

STUDENTS' PERCEPTIONS OF THE USE OF INTERACTIVE WHITE BOARDS IN THE DELIVERY OF DISTANCE LEARNING PROGRAMMES

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ABSTRACT

Due to the need for higher education in South Africa, the country experiences a rapid growth in open distance learning, especially in rural areas. Owing to work pressure and financial constraints, people find it difficult to enrol full time at contact universities. The Unit for Open Distance Learning (UODL) at the Potchefstroom campus of the North-West University (NWU), South Africa, was established in 2013, its main function being to deliver open distance learning programmes to 30 000 students from the Faculties of Education Sciences, Theology and Health Sciences. Utilising interactive whiteboards (IWBs), the NWU and UODL are now able to deliver lectures to students concurrently at 55 regional open learning centres across Southern Africa, as well as to an unlimited number of individuals with Internet access worldwide. Although IWBs are not new, our initiative is to use them more extensively to create more contact between lecturers and students. To ensure and enhance quality education it is vital to determine students' perceptions on the

delivery of programmes by means of IWBs. Thus the aim of the study is to explore students' perceptions of the use of IWBs in the delivery of programmes.

Keywords: Open distance learning, Interactive White Boards, Transactional Theory

1. INTRODUCTION

Traditional universities worldwide cannot cope with the demand for higher education. Many universities regard distance education as both a means of giving people greater access to higher education, and a possible solution to the ever-growing demand for higher education.

Correspondence education is largely regarded as the historical foundation of distance education (Tapfumaneyi 2013, 558). The term 'correspondence education' gradually changed to 'distance education' and later to 'distance learning' (Tapfumaneyi 2013, 558). As the field developed, more terms were used, such as 'flexible learning', 'open learning', 'off campus study' and 'independent study'. A term that is used quite often and preferred by many is *open distance learning* (ODL) (Mohakud, Mohapatra and Behera 2012).

Some academics define open distance learning and distance learning as being the same, while others consider them to be different. From a review of the literature, it emerges that many academics prefer the term 'open distance learning', since the principles that underpin the concept of open distance learning are *flexibility* and *accountability* (Mohakud et al. 2012). This means that students have more choices in terms of the following:

- Media (print, online, television, video)
- Place of study (home, campus, workplace)
- Pace of study (time)
- Support mechanism (tutors, lecturers).

ODL also makes education more accessible and provides opportunities for those students who cannot attend a residential campus due to financial or work constraints.

According to Mohakuk et al. (2012), the main characteristics of ODL are open access, flexibility, time and space choices, and learner centredness. It is important for this study to elaborate more on each of these characteristics.

Open access implies a lack of formal entry requirements and an entrance examination.

Flexible learning emphasises an environment that has the following:

- Convergence of open and distance learning
- Recognition of diversity in learning styles

- Unlimited enrolment
- Recognition of the importance of equity in curriculum and pedagogy
- Use of a variety of learning resources and media
- Flexible examination system.

The time and place framework usually has four possible scenarios:

- Same place, same time
- Same place, different time
- Different place, same time
- Different place, different time.

Learner centredness means that the focus has shifted from the lecturer to the student and how the student constructs his/her own knowledge through a process of facilitation. The students are taking ownership of their own learning (Tapfumaneyi 2013).

After this brief theoretical explanation of ODL, the following section provides the background and context of the study.

2. BACKGROUND AND CONTEXT

South Africa is a developing country. It is estimated that in 1994 there were approximately 85 000 underqualified or unqualified in-service teachers in the country, with the majority teaching in rural areas (Van Zyl, Els and Blignaut 2013). The government and higher education institutions realised that this was a major problem, hampering the country's economic growth. The solution proposed was to upgrade the qualifications of all these underqualified and unqualified teachers. The main problem, however, was that these teachers were already in full-time teaching posts and could not attend classes or study full time. Stakeholders realised that distance education is a possible strategy that could be used to solve this problem.

Traditionally the North-West University (NWU) was a campus based university, where students received their lectures face-to-face from lecturers on campus. In 2004 the School of Continuing Teacher Education (SCTE) was established on the Potchefstroom Campus of North-West University to offer programmes for these under- and unqualified teachers, and since 2005 the SCTE has provided academic programmes via ODL to these teachers, who work predominantly in rural areas (Van Zyl et al. 2013).

In 2013, the Unit for Open Distance Learning (UODL) at NWU was established, with the main purpose of delivering open distance programmes to NWU students in Southern Africa. Currently NWU has a total enrolment of 65 000 students on three campuses, of which 30 000 are ODL students. The academic programmes are located

within the faculties, but the UODL is responsible for delivering these programmes to all distance education students.

