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PERCEPTIONS OF INTRINSICALLY AND EXTRINSICALLY MOTIVATED DISTANCE EDUCATION STUDENTS OF THE BARRIERS TO PERSISTENCE

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ABSTRACT

The aim of the study was to investigate the influence of intrinsic and extrinsic motivation on the perceptions held by distance education students of the barriers to persistence. A review of the literature on attrition in traditional and distance education and motivation to learn in adults – with specific reference to intrinsic and extrinsic motivation, as well as barriers to persistence – is presented. The "Barriers to Persistence Questionnaire" (BPQ), consisting of 97 items, was developed. It was administered, in combination with Maritz's (1980) 86 item "Motivation to Learn Questionnaire" (MLQ) to 212 adults enrolled for management development programmes via distance education. Statistically significant differences were found between predominantly intrinsically motivated students and those students who were predominantly extrinsically motivated. The implications of the findings, as well as the implications for distance education institutions and organisations involved in distance education, are discussed.

OPSOMMING

Die doel van die studie was om die invloed van intrinsieke en ekstrinsieke motivering op die persepsies van afstandsonderrigstudente van die hindernisse tot volharding te ondersoek. 'n Literatuuroorsig ten opsigte van slytasie in tradisionele onderrig en afstandsonderrig, asook die rol van motivering in volwasse onderrig – met spesifieke verwysing na intrinsieke en ekstrinsieke motivering, asook die hindernisse tot volharding – is gedoen. Die "Barriers to Persistence Questionnaire" (BPQ) is ontwikkel, bestaande uit 97 items. Dit is saam met Maritz (1980) se 86-item "Motivation to Learn Questionnaire" toegepas op 212 volwassenes wat geregistreer is vir bestuursontwikkeling-sprogramme via afstandsonderrig. Statisties beduidende verskille is gevind in die persepsies van oorwegend intrinsieke en oorwegend ekstrinsieke studente. Die implikasies van die bevindinge word bespreek, asook implikasies vir afstandsonderriginstellings en organisasies betrokke by afstandsonderrig.

There is international concern over the high attrition rate in distance education (Jacobs, Fourie & Smit, 1995; Peters, 1992). This concern is further emphasised as the incorporation of electronic technologies to deliver distance education is increasing the number of distance education institutions world-wide (Carr, Fullerton, Severino & McHugh, 1996; Cohen, 1997; Froke, 1994; Keegan, 1993; Kendall & Oaks, 1992; Wilkes & Burnam, 1991). Corporations and universities are increasingly using one-way and two-way video and audio satellite systems to train, educate and communicate with customers, employees and students, outside the constraints of traditional delivery mechanisms (Abe, 1988; Henri & Kaye, 1993; McColgan, 1997; Miller & Clouse, 1994).

The Goverment's Green Paper on Higher Education Transformation (1996) identifies distance education as a crucial mechanism to meet the higher educational needs of South Africa. The Paper does, however, indicate concerns over the effectiveness of distance education based on, amongst others, the prevailing low completion rates. During the last five years, South African attrition rates have been between 50% and 70% whereas international attrition figures vary between 30% and 70% (Smit, 1997). According to Garrison (1987), the high attrition figures have led to many research studies on student attrition in distance education, "... part of the reason is the need to show that distance education is an effective and viable method of structuring and delivering education. Another more important reason is the need to understand the distance learner in order to design and deliver better programmes." (p.95).

Despite the focus on student attrition, no clear answers are available. No single variable leads to drop-out, but rather a complex combination of different variables (for example: Carr et al., 1996; Garland, 1993; Garrison, 1987; Gibson & Graff, 1992; Kember, Lai, Murphy, Siaw & Yuen, 1994; Roberts, Boyton, Buete, Dawson & Davies, 1991; Taylor, Barker, White, Gillard, Kaufman, Khan & Mezger, 1993). Student characteristics especially have been a focus area for research, but, as yet cannot explain why student attrition takes place (Backman, 1988; Garrison, 1987; Peters, 1992). Bink, Biner, Huffman, Geer and Dean (1995) suggested that this focus is primarily because a demographic profile of the successful distance education student would enable institutions to focus their recruitment activities. Wallace (1996) highlighted the need to improve the sophistication of the theoretical conceptualisation of factors like the role of psychosocial barriers and the possible interaction of psychological and social influences on distance education students. Due to the inconclusive findings of research on student characteristics, Baldwin, Magjuka and Loher (1991) proposed that future research should concentrate more on the individual's *motivation to learn* than on his or her *ability* to successfully complete a programme. Therefore, the aim of this study was to investigate the influence of motivation on persistence in distance education and, more specifically, to explore the difference between the effect of intrinsic and extrinsic motivation on the individual's perceptions of the barriers to persistence.

In essence, every definition of distance education identifies the physical separation of instructor and student, the time separation from the instructor and the fact that the student learns independently of contact with the instructor (Barker, Frisby Patrick, 1993). There is a growing tendency to distinguish between distance education and correspondence study (Barker et al., 1993; Garrison, 1987). Correspondence studies are in many ways the purest form of distance instruction, since the student has maximum control over the circumstances in which the learning will take place and there is limited contact with an instructor (Garrison, 1987).

