willingness to move towards more meaningful learning approaches. Yet, at the same time they seemed to prefer traditional teaching practices for various reasons. This finding poses special challenges to lecturers if learners are to realise effective learning. To be able to meet these challenges, lecturers need to change their traditional teaching practice and therefore require relevant training. Training should focus on course design, the use of media other than print, and contemporary learning theories.

Introduction and background

After the democratic elections in South Africa in 1994, education was regarded as a key to change old commonly held values and beliefs. Critical thinking, rational thought, and deeper understanding were seen as ways to break down class, race, and gender stereotypes. The education system also needed to offer economic advantages (Kgobe, 1997:319). This led to the introduction of the National Qualifications Framework (NQF) which provides learning opportunities for learners regardless of age, circumstances, gender or level of education and training. In addition, the NQF ensures that education and training are integrated and enables learners to move from one place of learning to another (Department of Education, 1997:5). At the time it was believed that the only way the NQF could be effective was if there was a change in the education system from content-based to outcomes-based education (OBE). This would ensure that administrators had control over the outcomes that needed to be achieved. Moreover, it warranted accountability in education since it rested on the notion that if education is achieving its outcomes, all is well (Killen, 1996:2). Therefore it was planned that all levels of education should change to OBE. To supervise the establishment of the NQF the South African Qualifications Authority (SAQA) was instituted by the SAQA Act, Act No. 58 of 1995 (Kilfoil, 2002:1). The Faculty of Education at the University of South Africa (UNISA) also endeavored to change to OBE to enable registration of its distance education (DE) courses with SAQA.

"Old" and "new" approaches in DE

The most important characteristic of DE is that it separates educator and learner in time and space, although limited contact often occurs. Because of this separation, the design of the learning material warrants special consideration. According to the "old" approach used at the Faculty of Education, the process of producing pre-packaged material often fell into the trap of what Evans and Nation (1989:245) called "instructional industrialism" since the instructional design was mainly founded in behaviourist and objectivist philosophies. This was evident from the list of behavioural objectives presented to learners indicating what the lecturer hoped to achieve. In addition, Waghid (1997a:113-115) identified positivist nuances in frequently used theories of distance education, e.g. those of Holmberg and Keegan. According to Mays (2001:23), such a positivist approach in a DE context manifests itself in activities of low cognitive demand, general tutorial letters and right/wrong feedback on assessment. The approach is also textbook-centred with rigid syllabi, which are content-based.

At the time when transformation to OBE was called for, some lecturers had already begun to critically appraise their learning material in response to criticism of the material made during an audit undertaken by the South African Institute of Distance Education (SAIDE) (1996a). The learning material had been criticised for its poor educational quality and the under-utilization of media other than print (SAIDE, 1996b:2). Therefore some lecturers considered contemporary views on learning in order to upgrade the learning material. Of these constructivism was the most significant.

Constructivism refers to a cluster of related views (radical constructivism, social constructivism, socio-cultural approaches, emancipatory constructivism, social constructionism) that all rest on the assumption that learning is an active process of constructing meaning and transforming understandings (Gravett, 2001:18; Spigner-Littles & Anderson, 1999:205). New learning builds on the learners' existing frames of reference.

The constructivist views influenced by Piaget place emphasis on the mental processes of individuals in meaning making. An important proponent of this belief is Von Glasersfeld, whose view is termed *radical constructivism*. However, according to social constructivists (of which Vygotski was the father), the construction of individual meaning takes place in social contexts (Gravett, 2001:20). *Social constructivists* therefore emphasise the role of language, dialogue, and shared understanding.