In the past two years, the UODL has become more technology driven. The rationale behind this initiative was to deliver the academic programmes more effectively to all students. According to Van Zyl et al. (2013), ICT in education refers to the implementation and use of various kinds of technology, including the internet, to transmit knowledge to students. Moore and Kearsley (1996) state that ICT in ODL makes delivering programmes to large number of students more effective, regardless of location and time. Since 2005, the SCTE and later the UODL have implemented various ICT innovations in the field of programme delivery, such as Interactive White Board (IWB) technology, social media, Moodle and Dropbox. The main reason for implementing IWB technology was to reach more than 30 000 NWU open distance students. IWB as technology is not new but the UODL decided to use it as a means of transmitting lectures synchronously from Potchefstroom Campus to 55 open learning centres across Southern Africa. The SCTE and UODL have established 55 open learning centres across Southern Africa over the last five years. Each centre has a part-time manager who is responsible for the management and administration of the centre, and also technical assistants who are responsible for setting up and connecting the technology for broadcasts from the main campus.

At the UODL on the Potchefstroom Campus there are nine multimedia studios. Each multimedia studio has a seating capacity for between 15 and 40 people, and is equipped with a Smart Interactive Whiteboard with a data projector and 152,4 cm LED monitor. It also has two desktop computers connected to the internet. One computer is connected to the IWB, sound system and audio processing system, with wireless microphones and a camera, and the second computer is used for lectures on Panopto video, capturing software with its own camera.

During an IWB session, all open learning centres are connected to one another through the IWBs. This makes it possible for a lecturer and his/her students to be interactive by means of talking or writing to one another. The advantage for the NWU is that one lecturer can now teach via 55 learning centres simultaneously and, furthermore, is able to respond and interact immediately when students ask questions. All the broadcast lectures are recorded by Panopto video capturing software and stored for students to access later, should they so wish.

Quality is an important component of successful teaching and learning and, therefore, the study involved gathering data about the use of IWBs when delivering programmes to open learning centres. According to Harman (1998), quality assurance is the systematic management and assessment procedures adopted by higher education institutions to monitor performance against objectives. Quality has always been an issue in education, particularly distance education. Since the 1990s, quality assurance in higher and distance education has become more prominent, because tax payers and governments want universities to be more accountable for how they spend their money

(Jung 2004). On the other hand, students also demand better quality education (Belawati and Zuhairi 2007). These demands force universities to ensure quality in terms of products, processes and delivery systems (Belawati and Zuhairi 2007). For this study we were specifically interested in the delivery of our academic programmes by means of the interactive white boards.

The use of IWBs is quite wide spread in schools and even in higher education institutions (Higgins, Beauchamp and Miller 2007). The literature indicates, however, that IWBs are utilised mainly as support for the teacher or lecturer in the classroom (Higgins et al. 2007; Turel and Johnston 2012; Miller and Glover 2002). The authors could not find any literature on the use of IWBs as a means of transmitting lectures to distance learning students as used by the UODL. As mentioned earlier, the UODL introduced the use of IWBs to reach more than 30 000 distance learning students. However, we were not sure how students experience lectures being broadcast via IWBs and how such a teaching strategy will impact on service delivery to our students.

Quite a substantial amount of literature exists on the use of IWBs in the school environment. (Turel 2010). The benefits as listed in this research are also applicable to how the UODL uses IWBs as a means of broadcasting lectures. The notion of broadcasting lectures is only one aspect of the use of this technology. Many of the benefits as indicated in other research are also applicable for this study, such as enhanced social interaction between students, reformed learning environments where lecturers/teachers facilitate students, involvement and interaction, and the use of media from the internet to support lecturers/teachers (Turel and Johnson 2012).

These attempts to monitor quality were, however, not the first attempt to do so with distance education programmes at the NWU. The NWU, and specifically the SCTE, undertook various international quality audits to evaluate the academic quality of the programmes. This research project was the next phase of quality assurance and was intended to explore how students perceive the use of IWBs when transmitting knowledge. In the past, the NWU used facilitators at each open learning centre to facilitate sessions with the students. Now, with the innovative use of IWBs, the students can experience first-hand when a lecturer presents his/her lecture to all 55 open learning centres. This type of teaching matches the 'different place, same time' classification as discussed earlier.

