

Effect of Contact Class Attendance on the Academic Success of Open Distance Learning Students in Advanced Certificate in Education Programs

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Abstract

The article first explores open distance learning (ODL) as a delivery mode for professional teacher development programs in South Africa by comparing the ODL models of selected universities in developing, developed, and newly industrialized contexts. The article then reports on an empirical investigation conducted about the effect of contact class and vacation school attendance on the academic success of students ($n=1310$) who wrote examination papers ($n=4931$) for a variety of modules in four purposefully selected *Advanced Certificate in Education (ACE)* programs at the School of Continuing Teacher Education (SCTE) of the North-West University in South Africa. Descriptive statistics show the majority of students did not attend any contact classes or vacation schools, while still performing academically above average. Computing Spearman's rank-order correlations (r), no practically significant correlations were found between contact class and vacation school attendance and the academic success of students. However, ANOVA analyses reveal that it was beneficial for students to rather attend three contact sessions, than two or no contact sessions.

Keywords: *Contact classes; Vacation schools; Class attendance; Academic success; Open distance learning*

Introduction

One of the greatest challenges in South Africa since 1994 is the large number of unqualified and under-qualified practicing teachers within the National Department of Education. Since the majority of these teachers live and work in rural areas, *open distance learning (ODL)* is proving to be the most practical delivery mode for professional teacher development (Pandor, 2004; Van Zyl & Spamer, 2010). Socio-economic, demographic and itinerant barriers, as well as family and occupational responsibilities hinder unqualified and under-qualified teachers from attending full-time university classes. Since 1993, in a momentous attempt to overcome these barriers, the *School of Continuing Teachers Education (SCTE)* at the North-West University dedicated itself to deliver quality professional development programs to teachers in rural areas. As from 2005, the SCTE utilizes ODL as delivering mode to provide unqualified and under-qualified teachers in rural areas the opportunity to enroll, throughout the year and from any geographic location in South Africa and Namibia, for accredited teachers' qualifications without halting their careers and leaving their schools and families to study on-campus. The ODL model of the SCTE provides students with the opportunity to attend, within a radius of 100km from their work, non-compulsory supportive contact classes and vacation schools on scheduled dates throughout the year. Contact classes and vacation schools are presented by

full-time lecturers and accredited part-time facilitators mainly on Saturdays and during school vacations to enable students to attend them without being meddlesome to their teaching responsibilities.

Currently, no South African research exists on the effect of contact class attendance on the academic success of ODL students. The coordination and presentation of contact classes at various rented venues throughout South Africa and Namibia demand a high monetary commitment from the SCTE and therefore necessitate an investigation into the effect of contact class attendance on the academic success of students in order to determine the feasibility of contact classes within the implemented ODL model. Accordingly, this paper reports on research conducted on the effect of contact class attendance on the academic success of students enrolled for *Advanced Certificate in Education (ACE)* programs at the SCTE.

Orientation: “Open Distance Learning” Opposed to “Distance Education”

According to Holmberg (1986), the first appearance of distance education can be traced back to a Swedish newspaper advertisement of 1833 which pioneered the opportunity to study composition through the post as medium. Initially, distance education was delivered primarily through correspondence courses via the post (Watkins, 1991). As early as 1881, the University of Illinois delivered Baccalaurean, Masters’ and Doctorate degrees through off-campus programs based on the Oxford-Cambridge-London Model (Schlosser & Simonson, 2002). Currently, distance education is broadly defined as the didactic preparation and presentation of study material, as well as the guidance and support of student learning, in which geographical distance is bridged between lecturer and student by means of at least one germane technical medium (Delling, 1987). Until recently, the terminology “distance education” was commonly used to describe this form of pedagogy.

Edwards (1995) and Picciano (2000) promote the terminology “open distance learning” (ODL), divergent from “distance education”, as a new pedagogical method in a diverse and rapidly changing World. According to them, “distance education” entails mass produced course material intended for the mass market, in which curricula are developed and delivered from the viewpoint of lecturers. Opposed to this, the emphasis of ODL shifts from the mass market to the individual needs and expectations of students and markets, i.e. local contexts guide the development, implementation and deliverance of curricula. ODL epitomizes the opportunity for developing countries, such as South Africa and other African countries, to reach their national objectives.