Various authors highlight principles of constructivism and their implications for teaching (Hendry, 1996; Spigner-Littles & Anderson, 1999; Gravett 2001:20-23). Mays (2001:23), with special reference to DE practice, mentions the following:

- Constructivist approaches emphasise construction of knowledge by individuals. Therefore lecturers need to make choices regarding materials that provide scaffolding and involve the learner; how multiple pathways can be provided for diverse learners; and how to individualise feedback on assessment, keeping the learner's thought processes in mind. Assessment needs to be formative. In DE practice the afore-mentioned manifests in self-instructional materials of a multi-media nature. Feedback on assignments is personalized. Use is made of interactive, open-ended Integrated Computer Technologies (ICTs) as well as one-on-one tutorials, tele-tutorials and e-mail.
- Socio-constructivist approaches emphasise construction of knowledge in collaboration with others. Thus lecturers need to make decisions on pair and group activities and assessment tasks, and how to expose students to multiple viewpoints. In DE practice this manifests in the modularization of self-instructional, multi-media materials with multiple links to other resources. Personal and group feedback on assessment, interactive, open-ended use of ICTs as well as group tutorials, audio–video conferencing, e-mail and chat-rooms are provided.

The question arises as to what extent the above-named is compatible with OBE.

Constructivism and OBE in distance education

There are parallels between constructivism and OBE. Some examples include the following: within OBE teaching is no longer seen as the transmission of knowledge, but "... the process of helping students to understand information and to transform it into their own personal knowledge" (Killen, 1996:5). Constructivism has similar aims. Using a constructivist approach, the *learner,* rather than the *teacher*, is central to the learning process since the learner actively participates in learning while the teacher functions as facilitator. Thus learners take responsibility for their own learning. Current relevancy of information (connected to real-life experiences), is emphasised (Spigner-Littles & Anderson, 1999:25). The learning material is challenging (problem-centred) and strives to promote critical thinking (Hendry, 1996:30). Collaborative learning environments are stressed by socio-constructivism. Assessment is non-judgmental. The afore-mentioned are also listed as aims of OBE (Department of Education, 1997:7).

However, Faculties of Education adopting an OBE approach and educating teachers to implement OBE in schools should consider criticism of this approach. In this regard, Jansen (1998:323-330) outlines ten major points of critique against OBE in the South African context. These relate to the complex language of OBE, problematic claims about the relationship between curriculum and society, impact of the less than ideal South African context within which OBE must be implemented, trivialising of curriculum content and significant philosophical, political and epistemological objections, among others. All of the above should be considered in material design for student learning in DE.

The relationship between material design and student learning in a DE context

According to Moore (1990:12) there is "distance" in all educational relationships which must be overcome for effective learning to occur. He proposed the concept of *transactional distance*, which is a function of *dialogue* and *structure*. *Dialogue* refers to the two-way communication between the learner and the lecturer and involves the idea: "... that humans in communication are engaged actively in the making and exchange of meanings ..." (Evans & Nation in Carnwell, 1999:51). This indicates a link with socio-constructivist approaches. If the level of dialogue is high, the course is less distant and this influences student learning positively. Thus clear, problem-oriented, conversation-like presentations of learning matter, anchored in existing knowledge encourage meaningful learning (Holmberg, 1995: 175).

Structure refers to the extent to which the objectives, implementation and evaluation procedures of a learning programme can be adapted to individual learners' needs (Moore, 1977:18). If learners may follow any sequence through material, contact lecturers anytime when needed, submit assignments and sit for examinations when they feel ready, the course is less structured (more open), less distant and more effective learning can take place.

With special reference to resource-based learning in DE, Waghid (1998:81), emphasises that features such as designing flexible courses for different needs, removing barriers that prevent access and using a learner-centred approach to increase dialogue, all point towards *creative* practices. Thus creativity is the formal element of resource based learning for higher education in a DE context. The material elements of resource-based learning are addressed by using a variety of different media, printed study material, audio-visual instruments and computer programs.

In the literature, a third dimension (in addition to dialogue and structure) is often added, namely *learner autonomy*: More transactional distance implies more learner autonomy (Chen & Willits, 1998:63). The basis of learner autonomy is that learners accept responsibility for their own learning and not the lecturer and as such it is in concurrence with constructivism. Learner autonomy can engender more enthusiasm for learning and feelings of ownership of the learning process (Littlejohn in Cotterall, 1995:219; Sieminski, 1993:11). How-

ever, skills of autonomous learning do not come automatically. This is especially true if learners' past learning experiences were dominated by teacher-centered learning or if they were embedded in authoritarian cultures that inhibited the development of autonomy (Ho & Crookall, 1995:237).