The purpose of this research is to explore students' perceptions of the use of IWBs, using Moore's Theory of Transactional Distance and the Equivalency Theory in the delivery of open distance learning programmes at the UODL of NWU.

3. THEORETICAL FRAMEWORK

Moore's Transactional Theory is the appropriate lens to look at the data gathered for this study. The Transactional Theory is not a new theory, but still a very valuable and logical theory to use. A number of authors (Bishoff 1993; Bishoff, Bisconer, Kooker and

Woods 1996) confirmed the value of Moore's Transactional Theory to analyse distance education practice (Falloon 2011). Jung (2004) strengthened this claim when he said that this theory is such a useful conceptual framework for analysing distance education practice.

Moore (1997) defines distance education as the relationship where lecturer and student are separated by time and space, and it is important to understand Moore's theory conceptually. His theory states that the concept of distance in distance education is not only about the distance between the student and lecturer, but also about the quality of the knowledge that is transferred from the lecturer to the student (Gorsky and Caspi 2005).

Moore (1997) goes further by stating that the concept of transaction in distance education is the distance/separation between the lecturer and student. This separation can influence the teaching and learning process, because with a separation there is a psychological and communication space to be crossed, a space where misunderstanding between lecturer and student can occur. Falloon (2011) confirms this notion when he states that separation between lecturer and student can lead to communication gaps and potential misunderstanding. This gap between student and lecturer may also impact negatively on student performance and their motivation and engagement in their studies (Gous and Roberts 2013).

Moore (1997) continues his explanation, discussing three factors that need to be considered when this transaction between lecturer and student is taking place. These three factors are as follows:

- Dialogue
- Structure
- Learner autonomy

Dialogue is more than just effective communication between lecturer and student. It is a more complex process of communication, where the students are aware of what is expected of them and become more engaged with the content, so that communication is not only about the transfer of content, but also about how to use that content to solve problems. Moore (1997) continues his explanation of dialogue, stating that the frequency of dialogue alone is not a crucial factor, but rather, the quality of the dialogue and how students engage with the content at a deeper level of understanding (Falloon 2011). The notion of dialogue is of great importance for this study, because when the UODL delivers programmes via the IWBs, we want to ensure that the dialogue that takes place is the dialogue that Moore envisages.

The second factor concerns the nature of course design and structure. This usually refers to the flexibility or rigidity of the programme design, but in this study we use it in terms of the flexibility or rigidity of our programme delivery structure and knowledge of the curriculum. We were interested in how students experience the teaching and learning strategy (physical structure and curriculum structure) used to deliver lectures via IWBs.

The third factor is learner autonomy, which is very important in any distance education scenario. Learner autonomy includes aspects such as learner self-direction and learner self-determination (Falloon 2011). This means that the learner is more of an integral part of the teaching and learning process (Gorsky and Caspi 2005). This factor is also very important for NWU programmes, because our students are scattered across Southern Africa and need to be self-directed and self-determined to succeed in their studies. It is important that this factor is considered when data are analysed for this study.

A second conceptual framework that is useful for this study is the Equivalence Theory. This theory emphasises the importance of equivalence regarding the quality of learning experiences for students who received tuition face-to-face and/or via ODL. This theory is also applicable to this study, because the UODL must ensure equivalence between all our open learning centres (Nage-Sibande, Van Vollenhoven and Hendrikz 2011). Although this study was not a comparative study between face-to-face, campus-based programmes and distance programmes, it is still important for us to keep equivalence in mind, especially if students' responses tend to compare the quality of face-to-face campus-based delivery of programmes with the delivery of open distance learning programmes.

4. METHODOLOGY

A questionnaire was compiled to find out how students perceive lectures through the IWBs. The questionnaire comprises 28 closed-ended statements. A Likert scale was used with five options, from strongly disagree to strongly agree, with an option not to answer. The questionnaire has two sections: Section A on how students experience lecturers teaching via the IWB, and Section B on how students prepare for participation in the IWB sessions.

Forty questionnaires were sent out to each of the 55 open learning centres of the UODL. The centre managers were asked to distribute the questionnaires to the students. Completion of the questionnaires was voluntary and anonymous. Ninety-two students completed the forms and returned them to the centre manager, who returned them by courier to the UODL.

Although the return percentage was very low, considering the number of registered students, the researchers saw this as an important survey to give some feedback on the use of IWBs. The purpose of this study was not to generalise the findings to a bigger population, but this survey is part of our total strategy of quality assurance and could help the UODL to improve the delivery of programmes to all students. Although the data were gathered and presented quantitatively, the researchers used a more qualitative interpretive approach to analyse and discuss the data in the article.