According to the United Nations Educational Scientific and Cultural Organization (2002), increase in interest in ODL can be contributed to two main factors: (i) the growing need for continuing training and re-training of skills, and (ii) technological development and innovative communication which make teaching and learning over a distance increasingly easier via e-learning. Accordingly, more and more universities around the world implement and use ODL as delivery mode, which usually entails both supportive contact classes and the progressive use of technology and e-learning.

Comparison between the ODL Models of Selected Universities in Developing and Developed Countries

As part of a meta-analysis that compared the ODL models of purposefully selected universities in both developing and developed countries with regard to foundation and history, program delivery, contact classes, study groups, study material, examinations and e-learning, the researchers specifically focused on the role that traditional paper-based material, educational technology, e-learning and contact classes play in these models (compared cryptographically in Table 1).

Table 1. Cryptographic comparison between the ODL models of purposefully selected universities in developed, developing, and newly industrialized countries

	Uses traditional paper-based study material	Uses various types of educational technology (CD, DVD, radio, satellite, TV, e.g.)	E-learning (Internet-based)	Contact classes	Contact classes non-compulsory (NC) however, some contact classes compulsory (v)
Developed countries					
<i>Open University, Milton Keynes, UK</i>	√	√	√	√	NC √
<i>Charles Sturt University, Australia</i>	√	√	√	√	NC √
<i>Linnaeus, Sweden</i>	√	√	√	√	NC √
Developing Eastern countries					
<i>Bangladesh Open University</i>	√	√	√	√	NC
<i>Universitas Terbuka, Indonesia</i>	√	√	√	√	NC
<i>Ghandi National Open University (IGNOU), India</i>	√	√	√	√	NC √
Developing African countries					
<i>National Open University of Nigeria</i>	√	√	√	√	NC √
<i>Open University of Tanzania</i>	√	√		√	√
<i>Makerere University, Uganda</i>	√	√	√	√	NC √
South Africa as a newly industrialised country (NIC)					
<i>University of South Africa (UNISA)</i>	√	√	√	√	NC √
<i>University of Pretoria</i>	√	√	√	√	NC √
<i>School of Continuing Teacher Education, North-West University</i>	√	√	√	√	NC

Four groups of universities that use ODL models were purposefully selected: (i) universities in developed countries, i.e. the Open University in the United Kingdom, the Charles Sturt University in Australia, and Linnaeus in Sweden; (ii) universities in developing Eastern countries, i.e. the Bangladesh Open University, Universitas Terbuka in Indonesia, and the Ghandi National Open University in India; (iii) universities in developing African countries, i.e. the National Open University of Nigeria, the Open University of Tanzania, and the Makerere University in Uganda; and (iv) universities in South Africa as a newly industrialized country, i.e. the University of South Africa, the University of Pretoria, and the North-West University's SCTE.

As from 2011, South Africa is listed as a *Newly Industrialised Country (NIC)* by the International Monetary Fund (2011). NICs are characterized by: (i) an economy that has not yet reached 1st World status but has, in a macroeconomic sense, outpaced its developing counterparts, (ii) rapid economic growth that is export-oriented, (iii) an increasingly open-market economy that allows free trade, (iv) ongoing industrialization, (v) migration of populations to cities to work in industries, factories and mines, (vi) increased social freedom and civil rights, etc. (International Monetary Fund, 2011). All these universities deliver well established and reputable ODL programs to large numbers of students Worldwide. For example, both the Open University in Milton Keynes and the Bangladesh Open University have more than 200,000 students enrolled for ODL programs, the Universitas Terbuka in Indonesia swank with 350,000 enrolled students and 700 available courses to opt from, while Nigeria shines out with some of the most modern and largest ODL unites in Africa.

From Table 1 it becomes clear that contact classes form an integral part of ODL models Worldwide. The Bangladesh Open University and the Universitas Terbuka in Indonesia is the only purposefully selected universities in which all contact classes are non-compulsory. In the other universities, the majority of contact classes are non-compulsory, while some contact classes are compulsory and prerequisite for specific modules. At the Open University of Tanzania all contact classes are compulsory and considered an essential component of effective teaching and learning. Although these universities regard contact classes as an important supportive and even indispensable component of ODL, no research could be found on the effect of contact class attendance on the academic success of ODL students. However, some related studies could be found, mostly focusing on the effect of contact classes on both on-campus and off-campus students, the effect of contact classes on social interaction, and the effect of contact classes on learning experiences.