According to Rowntree (1992:38-148), when designing material for student learning in a DE context, designers need to be in line with the needs of individual learners to improve student learning. This can be done in the following ways:

- **Know the learners.** There should be choice and variety, tailored to learners' needs which consider demographic backgrounds (e.g. age, gender, race), motivation, learning factors (learning styles and skills); subject background and resources available to them (Rowntree, 1994:42).
- **What will learners be learning and how?** If *objectives* are in the open, learners are more empowered to accept or reject them, monitor their own progress and know how they will be assessed. Moreover, carefully designed *activities* may improve learning but should be followed by *feedback*; learning material should include plenty of *examples*; carefully planned *layout and graphics* help learners find their way around the package — these include white space, headings, bulleted lists, boxes and icons.
- **Foster learning autonomy.** As already mentioned, this refers to the extent to which learners can make their own choices about various aspects of their learning.

However, good packages are not enough. Learners still need personal support, for example, from their lecturers, tutors or other students. In addition, text needs to be supported by considering a wide range of media (Rowntree, 1992:95-119; Rowntree, 1994:66). Rowntree (1992: 261-162) also emphasises the need for staff development focusing on the following topics: moving toward learner-centredness; improved interpersonal skills and communication with learners; working in teams in the development of course materials, and the creative management of the above. Waghid (1997b:48-54) confirms that instructional design at DE institutions can be effective if practised within the conceptual framework of *intersubjectivity* and the methodological practice of *collegiality*. This should be promoted by administrative policies and management. Too often DE practitioners struggle in isolation in their offices with various design issues.

Background to the research project and research question

During this time of transformation to improve material design and student learning, one study attempted to investigate this relationship empirically. An exploratory, qualitative study of ten Honours BEd learners at Unisa found that the learners' orientation to study appeared to be driven by assignments and examinations. Although learners professed to prefer texts encouraging higher-order thinking skills, they were actually preoccupied with the memorisation of content (Lemmer, Bergh, Van der Linde, Van Niekerk & Van Wyk 1996:169).

This study paved the way for the more comprehensive inquiry which is the focus of this article. This involved *all* Honours BEd learners of a specific year to determine how they felt about their study material. During this time there was a wide variety in the design of the course material. Some study material was still compiled according to the "old" approach, since learning material is periodically rewritten according to pre-determined schedules. Other material had already been rewritten according to the new approach. Hence the research project was driven by the following research question: *What are Honours BEd learners' approaches to their studies and their views of their learning material?*

Emanating from the research question, the aims of the research were to determine:

- learners' reasons for studying for the Honours BEd degree;
- their approach to their studies;
- their views of diverse aspects of their study material; and
- how the afore-mentioned might influence their achievements.

Research design
The general Honours BEd course
The general Honours BEd degree aims to develop learners who are knowledgeable in the science of Education; have the necessary knowledge and skills to meet the demands of the teaching and training profession and have acquired the knowledge and skills to perform research in education to improve educational theory and practice. To enrol for the degree learners need (1) an approved bachelor's degree plus a relevant diploma, e.g. a postgraduate certificate in Education, or (2) a four-year composite degree in Education. The modules are text driven with fixed content. Learners may choose ten modules of which four are compulsory. Although the remaining six are chosen from 24 modules, they are structured within three groups and the choice restricted by specific regulations. Modules include both continuous assessment (usually through essays but often by means of computer-marked assignments) and an examination written annually during January or February. To pass the course, only the achievement in the examination is considered. Although learners choose when and where they study, their overall pace is influenced by fixed closing dates for assignments (usually between two and four per module). Once per year discussion classes are presented in four major centres, but attendance is not compulsory. Personal visits to lecturers are allowed but via appointments only. Although learners may contact lecturers at any time, telephone calls are usually restricted to certain times. In some modules lecturers' home telephone numbers are provided, often with a time restriction. Therefore the general Honours BEd course is relatively *structured* (not open) according to the criteria listed by Rowntree (1992:8-30).