5. RESULTS

The responses from the students were calculated and presented as percentages in Table 1 and Table 2. In the subsequent discussion, these statements were matched with the three factors, namely, dialogue, structure and learner autonomy (Moore's Transactional Theory). These three factors are also used as headings in the discussion below. The researchers analysed the responses to each statement and qualitatively wrote a descriptive paragraph on the data, substantiated by the literature on ODL, quality assurance and Moore's theoretical framework. The following key was used: AS1 (Section A, Statement 1) or, for example, BS7 (Section B, Statement 7) to indicate which statement is discussed.

Table 1: Section A: Feedback relating to lecturer's presentation

Statements	Strongly disagree	Disagree	Agree	Strongly agree	No answer
1. The lecturer states and explains the outcomes of the module	11	16	42	22	3
2. The lecturer is well prepared to use the study guide and additional materials to provide guidance in terms of realisation of outcomes	8	21	41	26	4
3. The lecturer uses a level of language I can understand	5	9	45	40	1
4. The lecturer presents stimulating content and examples during the white board session	6	23	42	20	9
5. The lecturer listens to students to determine their needs in terms of study assistance during the white board session	13	24	35	27	1
6. The lecturer encourages students to participate in class discussions during a white board session	16	25	37	22	0
7. The lecturer makes the link between study units clear and logical	13	21	45	18	3
8. The lecturer refers to relevant and recent developments in the subjects	4	21	51	20	4
9. The lecturer encourages me to think about the content discussed during white board sessions	12	26	35	22	0
10. The lecturer utilizes the majority of time of the white board session on content	13	24	40	21	2

Statements	Strongly disagree	Disagree	Agree	Strongly agree	No answer
11. The lecturer is friendly and approachable for students	13	15	43	29	0
12. The lecturer communicates in a clearly audible and understandable manner	9	22	43	25	1
13. The lecturer explains how the different outcomes will be assessed	7	26	50	16	1
14. The lecturer gives appropriate guidance on the completion of assignments	8	24	41	24	3
15. The lecturer prescribes a fair volume of study material	2	28	41	23	2
16. The lecturer competently uses video clips during the white board session	13	26	36	18	7
17. The lecturer competently uses internet during the white board session	20	30	36	9	5
18. The lecturer is comfortable and competent to teach via the interactive white board.	21	23	38	16	2

Table 2: Section B: Feedback relating to student's experience

Questions	Strongly disagree	Disagree	Agree	Strongly agree	No answer
1. I, the student, read the relevant learning material prior to the white board session	9	22	44	23	2
2. I, the student, ask questions via the white board if I don't understand the work during the white board session	25	28	35	7	4
3. I, the student, benefit from the white board session	22	26	32	17	3
4. I, the student, feel the white board session was valuable	21	29	29	15	6
5. I, the student, feel the time allocated for the white board session was too short	14	22	36	24	4
6. I, the student, was allowed to participate interactively through the white board with the lecturer	23	27	28	14	8

Questions	Strongly disagree	Disagree	Agree	Strongly agree	No answer
7. I, the student, like white board contact sessions more than traditional contact sessions	33	22	25	15	5
8. I, the student, find the SMS useful if I want more clarification on issues	13	21	41	21	4
9. I, the student, would like to SMS questions to the lecturer during the white board sessions	24	22	39	13	2
10. I, the student, find the call centre useful if I want clarification on issues	11	17	44	23	5

5.1. Dialogue

The following statements can be grouped under Dialogue, Section A: Statements 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 16, 17; and Section B: Statements 2, 9, 10.

The majority of respondents (70%) agreed or strongly agreed that lecturers explained the outcomes to them, and 66 per cent of the respondents said that the lecturer clearly explained to them how the different outcomes would be assessed (AS1, AS13). This is an important finding because Moore (1997) clearly states that for dialogue to succeed between lecturers and students, students have to know what is expected of them. Although the majority of respondents (67%) stated that the lecturers were well prepared for their IWB session, it is still a concern that 31 per cent stated that they felt the lecturers were not so well prepared (AS2). This could contribute to the communication gap that Moore (1997) refers to. In a very positive response, 85 per cent of the respondents indicated that the lecturer used a level of language that they could understand. This is an important aspect, because many students are from rural areas and from different cultural groups and languages, so it is pleasing to see that they feel comfortable with the level of language. This can contribute towards improving the quality of dialogue. Sixty-two per cent of the respondents agreed or strongly agreed that the lecturers presented stimulating content and examples (AS4). Again it is interesting to see that 29 per cent felt differently. The next statement asked the respondents to rate the lecturer according to his /her ability to determine the needs of the students. A relatively low 62 per cent said that the lecturer listened to their needs in terms of the studies (AS5). This is reason for concern, because support is vital in distance education, to determine the needs of the students so that assistance can be provided. If the educational needs of the students are not identified, it can lead to a weaker dialogue between student and lecturer. The next response is linked closely with the previous one in that only 59 per cent of respondents stated that lecturers encouraged them to participate in class discussions during an IWB session (AS6).