Barker et al. (1993) also argued that a broadening of the

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definition of distance education is required to include the new technologies used in the delivery of the instruction. Miller and Clouse (1994), for example, defined distance learning as an interactive relationship between instructor and student, which hinges on technological support. For the purpose of this discussion, the definition of distance education will be the one submitted by Froke (1994): "... the organizing, presenting, disseminating, utilizing and evaluating of instructions for students who are separated by location from their teachers of faculty. Instructions may be formal or informal for individuals or groups, and in real time or delayed for presentation or interaction. Academic and administrative services are provided in addition to instruction." (p.22).

In distance education, the simplest definition of student attrition refers to those students who end their studies prematurely (Peters, 1992). The attrition rate is calculated by dividing the sum of the students for each registration year who withdraw prematurely by the total registration for that year. Tinto (1975), however, maintained that student attrition should only enumerate those students who voluntarily withdraw from a specific programme, and should not include those students who withdraw due to academic dismissal.

Models of student attrition

Spady is generally credited for introducing the first model of attrition (Brindley, 1988). He used Durkheim's theory of suicide as an analogy for drop-out in education (Kember, 1989). According to Durkheim's 1961 work, suicide is more likely to occur when an individual is not sufficiently integrated into the fabric of society (Tinto, 1975). Successful integration and persistence in education would occur, according to Spady, if the student could meet the demands of the institution and felt rewarded in the process (Brindley, 1988).

The 1975 work of Tinto built on Spady's model to develop an explanatory, predictive model of the drop-out process with academic and social integration in the institution as the core concepts (Pascarella & Terenzini, 1980). The model takes the individual's characteristics, prior experiences and commitments into account, but contends that it is the individual's integration into the academic and social systems of the institution that directly relates to persistence (Tinto, 1975).

Tinto's model views the institution as a social system into which the individual enters with completion goals and institutional commitments, which are modified over time by the quality and frequency of academic and social interactions. Drop-out depends on whether the individual's goals and commitments are strengthened or weakened by the process (Tinto, 1975). A number of studies have tested this model and have supported the validity of the major dimensions of the Tinto model of student attrition at traditional educational institutions (Brindley, 1988; Pascarella & Terenzini, 1980).

Bean and Metzner (1985) identified the need to develop a specific model for non-traditional students, who were defined as older, part-time students who did not reside on campus, but nevertheless attended lectures at the institution. Briefly, the conceptual model asserts that drop-out decisions are primarily based on four sets of variables, namely *background and defining* variables, *academic* variables, *environmental* variables and *social integration* variables. The variables impact directly or indirectly on academic outcomes, psychological outcomes, the intent to leave and ultimately, the drop-out decision. The model includes features similar to the social and academic integration identified by Tinto. The influence of environmental variables are, however, more prominent and the academic and psychological outcomes are also separated in this model (Bean & Metzner, 1985).

Brindley (1988) based her model of attrition in distance education on the model proposed by Bean and Metzner. The changes Brindley made to the Bean and Metzner model are based on a study in which distance education students identified 265 incidents, distinguishing between those incidents which impair and those which facilitate success in an educational programme. These incidents were then sorted into 13 categories and based on these, Brindley discarded, adapted and included certain aspects of Bean and Metzner's model (Brindley, 1988).

Kember (1989) based his model of student attrition in distance education on the work of Tinto. Kember included the work environment, which is not usually relevant to full-time students and was therefore not part of Tinto's model. The family and the social situations were also given a more prominent position in Kember's model. In essence, the model views the integration of the social, work and academic components as intervening variables between initial background characteristics and the possible outcomes (Kember et al., 1994).

The characteristics component contains variables related to the individual's personal attributes and environment (Kember, 1990). Kember (1989) stated that previous studies had found small but significant correlations between student characteristics and attrition. Although these correlations could only explain a small fraction of the variance, Kember concluded that this justified the inclusion of student characteristics in his model. In the model, the characteristic component leads to the goal commitment component, which consists of intrinsic and extrinsic motivation (Kember, 1989).

In Kember's model, the integration components take into account the extent to which the student is successfully integrated into the academic way of life, as well as the extent to which the student's family and social life have been adjusted to cope with the academic intrusion (Kember, 1989). The academic environment includes all aspects the distance education institution offers to students, which include academic and administrative support systems, as well as programme structure and content (Kember, 1990).

There is some empirical support for linking administrative effectiveness of the institution with student performance. Bink et al. (1995) found that the time delays for feedback on assignments were negatively correlated to the marks attained by students. The design of the programme will also determine the student's ability to find normative congruence between the expectations set by the institution and his or her personal objectives (Burge, 1988; Kember, 1990; Wagner & Uber Grosse, 1993). Utilising Kember's model as a conceptual framework, Carr et al. (1996) found that successful and unsuccessful distance education students differed significantly in the manner they related to the programme and the faculty.

The social and work component in Kember's model refers to the student's ability to integrate social, family and work commitments with the demands of part-time study. The feedback of both these groups will have an effect on the motivation of the student (Kember, 1989). There is extensive empirical support for the argument that the environment in which a student attempts distance education will have an impact on success (for example: Billings & Cobb, 1922; Brinkerhoff & Montesino, 1995; Facteau, Dobbins, Russel, Ladd & Kudisch, 1995; Noe, 1986; Purser, Pasmore & Tenkasi, 1992).