Related Research Studies

Shachar (2008) shows that a variety of research studies comparing face-to-face learning with distance learning report contradicting findings. In a meta-analysis of 232 studies conducted between 1985 and 2002 which compared traditional classroom instruction with distance education, Bernard, Abrami, Lou, Borokhovski, Wade, Wozney, Wallet, Fiset and Huang (2004) found distance education to be more effective in many cases. Accordingly, Taylor (2006) also found that face-to-face interaction between lecturer and student in a contact class situation is not a prerequisite for effective teaching and learning. The effectiveness of face-to-face contact sessions was compared with online learning programs by Solimeno, Mebane, Tomai and Francescato (2008). They found that online methods create innovative possibilities in terms of learning problems and time management. The study of Hui, Crowcroft and Yoneki (2008) found education over a distance, which incorporate technology, is more effective for

students to enhance their vocabulary than contact classes. On the other hand, contact classes seem to be more effective for students to enhance their listening skills, than distance education. Synchronic application of performance outcomes prefers classroom education, while asynchronous application of performance outcomes prefers distance education (Bernard, et al., 2004).

If one looks at the few research findings on the effect of contact classes on social interaction, Simpson (2002) found that student dropout rate increases with 20% in distance education as a result of educational isolation where students do not attend contact classes. On the other hand, Lobel and Neubauer (2005) compared students who attend face-to-face contact classes with a group of students who study via a web platform. Both student groups were educated by the same lecturer. They found that the online group was more actively involved in virtual classroom discussions and less afraid to share their opinion than the students who attended face-to-face contact classes. Furthermore, the social interaction of the online group developed into a specific group identity, something that the researchers could not detect amongst the students who attended contact classes. In a large quantitative study, Jahng, Krug and Zhang (2007) confirm that students who study online courses perform significantly better than students who attend traditional face-to-face contact classes.

In a research study conducted on the effect of contact classes on the learning experience of students, Deka and McMurry (2006) found distance education students are less successful in examinations than students who attend contact classes. They also found that reading comprehension and reading rate are indicative of the examination success of students who attend face-to-face contact classes.

Exploring the literature it becomes clear that in spite of various related studies on contact classes for distance education, no research studies could be found, internationally nor nationally, that specifically investigate the effect of contact class attendance on the academic success of ODL students. *The current investigation aims to bridge this gap with an empirical investigation into the effect of contact class attendance on the academic success of ODL students in Advanced Certificate in Education (ACE) programs.*

Research Paradigm, Design and Methodology

This objective quantitative research study falls within the Radical Structuralism meta-paradigm. The Radical Structuralism approach explores social phenomena with quantitative research design and methodology in which practically significant correlations and differences are empirically computed and analyzed between variables (Burrell & Morgan, 1979). This approach was used to empirically investigate the effect of contact class attendance on the academic success of ODL students enrolled for Advanced Certificate in Education (ACE) programs at the SCTE of the North-West University in South Africa.

Demographics of Sample

For the purpose of this investigation, data (final module marks and attendance registers) of students who wrote examination in the following ACE programs was purposefully selected: (i) Mathematics Education; (ii) Learner Support; (iii) Foundation Phase; and (iv) Geography.

Table 2. Frequencies of examination papers written during October 2009 for various modules per ACE program

Advanced Certificate in Education (ACE) programs	Frequencies examination papers written for various modules	% Frequencies examination papers written for various modules
Mathematics Education	1298	26.32
Learner Support	1923	39.01
Foundation Phase	1657	33.60
Geography	53	1.07
Total	4931	100%

Table 2 shows the frequencies of examination papers written during October 2009 for various modules per ACE program. In total, four thousand nine hundred and thirty one (n = 4931) examination papers were written by one thousand three hundred and ten (n = 1310) students for various modules in the four ACE programs. The student population is representative of gender, as well as diverse cultural, language and age groups. The most examination papers were written for modules in the Learner Support ACE program (n = 1923), while only fifty three (n = 53) examination papers were written for modules in the Geography ACE program.