The subjects
The learner population of the Honours BEd degree is a heterogeneous group of practising teachers who come from a wide variety of backgrounds and teaching experience. Most are studying part-time and the majority (95%) reside in South Africa. Only South Africans were included in the research to enable us to use business reply envelopes to encourage postal return. In addition, the following particulars were applicable to the subjects: about 75% were female and 25% male; 11% were white, 2% coloured, 83% black and 4% Asian. The black learners came from nine ethnic groups. The learners' ages ranged from 22 to 69, the majority (82%) were between 30 and 50 years old. The average age was 41 years. This indicated that the subjects' previous studies had been within the "old" paradigm of teacher and textbook dominated teaching.

The questionnaire
Although use was made of a structured questionnaire, learners were presented with an "other (specify)" option if their preferred response was not listed. (Learners did not use this option.) A number of questions focused on learners' attitudes towards their studies by determining why they had enrolled for the Honours BEd degree and what their various study approaches were. The remainder of the questionnaire determined learners' views of their most and least preferred study guides. Student identity numbers were requested. This enabled us to determine if significant differences in achievement existed between various groups. The draft questionnaire was pilot tested, (thereafter requiring editing only), before the final version was mailed to all Honours BEd learners residing in South Africa — 2 421 of a particular year in total. After three weeks, follow-up questionnaires were also mailed. In total, 818 (33.7%) of the questionnaires were returned.

Results and discussion
Learners' reasons for registering for the Honours BEd degree
Learners were asked to indicate their main reason for registering for the Honours BEd degree. The two main reasons identified were (1) for personal enrichment (46.9%) and (2) improvement of qualifications (45.9%). Studying for enrichment may enhance a willingness to change to meaningful learning in contrast to the memorisation and

regurgitation of facts (activities of low cognitive demand) characteristic of a positivist approach.

Learners' study approaches
Learners' communication with their Honours BEd lecturers
Learners were asked about the nature of their communication with their BEd lecturers. Of the subjects, 38% signified that they could communicate quite easily when they felt the need and 14.5% indicated that they did not need additional communication. However, a significant percentage of 40.3% of the learners indicated that it was difficult to contact the lecturers during the morning when they themselves were at work. Keeping in mind the emphasis on personal support, dialogue and shared understanding of socio-constructivists, this finding indicates that the communication between lecturers and learners needs to be improved.

Learners' time available for assignments
Learners were restricted to closing dates for assignments. Responses on the questionnaire indicated that only about a third (36.8%) thought they had enough time for assignments. Learners who felt they did not have enough time, mentioned the following two main reasons: personal problems (21%) and due dates of assignments which were too close together (11.2%). The achievements of learners, who had enough time for assignments and those who did not, were compared. The results are given in Table 1.

Table 1 Average scores and *t* value for achievement of Honours BEd learners who had enough time or did not have enough time for doing assignments

Time available for assignments	N	Mean	*t* value	df	Probability
Enough	231	51.93			
Too little	388	49.45	2.1984	617	$p < 0.05$

The learners who felt they had enough time for doing assignments did significantly better (on the 0.05 level of confidence) than the others. This demonstrated the need for flexible submission dates of assignments. Flexibility decreases course structure and enhances effective learning.

Learners' time spent on studies during the course of the year
Learners were asked if they studied regularly or irregularly. If they studied regularly, they were requested to indicate the number of hours per week. Only about a third (37%) indicated that they studied irregularly. Of those that studied regularly (63%), most studied eight to ten hours per week (21.4%) or less than eight hours per week (19.2%). Analysis (*t* test) indicated that there was no significant difference between the average achievements of learners who studied regularly or irregularly. This seemed to confirm the notion that learners can learn effectively in less structured courses where decisions concerning study timetables are made by individual learners in the light of their own circumstances.