The cost/benefit analysis is the final component in Kember's model before the drop-out decision. In this component, the student has to consider whether the opportunity costs of studying are worthwhile in view of the perceived benefits derived from studying (Kember, 1989). Because Kember included a recycling loop, the model allows changes in a specific component to influence the other components. This acknowledges the fact that the variables of each component are dynamic, and that students may go through the cost/benefit analysis every time their situations change (Roberts et al., 1991).

In a study to test the Kember model, Roberts et al. (1991)

applied the model to investigate persistence of distance education students and to make a "... tentative appraisal of the validity of Kember's model ... [and concluded that] Undoubtedly, the model has provided an appropriate and workable theoretical framework for the study." (p.82).

Motivation to learn in adults

Collins and Murphy (1988) found that, compared with students who received their education by traditional delivery methods, distance education students using modern communication technology, had unique characteristics. Although characteristics may differ, Burge (1988) maintained that no differences exist between the way adults learn in classroom situations and by distance education, and that the theory of adult learning is applicable to both groups.

Knowles (1984) emphasised the difference between pedagogical and andragogical approaches to learning. According to him, adults are motivated to learn in response to a need and enter educational activities with a "... life-centred, task-centred or problem-centred orientation to learning." (pp.11-12). Knowles acknowledged that, although adults will respond to external motivators to learn (for example a better job or a salary increase), internal motivators like self-esteem, recognition, a better quality of life or self-actualisation are more powerful (1983).

Burge (1988) criticised Knowles' assumptions and generalisation regarding adult learners. She stated that: "Adult learners in a course will show subtle and not so subtle differences in learning and cognitive styles and variations in psychosocial, intellectual, moral and other development continua. Some individuals will be very *dependent*, some *independent* and others *interdependent* in terms of how they relate to a teacher or tutor in specific situations. No assumptions therefore should be made that self-direction is an evident need or style of adulthood. ... Others will be learning not in order to solve an immediate problem, but for the joy of experiencing new discoveries. *In short, differences in maturational stages, and in life roles will create more differences in learning needs and styles than Knowles accounted for in his original assumptions.*" (p.12) (italics added).

Paul (1988) also argued that the " ... notion of the self-actualised adult learner perpetuated in much of the literature on adult and continuing learning is more myth than reality ..." (p.50). He further stated that distance education institutions bear considerable responsibility in the learning process – including motivating students. Although a distance education institution may not directly control the motivation of individuals, it can make the learning process stimulating and attractive, thereby influencing and affecting learners. Adults will be highly motivated when they have a need and desire for what they are learning. The characteristics of, and relationships between these needs and desires will determine the nature and the sustainability of the motivation to learn (Wlodkowski, 1985).

In general, motivation consists of intrinsic and extrinsic motivation (Deci, 1975). Intrinsically motivated behaviours are those behaviours for which there are no apparent reward other than the behaviour itself. These behaviours are related to internal rewarding consequences (Deci, 1975), and are performed for the pleasure and satisfaction derived from their performance (Deci, Vallerand, Pelletier & Ryan, 1991). Extrinsically motivated behaviours, on the other hand, are not performed out of interest, but because they are believed to be instrumental in attaining some separable outcome (Deci et al., 1991).

According to Deci (1975), intrinsic motivation is innate and all humans are born with the basic need for feeling competent and self-determining in their interactions with their environments. Sansone and Morgan (1992) have found that intrinsically motivated students typically deliver better quality work than students motivated by extrinsic rewards. According to Kember (1990), intrinsic motivation is most likely to be at a maximum when students perceive the course to have "... direct relevance on their individual interests, vocational position or situation in life." (p.13). Not much research has been carried out regarding the influence of motivation on student attrition (Kember, 1989). According to Garland (1993), this is due to the complex character of motivation, given the close relation to many other personal variables.

Facteau, et al. (1995), in a study of the impact of pretraining motivation on perceived training transfer, hypothesised that training reputation, training incentives, career exploration and planning, as well as commitment towards the organisation would influence attitudes towards training. They found that pretraining motivation was positively influenced by the reputation of the training programme, intrinsic incentives, organisational commitment and supervisory support. Compliance had a negative impact, while career exploration, career planning and extrinsic incentives did not have a significant impact on pretraining motivation (Facteau et al., 1995). In a study on the influence of individual and situational characteristics on training effectiveness, Mathieu, Tannenbaum and Salas (1992) also found that career planning and job involvement (organisational commitment) did not have a significant influence on training motivation. The opportunity to choose to participate, as opposed to compliance, had a positive influence. Situational constraints only had a marginally significant effect on training motivation.

These variables are also reflected in Noe's (1986) model on the motivational influences on training effectiveness. The model was based on important motivational and situational factors from organisational behaviour theory. According to Noe (1986), individuals with internal loci of control are more likely to act upon feedback regarding their strengths and weaknesses. Locus of control will also have an impact on their attitudes towards their career or job. According to the model, the individual's expectation of his or her ability to successfully participate in the learning activity and the desirability of the expected outcomes, influence the motivation to learn. He hypothesised that assuming similar ability levels, individuals who are motivated to learn will acquire more knowledge and skills and will demonstrate greater transfer to the work environment than those not motivated to learn (Noe, 1986).