Table 3. Frequencies of examination papers written during October 2009 for various modules in the four ACE programs per South African Province

South African Provinces (main geographical regions)	Frequencies of examination papers written for various modules	% Frequencies examination papers written for various modules
Eastern Cape	1099	22.29
Free State	147	2.98
Gauteng	191	3.87
KwaZulu-Natal	590	11.97
Limpopo	829	16.81
Mpumalanga	1075	21.80
North-West	432	8.76
Northern Cape	255	5.17
Western-Cape	276	5.60
Unspecified	37	0.75
Total	4931	100%

Table 3 provides the frequencies of examination papers written for various modules in the four ACE programs at 68 examination centers throughout the nine Provinces (main geographical regions) of South Africa. Most examination papers were written in the Eastern Cape (n = 1099) and Mpumalanga (n = 1075) Provinces.

Data Mining and Empirical Analysis

The two main variables identified for the empirical analysis are: (i) contact class attendance and (ii) academic success (final module marks). The North-West University’s student record system was used to obtain an electronic dataset containing the final module marks (accumulate from module assignment and examination marks) of students who wrote examination papers during October 2009 for the various modules in the four purposefully selected ACE programs. The attendance registers of contact centers were checked to see how many non-compulsory contact opportunities (out of six contact classes and one vacation school) these students attended during the period April to September 2009 for the various modules in which they wrote examination papers. The attendance register data was captured and included as part of the dataset. The statistical software SPSS (2007) was used to perform the empirical analyses. Descriptive statistics were computed to explore the sample demographics (Tables 2 and 3), as well as to calculate contact class and vacation school attendance frequencies (presented in Tables 4 and 5 below). Cramer’s effect sizes (V) were calculated using two-way tables (Tables 6 to 9) in order to search for practical significant discrepancies, if any, between the contact class and vacation school attendance for modules within each of the four ACE-programs. Inferential statistics were then computed to search for practically significant Spearman’s rank-order correlations (r-values) between academic success (final module marks) and contact class attendance (presented in Table 10 below). In order to establish if it was more beneficial for students’ academic success to attend three contact sessions rather than one, two or no contact sessions, a one way ANOVA association analysis (Cohen’s d-values) was preformed (presented in Table 11 below).

Findings

Contact Class and Vacation School Attendance Frequencies

Table 4 provides the contact class attendance frequencies and Table 5 the vacation school attendance frequencies of the total sample of examination papers written (n = 4931) by students (n = 1310) for various modules in the four ACE programs.

Table 4. Contact class attendance frequencies of examination papers written for various modules in the four ACE programs

Number of contact classes attended	Frequencies of examination papers written for various modules	% Frequencies examination papers written for various modules	Mean scores of academic success (final marks)	Standard deviation of academic success (final marks)
0	3999	81.10%	56.27	15.07
1	864	17.52%	58.28	13.43
2	65	1.32%	56.11	15.15
3	3	0.06%	63.67	15.04
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
Total	4931	100%	56.63	14.81

Table 5. Vacation school attendance frequencies of examination papers written for various modules in the four ACE programs

Vacation school attendance	Frequencies examination papers written for various modules	% Frequencies examination papers written for various modules
0	4538	92.03%
1	393	7.97%
Total	4931	100%

It is clear from the results that the vast majority of students (81.1%) who wrote examination papers for various modules did not attend any contact classes (n = 3999), while 17.52% (n = 864) attended one contact session, 1.32% (n = 65) attended two contact sessions, and only 0.06% (n = 3) attended three contact sessions. No students attended four, five or six contact sessions for any of the modules written. Further analysis showed that the contact class attendance rate for modules in the Mathematics Education ACE program was the lowest (86% of students who wrote examination papers for modules in this program did not attend any contact classes).

The vast majority of students (92.03%; n = 4538) who wrote examination papers for various modules in the four ACE programs also did not attend the vacation school presented during July 2009, while only 7.97% (n = 393) attended the vacation school. The percentage frequency vacation school attendance was therefore even lower than the percentage frequency contact class attendance. The vacation school attendance rate for modules in the Learner Support ACE program was the lowest (92.9% of students who wrote examination papers for modules in this program did not attend the vacation school).