The majority of respondents (63% and 71% respectively) felt that the lecturer linked the different study units effectively, and referred to and used recent developments in their subject (AS7, AS8). It is also positive to see that 62 per cent of the respondents indicated that lecturers encouraged them to think more about the work and to ask questions if they needed more help to understand the work. This statement supports Falloon's claim (2011) that the quality of the dialogue depends on the level of understanding.

A relatively large number of respondents (72%) felt that lecturers were friendly and approachable when using the IWBs. Again it is essential in distance learning that lecturers are always approachable, because that is basically their only 'live link' with the University or Faculty (AS11). In a very positive response, 77 per cent of students agreed or strongly agreed that their lecturer communicated clearly and understandably (AS12). It is a good indicator that the foundations for effective dialogue are present in the teaching-learning situation.

The majority of the respondents (65%) indicated that they received appropriate guidance to do their assignments (AS14).

Successful lectures and quality dialogue via the IWB depend largely on how competently lecturers use video clips and general internet resources. Only 54 per cent of respondents indicated that lecturers use video clips (AS16). This is quite a low percentage and a hindering factor for interactivity. It is a possible sign that the IWB is not used to its full potential. In a disappointing result, only 45 per cent of the respondents said that the lecturers used the internet competently (AS17). This is a shortcoming that needs to be addressed, because the IWB makes internet-based teaching much more attractive, and can contribute to improved dialogue between student and lecturer. If not used properly, it can contribute to the communication gap Burgess (2006) refers to. Linked to the previous result is the response to the next statement (AS18), where 55 per cent of the respondents stated that lecturers were competent to teach via the IWB. This is quite low, but one must realise that teaching via IWB is a new endeavour, and the university has ongoing training sessions for staff to become more competent and confident. A lecturer who is confident in the use of the IWB is well equipped to contribute to constructive dialogue.

5.2. Structure

The following statements can be grouped under Structure, Section A: Statements 10, 13, 14, 15. Section B: Statements 3, 4, 7.

A small majority of the respondents stated that they agreed or strongly agreed (61%) that the lecturer utilised his/her time productively to explain content to the students (AS10). It is important to establish how productively a lecturer uses his/her time when teaching via the IWB. Because the timetable for IWB broadcasts is quite full, it is important that lecturers use their teaching time productively. The majority of

respondents (68%) indicated that the lecturers prescribed a fair volume of study material (AS15).

The majority of the respondents (65%) indicated that they received appropriate guidance for their assignments (AS14). It is a concern that the percentage is quite low, because assignments are such an important part of the curriculum.

Sixty-six per cent said that the lecturer clearly explained to them how the different outcomes would be assessed (AS13). It is important that students understand and are familiar with the structure of the curriculum and what is expected of them. It would be interesting to investigate this further at a later stage.

In an interesting outcome, 49 per cent of the respondents indicated they benefited from the IWB sessions (BS3). This is quite low and needs further investigating. One can assume the reason is that this method of delivery is new to the students. This information is important and could be useful to evaluate the effectiveness of the contact sessions.

The next response correlates well with BS3. Fifty per cent of the respondents said that the IWB sessions were valuable to them (BS4). A slight majority of respondents said that they preferred traditional contact sessions with facilitators to IWB sessions (BS7). As mentioned earlier, the mode of delivery via the IWB is a new phenomenon and it is expected that students will feel uncertain about this, but that is why this research was so important, so that improvements can be made where needed.

5.3. Learner autonomy

The following statements can be grouped under Learner autonomy, Section A: Statements 4, 6, 9. Section B: Statements 1, 2, 8.

Sixty-two per cent of the respondents agreed or strongly agreed that the lecturers presented stimulating content and examples (AS4). Again, it is interesting to see that 29 per cent felt differently. This is an important factor as it can contribute to self-directed learning. A student who receives stimulating content and examples, tends to be more positive towards the work, and can become more self-directed in his or her learning.