There is some empirical support for the primacy of intrinsic motivation over extrinsic motivation (Deci et al., 1991; Fair & Silvestri, 1992). Intrinsic motivation is seen as a critical component in adult learning and has also been linked with successful completion of distance education (Hermann, 1988; Oxford, Park-Oh, Ito & Sumrall, 1993). Sansone and Morgan (1992) have also found that individuals may explore ways to maintain and create interest in an activity to foster intrinsic motivation. They concluded that "... intrinsic motivation is created and maintained through an ongoing temporal process, with individuals potentially having an active as well as passive role in the process." (p.266). This supported Deci's (1975) view, who maintained that individuals will seek out challenges to conquer, but added a new aspect to it – the fact that individuals may be passively involved in the process.

Deci (1975) found that extrinsic rewards will diminish intrinsic motivation by shifting the locus of causality from internal to external. Deci specifically excluded praise and positive feedback, which do not seem to change intrinsic motivation. According to Deci, extrinsic rewards will cause previously intrinsically motivated activities only to be performed when extrinsic rewards are expected. This point is disputed by Cameron and Pierce (1994) who found that extrinsic rewards only had a negative impact on intrinsic motivation when offered to people for engaging in a task, regardless of any standard of performance. They also found that praise and positive feedback enhanced intrinsic motivation and that when the feedback was later removed, continued intrinsic motivation was shown.

In a study to investigate the link between student satisfaction and completion in correspondence study, Tallman (1994) failed to find a statistically significant relationship. He maintained, however, that student satisfaction should receive emphasis in order to increase completion rates. Tallman argued that "... services that encourage student satisfaction ... subsequently promote the probability of completion" (1994, p.53). Wilkes and Burnham (1991) found no significant relationship between individual motivational orientation and satisfaction in electronic distance education. They maintained that highly motivated individuals will endure almost any educational situation to complete a programme successfully. In a telephone survey, administered to 306 distance education students, Pugliese (1994) failed to find a link between persistence and locus of control. Other psychological constructs were also investigated in the study, but no significant links were found.

Hermann (1988) conducted a qualitative study on the transition of motivation to learn in a distance education course and found that motivation changed nature as students progressed in their studies. In the study, the majority of the students enrolled with extrinsic expectancies, but through participation intrinsic reasons for persistence were instilled. He also found increasing commitment to the chosen path as the studies continued. This is consistent with Peter's (1992) observation that attrition was more prevalent at the beginning of a distance education programme. Garland (1993) found that a student's reasons for taking a course and the importance of the course were not significant predictors for drop-out. This could possibly be ascribed to transition in motivation during the programme. Fjortoft (1996) found that students with higher levels of perceived intrinsic benefits obtaining the qualification were more likely to persist in a distance education programme. She also found a high correlation between perceived intrinsic and extrinsic benefits, which may suggest that the two factors are related and that by achieving the intrinsic benefits, the students may expect to indirectly obtain extrinsic benefits.

Cross (1981) classified obstacles in the learning process under three headings, namely situational, institutional and dispositional barriers to persistence. *Situational barriers* stem from an individual's life situation at a given time. This could involve such issues as time constraints, financial difficulties or transportation problems. *Institutional barriers* refer to those practices and procedures of the educational institution that discourage or exclude adults from entering or persisting in a programme. Examples of institutional barriers are admission requirements, inappropriate courses of study and limited support services (also Garland, 1993). *Dispositional barriers* relate to the individual's attitudes and perceptions of the self as a learner. These barriers are linked to the individual's psychological and sociological nature, for example attitudes, confidence, learning styles and the motivation of the individual (Garland, 1993).

The individual's motivation to learn is reflected in the goal commitment component of Kember's model (1989) of attrition in distance education. As pointed out during the discussion of the model, Kember acknowledged that the variables of each component are dynamic and interact with other variables and components. The barriers to persistence, as identified by Cross (1981), can be linked to the components in Kember's model, which makes it possible to recognise the connection between goal commitment and the barriers to persistence when utilising Kember's model.

In researching barriers to persistence in distance education, Gibson and Graff (1992) found that completing and non-completing students perceived institutional barriers with similar intensity. Significant differences were found between the perceptions of situational and dispositional barriers of the two groups. Dispositional barriers, for example confidence, competence and commitment, were found to play a significant part in drop-out decisions. In particular, motivation, awareness of the value of the qualification and availability of the time required, differed significantly between the two groups (Gibson & Graff, 1992). Garland (1993) found that completing students and non-completing students experienced similar barriers to their successful participation. These results are in line with the findings of Brindley (1988) who found that completing and non-completing students report similar impeding or facilitating incidents during their studies. Neither researchers measured the intensity of these perceptions.

If completing and non-completing students experience similar barriers to persistence, it could be argued that the student's commitment towards successful completion would determine whether a student withdraws or not. Based on the literature reviewed and the proposition of the primacy of intrinsic motivation, it is hypothesised that predominantly intrinsically motivated students perceive the barriers to persistence at a lower level of intensity than predominantly extrinsically motivated students. In particular, it is hypothesised that this relation exists for institutional, situational and dispositional barriers respectively.