Learners' views of their Honours BEd study guides
From among the compulsory modules, the learners had to identify the study guide (or learning material used in the absence of a study guide) they preferred *most*. The most popular choice was the learning material of a module for which there was no study guide available. In addition to the prescribed textbook, there was a reader with additional content consisting of selected chapters from a variety of textbooks. Learners were expected to use this reader as additional content to complete assignments. There were no stated objectives, activities or graphic aids. The layout was traditional and according to the "old" approach.

The learners also had to identify the study guide they *least preferred*. The study guide of the module that was chosen, presented the

entire content for that course. In the study guide, an attempt was made at stimulating reflection by means of questions put in boxes interspersed with the content or by means of key questions listed at the end of the chapters. Space was sometimes provided for learners to write down answers. Some of the questions asked learners to relate the content to their own real-life situations. However, no feedback was provided. In some examples learners were referred to additional sources for reading. A *t* test was administered to determine if there was a significant difference in learners' average achievement between the least and the most preferred modules. The results are given in Table 2.

Table 2 Average scores and *t* value for achievement of learners in Module A (least preferred) and Module B (most preferred)

Group	N	Average	*t* value	df	Probability
Module A (least preferred)	158	52.35			
Module B (most preferred)	187	41.82	5.0545	243	*p* < 0.01

Table 2 indicates that the Honours BEd learners did significantly better (on the 0.01 level of confidence) in Module A (least preferred) than in Module B (most preferred). This may demonstrate (depending on the kinds of questions asked in the examination), that considering constructivist learning theories could lead to more effective learning.

In addition to the above, the questionnaire allowed the learners to indicate *two* preferences from a list provided (regarding appearance; objectives; content; learning principles; learner activities; language and evaluation) which they felt most accurately described the *most* as well as the *least* preferred module's learning material. They could add any characteristic if their choice was not listed. Their preferences are displayed in Figures 1 to 7.

Appearance
Regarding the appearance of their most preferred study guide, learners indicated the most important characteristics of this guide from the following list:
• A layout which separates main ideas from rest;
• Printing which is clearly legible;
• An attractive physical format;
• A variety of layout (boxes, icons, different letter sizes);
• Graphic aids (pictures, maps, graphs) to promote learning;
• Enough blank spaces to make notes.
For the least preferred study guide, the above characteristics were formulated negatively. For example, a layout which does not separate main ideas from the rest, printing which is not clearly legible, etc. Figure 1 displays learners' likes and dislikes regarding the *appearance* of their most and least preferred study guides.

Figure 1 shows that a layout which enables learners to separate main ideas from the rest, printing that is clearly legible and an attractive physical format are considered as important aspects of the appearance of the study material. Lack of graphic aids was experienced negatively by 20% of the learners. Using the above effectively helps learners find their way around the package and form conceptual frameworks for the integration of new knowledge. However, the appearance of the most preferred study material was not according to this approach.

Objectives
Regarding objectives, the questionnaire asked learners to respond to the following regarding their most preferred study material.
Objectives
• are at beginning of sections to help focus learners' thoughts;
• are relevant in terms of course aims;
• help the learner to assess progress;
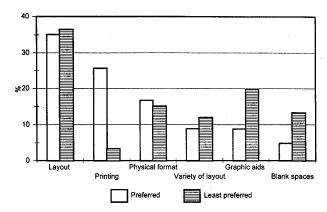• are clear and unambiguous;
• are realistic in terms of workload.

Figure 1 Appearance of study guides

The opposite statements were formulated for the least preferred study guide. Learners' responses to these are displayed in Figure 2.