Participation in class discussions is important to develop confidence and also self-directed learning. Fifty-nine per cent of the respondents agreed or strongly agreed that lecturers encouraged students to participate in class (AS6).

It is important for students to reflect on the content, because that can lead to better understanding and internalisation of knowledge. Reflection is also a sign of self-directed learning and it is, therefore, important that distance education students develop the ability to reflect. The data indicate that 62 per cent of the respondents felt that lecturers encouraged them to think more about the content (AS9). This percentage is average and one would have like to see it higher.

It is important for any student to come to a lecture prepared, but with distance education it is even more important, because of the relatively short period of contact

time between student and lecturer; the lecturer wants to use the time as productively as possible. To prepare the content before the lecture also demonstrates some kind of learner autonomy. Therefore, students were asked if they come prepared to the white board contact session. In a positive response the majority of them (67%) indicated that they read the study material prior to the session (BS1). Asking questions is also an important component of self-directed learning. Only 43 per cent of respondents stated that they asked questions if they did not understand the work (BS2). Linked to this topic is the use of text messages (sms) to clarify issues students do not understand. The majority of respondents (62%) found the sms useful to get more information (BS8).

6. DISCUSSION

The study found that evidence from the data is sufficient to indicate that effective dialogue between students and lecturers does occur. The process of dialogue seems relatively strong, and it can be inferred that it is a result of the use of IWBs. This is a positive finding, because interactivity was one of the main reasons for implementing IWB technology. This clearly links to Turel's notion (2012) that one of the benefits of the use of IWBs is more student involvement. The data further show that most respondents feel that interactivity happens at various stages of the teaching and learning process, and that contributes further to positive dialogue between the lecturer and student. This is also supported by Turel (2012) when he mentions that IWBs contribute to interactivity. Another important component of dialogue is communication, and the data clearly indicated that the majority of students are satisfied with the way that lecturers communicate with them and with the level of language. There are, however, also areas for improvement regarding dialogue. One such area is the knowledge and skill to use technology. The data indicated quite a low level of such knowledge and skill. The lecturers' use of the internet is another aspect that can inhibit dialogue, and it was clearly evident from the data that there is room for improvement in this regard. Less than half the respondents felt competent to use the internet and to teach via the interactive whiteboard. Dialogue is strengthened further by the fact that all 55 open learning centres are linked, and lecturers and students can communicate freely.

We found sufficient evidence to suggest that the structure of the curriculum and our physical structures are adequate. Most students were happy with the timetable and how we structure the white board sessions. The students were also happy with the volume of work they received from the lecturers. An interesting result was that some students still prefer the previous method of face-to-face teaching by a facilitator, but this is understandable, because the use of IWBs is a new initiative. It will no doubt take time for students to get used to this and to see the benefits the method offers, such as getting first-hand lectures from the lecturer who has developed the course and set up the examination papers. The structure of our delivery is further enhanced by the recording of lectures via Panopto software.

Learner autonomy is an integral part of distance learning and of Moore's theory, and the data indicated that our students are moving in the direction of learning autonomy. We based this finding on the fact that more than half of the respondents agreed that lectures encouraged them to participate during the IWB sessions. An important indicator for learner autonomy is the fact that more than 60 per cent of the students said that lecturers encouraged them to think more about the content. This finding of positive learner autonomy is further strengthened by the fact that students mentioned that they came to the lectures prepared. This is the first step to learner autonomy and an aspect that must be developed in future.

7. CONCLUSION

The purpose of this research was to explore students' perceptions of the use of IWBs, using Moore's Theory of Transactional Distance in the delivery of open distance learning programmes at the UODL of NWU. We analysed the data in terms of Moore's Transactional Distance Theory. This theory comprises three components: dialogue, structure and learner autonomy. We tried to establish how strong or weak dialogue, structure and learner autonomy feature when students have IWB sessions. Generally the data suggested that the current use of the IWB to deliver programmes to the students contributes to successful dialogue, structure and learner autonomy. We also inferred from the data that, in terms of Moore's theory, there is no real communication gap or scenarios of misunderstanding between students and lecturers, although it was also clear from the data that there is room for improvement in certain areas, especially the lecturers' competency to use the internet more interactively. In terms of the equivalency theory we found no evidence to suggest that there is a problem with equivalence between delivery sites.

We recommend that the UODL should continue to expand the use of IWBs to broadcast lectures to distance education students, because the data indicates that by using this technology, the UODL is contributing to the development of transactional learning.

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