The rationales for these hypotheses rest on the findings of Deci (1975), Deci et al. (1991), Fjortoft (1996), Sansone and Morgan (1992) and Wilkes and Burnham (1991), which indicated the primacy of intrinsic motivation and also that intrinsically motivated individuals are more likely to overcome obstacles in order to reach their goals. Linked to these, are the findings of Gibson and Graff (1992), which indicated differences in the perceptions of successful and unsuccessful students of the barriers to persistence.

METHOD

Sample

The population for this study consisted of all students enrolled with the Africa Growth Network (AGN) for management development programmes. AGN utilises satellite technology to transmit training and development programmes to learning points across South Africa. The participants were sampled from employees of a large banking group, a local motor manufacturer and employees at the manufacturer's dealerships who enrolled for these programmes. The sample was one of convenience, which consisted of volunteers who attended regional student contact sessions or broadcasts at

TABLE 1
DEMOGRAPHIC PROFILE OF SAMPLE

GENDER	FREQUENCY	PERCENTAGE
Male	97	46
Female	115	54
TOTAL	212	100
MARITAL STATUS	**FREQUENCY**	**PERCENTAGE**
Never Married	54	26
Married	129	61
Divorced	18	9
Widower/widow	1	0
Living together	7	3
Unanswered	3	1
TOTAL	212	100
HIGHEST QUALIFICATION	**FREQUENCY**	**PERCENTAGE**
Lower than Std. 10	34	16
Std. 10 or equivalent	122	58
Technikon diploma	28	13
B-degree	15	7
Post-graduate degree	5	2
Other	8	4
TOTAL	212	100

selected learning points. The selected learning points were located in six cities from the Eastern Cape, Gauteng, KwaZulu Natal and the Western Cape. A total of 212 participants were involved, which represented nine per cent of the total population. The sample consisted of 54 per cent females and 46 per cent males. The majority of the sample (58%) indicated Standard 10 as their highest qualification and the majority (61%) were married. Table 1 displays the demographic composition of the sample in more detail.

Instruments

Based on the objectives of the study, an instrument to measure the perceived barriers to persistence in distance education was developed. The BARRIERS TO PERSISTENCE QUESTIONNAIRE (BPQ) consists of 96 items, designed to measure three constructs, namely dispositional, situational and institutional barriers. Table 2 gives a brief overview of the main theoretical constructs that were used in the design of the questionnaire. Each item in the questionnaire poses a question related to the participant's experience of distance education. Questions were preferred to statements in order to guard against an acquiescence tendency. These items are linked to a seven point Likert scale.

TABLE 2
THEORETICAL CONSTRUCTS SUPPORTING THE ITEMS

Institutional barriers	
• Pre-enrolment counselling	• Harrison, Seeman, Behm & Saba (1991)
• Tutorial support	• Garland (1993); Paul (1988); Peters (1992)
• Administrative effectiveness	• Bink et al. (1995); Garland (1993); Harrison et al. (1991); Peters (1992)
• Quality of programme material	• Brindley (1988); Garland (1993); Lessing & Van Zyl (1992); Peters (1992)
• Academic feedback	• Brindley (1988); Harrison et al. (1991)
• Academic fairness (effort: outcome correlation)	• Bean & Metzner; Brindley (1988)
• Additional resources	• Garland (1993)
Situational Barriers	
• Organisation's attitude towards the acquisition and implementation of new skills	Garland (1993); Lessing & Van Zyl (1992); Mathieu et al. (1992); Van Zyl (1993)
• Support from peers	Bean & Metzner (1985); Garland (1993); Van Zyl (1993)
• Support from management	Garland (1993); Harrison et al. (1991)
• Support from family	Garland (1993); Peters (1992)
• Learning environment	Garland (1993); Mathieu et al. (1992)
• Changes in circumstances	Brindley (1988); Garland (1993); Peters (1992)
• Time constraints	Brindley (1988); Bean & Metzner (1985); Garland (1993); Mathieu et al. (1992); Peters (1992)
• Programme's effect on job performance	Bean & Metzner (1985); Brindley (1988); Lessing & Van Zyl (1992)
• Job satisfaction and interest	Brindley (1988)
• Family responsibilities	Bean & Metzner (1985)
• Personal problems	Bean & Matzner (1985); Peters (1992)
Dispositional Barriers	
• Individual's choice to participate	Baldwin & Magjuka (1991); Mathieu et al. (1992)
• Programme seen as challenging	Bean & Metzner (1985); Garland (1993)
• Utility of the programme	Bean & Metzner (1985); Brindley (1988); Lessing & Van Zyl (1992)
• Career attitudes and aspirations	Brindley (1988); Garland (1993); Landstrom (1988)
• Ability to function as an adult learner	Garland (1993); Lessing & Van Zyl (1992)
• Goal commitment	Bean & Metzner (1985); Garland (1993)
• Enjoyment/Satisfaction of learning	Bean & Metzner

The MOTIVATION TO LEARN QUESTIONNAIRE – MLQ – (Maritz, 1980) was adapted to involve a seven point intensity scale. The questionnaire measures intrinsic and extrinsic motivation, based on the participants' responses to 88 items. During its development, the MLQ was administered to 317 first year university students and achieved an internal reliability coefficient of 0,934.