Figure 2 indicates that the learners considered the following as important: objectives should be stated at the beginning of the sections of their study guides; these should be relevant in terms of the course aims and enable learners to assess their progress. If stated objectives were confusing and ambiguous, this was experienced negatively by 31% of the learners. This is in accordance with recommendations by Rowntree (1992) indicating that clearly stated objectives empower learners to accept or reject them, monitor their own progress and know how they will be assessed. However, in the study material identified as most preferred, there were no stated objectives.
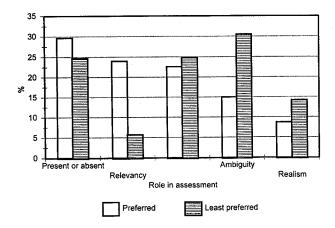

Figure 2 Objectives in study guides

Content
Regarding content, the learners responded to the following with regard to the most preferred study guide.
Content:
• is relevant to life or work situation;
• encourages critical thinking;
• is interesting;
• is divided into units which form a coherent whole;
• is up-to-date; and
• is a reasonable amount.
For the least preferred study guide, the list was formulated negatively. Learners' responses appear in Figure 3.

Figure 3 indicates that learners felt it was important that the content is relevant to their life or work situation; encourages critical thinking; is interesting; and is divided into units, which form a coherent whole. In this regard, 36% of the learners indicated that the main reason why study guides were viewed negatively, was the inclusion of too much content. Therefore the preferences the learners indicated are in accordance with constructivism and would promote
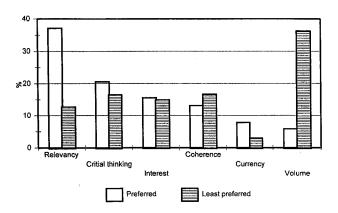
Figure 3 Content of study guides

meaningful learning. However, the study guide in which an attempt was made to implement this approach, was least preferred.

Learning principles
Regarding the learning principles portrayed in the study material, the following preferences were listed for learners to choose from:
• headings and subheadings to help learners access the text;
• clear guidelines on how to read/study the text;
• a table of contents that gives a good overview of the text;
• use of analogies, examples, case studies and illustrations;
• acknowledgement of learners' life experiences; and
• use of relevant prior knowledge.
Thereafter learners also had to indicate their dislikes regarding their least preferred study guide. Figure 4 indicates their answers.
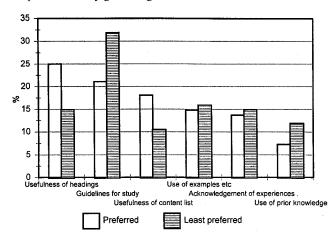

Figure 4 Learning principles in guides

According to Figure 4, the two learning principles which were considered most important, were the need for headings and sub-headings to help learners access the text and clear guidelines on how to read or study from the text. Of the learners, 32% suggested that the main reason why study guides were viewed negatively regarding learning principles, was a lack of clear guidelines on how to approach the task of learning from the text. This illustrates lack of learner autonomy. Learners also indicated that they wanted the use of analogies, examples, case studies and illustrations which could indeed improve student learning. However, this was not used in their most preferred study guide.

Learner activities
The following learner activities were listed for learners to choose from regarding their most preferred study guide:

Activities:
• stimulate understanding;
• are meaningful in terms of learning objectives;
• are linked to assignments;
• are integrated into content of text;
• are interesting; and
• are varied.
Regarding their least preferred study guide, the opposite of the above were listed. Figure 5 indicates learners' preferences.
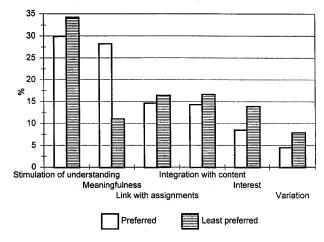

Figure 5 Activities in study guides

Learners' feedback indicated that activities should help them to understand the content of the work; be meaningful in terms of meeting learning objectives; and be linked to assignments. The most important reason why study guides were viewed negatively with regard to learner activities, was that the activities in the text did not stimulate under-standing. Learners' desire to *understand* the work is viewed positively and concurs with the assumption that learning is an active process of constructing meaning and transforming understandings. However, the desire for activities to always be linked to assignments is a confirma-tion of previous research by Lemmer *et al.* (1996) that learners' study orientation is driven by assignments (and examinations). Moreover, in the most popular study guide, there were no learner activities included.