Most students who wrote examination papers for modules in the four ACE programs performed above average. The average pass rate of the 4931 examination papers written for various modules during October 2009 was 77.29% (n = 3811). The highest average pass rate for program modules was 81.14% for the Geography ACE program. A small difference was found between the average pass rate of modules in which students attended one or more contact classes (57.45%) and the average pass rate of modules in which students did not attend any contact classes (54.69%). Thus, from the descriptive statistics it already seems that contact session attendance has little or no impact on the academic success of students. However, the researchers decided to perform inferential statistics (correlations) in order to compute the effect of contact class attendance on the academic success of students.

Table 6. Two-Way Table of the Number of Students Who Attended Contact Classes and Vacation Schools Within the ACE-Program *Mathematics Education*, and Who Wrote Examination During October 2009

		Contact class attendance								Vacation school attendance				Pass / fail			
		No contact class		1 contact class		2 contact classes		3 contact classes		No vacation school		Vacation school		Fail final module mark < 50		Pass final module mark > 50	
MATHEMATICS EDUCATION	MODULES	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
	NDWK522	100	97.1	3	2.9	-	-	-	-	103	100	-	-	6	5.8	97	94.2
	NWPK511	133	85.8	18	11.6	3	1.9	1	0.7	133	83.7	22	13.8	22	14.2	133	85.8
	ORLK521	74	83.2	15	16.9	-	-	-	-	85	95.5	4	4.5	26	29.2	63	70.8
	NWPK521	85	84.2	16	15.8	-	-	-	-	100	99.0	1	0.9	26	25.7	75	74.3
	FSET511	110	79.1	28	20.1	1	0.7	-	-	117	84.2	22	15.8	34	24.5	105	75.6
	EUCE511	123	91.8	11	8.2	-	-	-	-	131	97.8	3	2.2	4	2.9	130	97.0
	ORLK511	105	78.9	24	18.1	4	3.0	-	-	118	88.7	15	11.3	46	34.6	87	65.4
	EDFM523	88	88.0	12	12.0	-	-	-	-	93	93.0	7	7.0	40	40.0	60	60.0
	HIVA521	105	91.3	10	8.7	-	-	-	-	108	93.9	7	6.1	20	17.4	95	82.6
	NWPK512	143	85.1	21	12.5	4	2.4	-	-	145	86.3	23	13.7	56	33.3	112	66.7
	NWPK522	63	82.9	13	17.1	-	-	-	-	67	89.3	8	10.7	34	44.7	42	55.3
	1129			171		12		1	-	1200		112		314	23.9	999	76.1
V = 0.1; p = 0.0000									V = 0.2; p = 0.0000				V = 0.3; p = 0.0000				

Table 7. Two-Way Table of the Number of Students Who Attended Contact Classes and Vacation Schools Within the ACE-Program *Learner Support*, and Who Wrote Examination During October 2009

		Contact class attendance								Vacation school attendance				Pass / fail			
		No contact class		1 contact class		2 contact classes		3 contact classes		No vacation school		Vacation school		Fail final module mark < 50		Pass final module mark > 50	
LEARNER SUPPORT	MODULES	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
	ORLK521	124	89.9	13	9.4	1	0.7	-	-	131	94.9	7	5.1	32	23.2	106	76.8
	ORAK511	133	77.8	35	20.5	3	1.8	-	-	146	85.4	25	14.6	29	16.9	142	83.0
	FSET511	141	75.4	43	22.9	3	1.6	-	-	161	86.1	26	13.9	49	26.2	138	73.8
	LSSH528	104	83.9	16	12.9	4	3.2	-	-	124	100.0	-	-	8	6.5	116	93.6
	LSED518	97	71.3	37	27.2	2	1.5	-	-	136	100.0	-	-	46	33.8	90	66.2
	EUCE511	139	80.4	32	18.5	2	1.2	-	-	172	99.4	1	0.6	8	4.6	165	95.4
	LSDL528	122	85.9	18	12.7	2	1.4	-	-	132	92.9	10	7.0	6	4.2	136	95.8
	ORLK511	170	82.5	35	16.9	1	0.5	-	-	182	88.4	24	11.7	90	43.7	116	56.3
	EDFM523	125	85.6	18	12.3	3	2.1	-	-	133	91.1	13	8.9	70	47.9	76	52.1
	ORAK521	128	83.7	20	13.1	5	3.3	-	-	153	100.0	-	-	29	18.9	124	81.1
	HIVA521	161	87.0	22	11.9	2	1.1	-	-	174	94.1	11	5.9	26	14.1	159	85.9
	LSIE518	107	76.4	32	22.9	1	0.7	-	-	123	87.9	17	12.1	35	25.0	105	75.0
		1551			321		29		0		1767		134		428	22.5	1473
V = 0.1; p = 0.00001									V = 0.2; p = 0.00001				V = 0.3; p = 0.0000				