RESULTS

The 97 items of the BPQ were intercorrelated and subjected to a first-order factor analysis which yielded 27 factors. In order to identify the real factors, a second-order factor analysis was carried out. This was done by computing simplified factor scores in respect of each of the first-order factors for each of the respondents. These scores were intercorrelated and subjected to a second-order factor analysis (Schepers, 1992). The second-order factor analysis yielded seven factors. Three of the seven second-order factors were discarded as too few items had significant loadings on them.

An item analysis was performed, utilising the NP50 programme, to ensure that items with low indices of reliability were excluded. The 16 items with a bearing on Factor 1 *(Institutional Barriers)* yielded a Cronbach alpha coefficient of 0,843. The items which constitute this factor focus on the barriers to persistence created by the distance education institution. Factor II *(Work Barriers)* consisted of 21 items and a Cronbach alpha coefficient of 0,880 was obtained. Closer inspection revealed that these items focus on situational barriers, and specifically those barriers created in the workplace. Factor III *(Social Barriers)* with 22 items had a Cronbach alpha coefficient of 0,837. These items also focus on situational barriers, but exclusively on hindrances in the individual's personal life. Factor IV *(Dispositional Barriers)* consisted of 19 items and yielded a Cronbach alpha coefficient of 0,910. The items in this factor are all related to obstacles to the completion of a training programme established by the individual's disposition. High scores on Factors I, II and IV and a low score on Factor III indicate that the specific barrier is perceived with a high level of intensity.

Based on the interactive item analysis, no items were excluded from these factors, as it was decided that the incremental improvements in the Cronbach alpha coefficients, which such exclusions would bring about, did not warrant a reduction in the number of items. Furthermore, it was feared that such exclusions may negatively affect the validity of the questionnaire.

The 86 items of the MLQ were subjected to a first-order analysis which yielded 23 first-order factors. A procedure identical to that of the BPQ, was followed. The simplified factor scores were intercorrelated and subjected to a second-order factor analysis, which yielded six factors. Considering the motivational theory reviewed, two factors were chosen. An item analysis was performed in respect of Factor I *(Extrinsic Motivation)* with 35 items and a Cronbach alpha coefficient of 0,874 was obtained. Factor II *(Intrinsic Motivation)* consisted of 51 items and presented a Cronbach alpha coefficient of 0,927. Once again, no items were excluded because of the negligible improvements such exclusions would make in terms of the Cronbach alpha coefficient and the concern over the exclusion of valid items.

Cluster analysis

Cluster analysis was used to determine whether the sample could be divided into homogeneous sub-groups in terms of intrinsic and extrinsic motivation. A detailed account of the cluster technique has been given by Friedman and Rubin (1967). The Clix programme, which was based on their method, was used to perform the analysis. Based on the two factors of the MLQ various numbers of clusters were formed. Considering the stated hypotheses, however, two clusters were selected as optimal. The first cluster consisted of respondents with low *Intrinsic Motivation* scores and high

Extrinsic Motivation scores (LH), while the second consisted of those with high *Intrinsic Motivation* scores and low *Extrinsic Motivation* scores (LH). Table 3 gives a summary of the means and standard deviations of the two clusters.

TABLE 3
MEANS AND STANDARD DEVIATIONS OF CLUSTERS

		Means		Standard Deviation	
	N	Intrinsic	Extrinsic	Intrinsic	Extrinsic
Cluster LH	85	40,545	56,210	7,137	8,489
Cluster HL	127	55,435	46,431	6,144	7,806
TOTAL	212	50,000	50,000	10,000	10,000

Comparison of means of clusters in terms of the perceived barriers to persistence

From the results in Table 4 it can be deduced that there is a statistically significant difference (p=0,000) between the vectors of means of the two clusters. The Wilks' coefficient Lambda is equal to 0,673, with an associated *F* value (4,133) = 16,148, p< 0,001. Based on these results, the hypothesis that a statistically significant difference exists between the perceptions of intrinsically and extrinsically motivated students of the barriers to persistence, is supported. Furthermore, from the *t* tests listed in Table 4, it is evident that the means of the two groups differ statistically significantly in respect of each of the four barriers to persistence. As hypothesised, the predominantly extrinsically motivated respondents (LH) perceived the *Institutional, Work, Social* and *Dispositional* barriers with higher intensity than the predominantly intrinsically motivated respondents (HL). Significant differences were also found on all four factors when the data was divided into three and four cluster groupings.

Based on these results, the hypotheses that statistically significant differences exist between the perceptions of intrinsically and extrinsically motivated students in respect of *Institutional* and *Dispositional Barriers*, are supported. Statistically significant differences were also found in the perceptions of the two groups in respect to Factors II and III (*Work Barriers* and *Social Barriers*). As a combination of these two factors would fit the initial definition of situational barriers presented in the literature, this hypothesis is also supported.