Language
The following were listed as characteristics of language usage from which learners should choose regarding the most preferred study guide:
• Language is easy to understand;
• Text is free of complicated sentences;
• Text has a friendly tone;
• There is a glossary that explains difficult words;
• Text is free of cultural bias;
• Text is free of lengthy paragraphs; and
• Text is free of gender bias.
For the least preferred study guide, the above were formulated nega-tively. Figure 6 depicts learners' choices.

According to Figure 6, 41% of the learners indicated that lan-guage should be easy to understand; text should be free of complica-ted sentences and have a friendly tone. Lack of a glossary to explain difficult words was experienced negatively by 22%. Therefore the learners' preference for the kind of dialogue which improves meaning-ful learning, is in accordance with socio-constructivist approaches but was absent in their most preferred study material.

Evaluation
With regard to learners' preferences concerning self-evaluation, the following were itemized:
• There are self-evaluation exercises for revision;

- Evaluation activities encourage critical thinking;
- Evaluation activities are linked to assignments;
- There is built-in feedback on learners' progress;
- Evaluation criteria are clearly defined; and
- Evaluation activities take up a reasonable amount of time.

With regard to the least preferred study guide, the above were formulated negatively. Learners' responses are indicated by Figure 7.
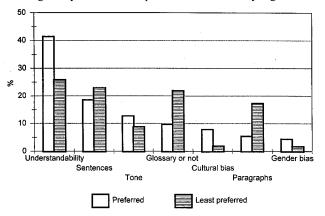

Figure 6 Language used in study guides

Figure 7 indicates that the two most important aspects regarding evaluation were that there should be self-evaluation exercises for revision and these should encourage critical thinking. In addition, 22% of the learners revealed that the lack of well-defined evaluation criteria was experienced negatively. Self-evaluation exercises help individuals to construct knowledge actively, promote learner autonomy and thus help learners accept responsibility for their own learning. However, in their most preferred study material, there were no self-assessment exercises or evaluation criteria. In their least popular study guide, self-evaluation exercises were included.
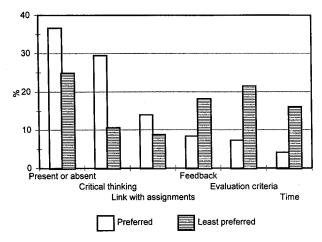

Figure 7 Self-evaluation in guides

Conclusions and recommendations

The most important finding of this study was that BEd learners revealed ambiguity in their responses. They recorded a willingness to move towards meaningful learning. As teachers they knew this constituted better learning. At the same time, possibly due to many years of being schooled in rote learning and subject to cultural influences that encouraged the view that authority figures (lecturers) were "in charge", they seemed to prefer traditional teaching practices. This confirmed previous research by Spigner-Littles and Anderson (1999:207) and poses special challenges to teacher educators who should be creative in their efforts to encourage learners to change towards meaningful and autonomous learning.

Many lecturers are used to struggling in isolation with design issues. They may also favour traditional teaching practices with which they are familiar. Resistance to change is aggravated by heavy workloads during a time when transformation issues may impact negatively on positive attitudes. Hence, staff may not be motivated to improve course design by creative efforts or employ media other than print without compulsory training in this regard. In addition, a basic knowledge and understanding of relevant, contemporary learning theories, for example, constructivist learning theories, are important. Therefore, in confirmation of a previous recommendation by Waghid (1997b: 54), policies and management practices need to be established to create a climate where the continuous improvement of instructional design is the norm.

In the light of the above the following statement appears warranted: the biggest challenge for teacher educators may be to change their attitudes towards *how* they teach so that students can learn meaningfully. Brooks and Brooks (1999:24) stated: "We need to focus on student learning. When we design instructional practices to help students construct knowledge, students learn. This is our calling as educators".

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