DISCUSSION

The aim of the study was to explore the difference between the effect of intrinsic motivation and extrinsic motivation on the individual's perceptions of the barriers of persistence in distance education. The results indicate clearly that not only does such a difference exist, but that predominantly intrinsically motivated students perceive these barriers with significantly lower intensity than the predominantly extrinsically motivated students.

This study differed from the studies of Gibson and Graff (1992), Garland (1993) and Brindley (1988) in that these studies were post-hoc, comparing the perceptions of those who completed with those distance education students who dropped out. This study, on the other hand, focused on students still formally enrolled for a distance education programme. Given the difference in focus, the results of this study seem to be more in line with the results from the Gibson and Graff-study, than the results of Garland (1993) and Brindley (1988). It should, however, be noted that neither Garland nor Brindley measured the intensity of the perceived barriers, and subsequently only reported that the two groups of students perceived similar barriers to persistence. The results from the study, therefore, do not necessarily refute their observations.

As mentioned, the combination of the *Work* and *Social Barriers* would fit Cross's (1981) definition of *Situational Barriers*. The BPQ, however, placed definite emphasis on the work environment, and the results are therefore not surprising. This split of the situational factors is also reflected in Kember's (1989) model for attrition in distance education. Kember identified the individual's ability to integrate work and social components with academic responsibilities as crucial to successful completion of a programme. This split is also functional as a frame of reference when alternative interventions to overcome barriers to persistence are considered.

Kember's (1989) model stressed the interactive relationship between the various variables that impact on the drop-out decision. According to this model a student may go through a cost/benefit analysis every time his or her situation changes. During this analysis, the perceived benefits derived from studying – intrinsic and extrinsic – are evaluated against the perceived opportunity costs associated with continuing with the programme (Kember, 1990). In order to ensure that a student persists with a programme, it is obvious that the perceived benefits should continuously outweigh the perceived opportunity costs.

Figure 1 is proposed as a framework for understanding the influence of motivation and the barriers to persistence on the drop-out decision. The individual's current motivational state influences the perceived internal incentives and rewards derived from studying, for example enjoyment of learning and feelings of competency. The current motivational state will also impact on the Dispositional Barriers. Combined with external incentives, support and feedback, as well as the perceived Work, Social and Institutional Barriers, the individual is able to identify the perceived benefits and opportunity costs. These perceptions will determine the outcome of the cost/benefit analysis, similar to the Kember (1989) model. If more benefits than costs are perceived, the student will persist and it will also influence his or her current motivational state. On the other hand, should the perceived costs outweigh the benefits, the student will withdraw from the programme.

Considering the findings of this study and that of Fjortoft (1996), it can be argued that it is crucial that distance education students' motivation to study should primarily be based on intrinsic reasons. It is, however, important to recognise that

TABLE 4
SIGNIFICANCE OF DIFFERENCES IN MEANS BETWEEN CLUSTERS WITH REGARD TO THE BARRIERS TO PERSISTENCE

	Cluster LH (Extrinsic)				Cluster HL (Intrinsic)								
Variables	N	Mean	Variance	Std Error	N	Means	Variance	Std Error	Levene F	*p*	*t* value	*df*	*p(t)*
Institutional Barriers	104	73,89	189,20	1,35	42	64,55	126,25	1,73	1,094	0,297	3,906	4 & 144	<0,00**
Work Barriers	131	95,40	401,46	1,75	59	83,51	251,94	2,07	6,754	0,010	4,025	4 & 188	<0,00**
Social Barriers	130	73,79	216,88	1,29	58	86,34	153,04	1,62	1,993	0,160	-5,659	4 & 186	<0,00**
Dispositional Barriers	127	107,31	210,12	1,29	57	89,37	230,20	2,01	0,350	0,555	7,651	4 & 182	<0,00**

* p<0,05
** p<0,01
Wilks' Lambda = 0,673 F-value = 16,148 *df* = 4 & 133 *p* <0,000

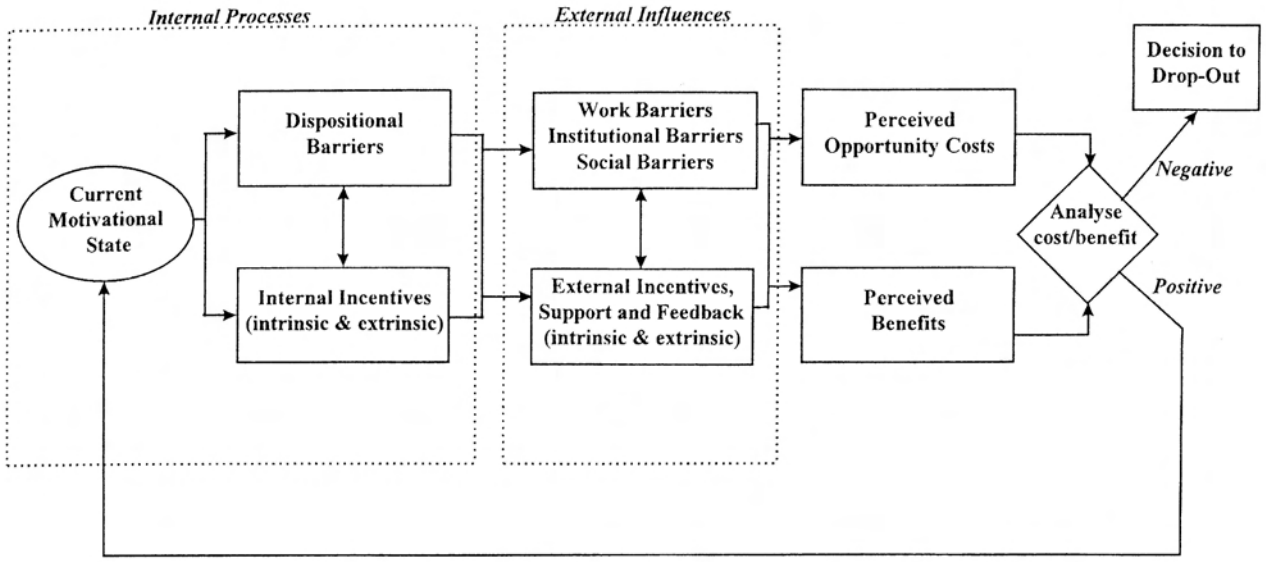

Figure 1: The influence of motivation and the barriers to persistence on student attrition in distance education

motivation is just as dynamic as the other aspects influencing individual behaviour. Given Hermann's (1988) findings on the transition of motivation in distance education, it should be clear that the transition from extrinsic to intrinsic motivation is not only a natural process, but in most cases is imperative to persistence and successful completion.

In order to impact meaningfully on national attrition rates in distance education, macro rather than micro level interventions are required. The remainder of the discussion will therefore focus on the impact distance education institutions and employers can have in reducing attrition.

Distance education institutions and employer organisations can, and should, play a role in facilitating the transition towards intrinsic motivation. Instructional design, student support systems and administrative efficiency have been proven to influence the motivation of students (Bink et al., 1995; Burge, 1988; Kember et al., 1994; Wagner & Uber Gross, 1993; Wlodkowski, 1985). Distance education institutions should, therefore, acknowledge their impact on and responsibility towards assisting their students in creating and sustaining motivation, (refer Deci et al., 1991; Fair & Silvestri, 1992). Considering the findings of Sansone and Morgan (1992), that individuals may be passively involved in the process, institutions may consider more one-sided actions to create and sustain motivation.

As all the respondents in this study were enrolled in a distance education programme as part of an initiative by their employers, the employer should also accept responsibility for enhancing the chances of success in distance education. It is clear from the literature that organisations can influence the student's motivation with career counselling, support and incentives (Billings & Cobb, 1992; Brinkerhoff & Montesino, 1995; Facteau et al., 1995). The results of this study highlight, once again, the importance of well-established concepts, like the importance of a positive learning culture, managerial and peer support for learning and encouragement for the acquisition and implementation of new skills and knowledge within the work environment. Of further importance for both the organisation and the distance education institution, is the observation of Sansone and Morgan (1992) that intrinsically motivated students typically deliver better quality work.

The respective roles of the distance education institution and the employer organisation, are therefore far more complex than merely that of distributor of learning on the one hand, or benefactor from this learning, on the other hand. Both can influence the individuals enrolled for programmes, and both will benefit from a reduction in attrition rates.

Considering the four barriers identified in this study, it is clear that *Institutional* and *Work Barriers* fall strictly in the domain of these two parties. The first step in reducing attrition figures will be for the distance education institutions and employers to accept responsibility for ensuring that all factors hindering success in these areas are addressed. For distance education institutions this would involve improving administrative effectiveness, enhancing programme design and ensuring that all courses are relevant to their students' life situations. Employer organisations will have to demonstrate real support for training and nurture a culture of continuous learning. The second step would be for both parties to counsel and support students in order to alter their perceptions and ultimately to influence the nature and the level of their motivation. This could be done by career and pre-enrolment counselling, regular tutorial meetings and other communication opportunities, these interventions will impact on *Work, Social* and *Dispositional Barriers.* The third step would be for the individual, on a micro level, to integrate distance education with the other components in his or her life and to actively seek ways to create and sustain intrinsic motivation. The focus of these actions would be on overcoming *Social* and *Dispositional Barriers.* Until tangible progress is made on the first two steps, only a small number of students will have the determination to successfully integrate distance education with the other areas of their lives – and the high attrition rates will remain.

As little is known of transitions in motivation and the impact of the barriers to persistence on attrition in distance education, efforts to improve attrition rates tend to be implemented haphazardly. Further research is required on the transition of motivation in distance education, specifically the interaction between intrinsic and extrinsic motivation and whether transition can be linked to specific phases in a distance education programme. Furthermore, the effectiveness of specific interventions aimed at enhancing intrinsic motivation should be tested. Linked to this, the impact of extrinsic incentives on intrinsic motivation and persistence should also be determined. Another important future area for research would be a follow-up study to trace the influence of perceived barriers to persistence on persistence and successful completion.

Distance education seems to be the obvious answer to South Africa's educational and training needs. Current attrition rates, however, are detrimental to the effectiveness of distance education and consequently also to its viability – particularly in the private sector. Until distance education institutions and employer organisations redefine their respective roles and responsibilities, student attrition will continue to diminish the impact of distance education.

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