Table 8. Two-Way Table of the Number of Students Who Attended Contact Classes and Vacation Schools Within the ACE-Program *Foundation Phase*, and Who Wrote Examination During October 2009

		Contact class attendance								Vacation school attendance				Pass / fail			
		No contact class		1 contact class		2 contact classes		3 contact classes		No vacation school		Vacation school		Fail final module mark < 50		Pass final module mark > 50	
FOUNDATION PHASE	MODULES	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
	ORAK511	202	71.9	76	27.1	3	1.1	-	-	235	83.6	46	16.4	61	21.7	220	78.3
	FSET511	235	77.1	64	20.9	6	1.9	-	-	261	85.6	44	14.4	86	28.2	219	71.8
	EUCE511	202	80.5	47	18.7	2	0.8	-	-	246	98.0	5	1.9	8	3.2	243	96.8
	ORLK511	237	82.0	47	16.3	5	1.7	-	-	242	83.7	47	16.3	101	34.9	188	65.1
	FROL571	121	72.5	40	23.9	6	3.6	-	-	166	99.4	1	0.6	17	10.2	150	89.8
	FROF571	154	75.5	48	23.5	1	0.5	1	0.5	204	100.0	-	-	58	28.4	146	71.6
	FROG571	129	77.3	36	21.6	1	0.6	1	0.6	166	99.4	1	0.6	37	22.2	130	77.9
		1280			358		24		2		1520		144		368	22.1	1296
V = 0.1; p = 0.99982									V = 0.2; p = 0.0000				V = 0.3; p = 0.0000				

Table 9. Two-Way Table of the Number of Students Who Attended Contact Classes and Vacation Schools Within the ACE-Program *Geography*, and Who Wrote Examination During October 2009

		Contact class attendance								Vacation school attendance				Pass / fail			
		No contact class		1 contact class		2 contact classes		3 contact classes		No vacation school		Vacation school		Fail final module mark < 50		Pass final module mark > 50	
GEOGRAPHY	MODULES	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
	ORAK511	4	66.7	2	33.3	-	-	-	-	5	83.3	1	16.7	-	-	6	100.0
	FSET511	7	58.3	5	41.7	-	-	-	-	11	91.7	1	8.3	3	25.0	9	75.0
	EUCE511	5	50.0	5	50.0	-	-	-	-	10	100.0	-	-	-	-	10	100.0
	ORLK511	6	75.0	2	25.0					8	100.0	-	-	1	12.5	7	87.5
	EDFM523	2	100.0	-						2	100.0	-	-	2	100.0	-	-
	GBGK511	8	100.0	-						8	100.0	-	-	4	50.0	4	50.0
	GSGK511	7	100.0	-	-	-	-	-	-	7	100.0	-	-	-	-	7	100.0
	GCLK521	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GGGK521	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ORAK521	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ORLK521	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	HIVA521	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		39			14		0		0		51		2		10	18.9	43
V = 0.3; p = 1.0000								V = 0.2; p = 1.0000				V = 0.6; p = 0.55178					

Discrepancies Between Contact Class and Vacation School Attendance for Modules within the Four ACE-Programs

Cramer's effect sizes (V) were calculated using two-way tables (Tables 6 to 9) in order to search for practical significant discrepancies, if any, between the contact class and vacation school attendance for modules within each of the four ACE-programs. Small effect sizes were found between the contact class attendance for modules with the ACE-programs Mathematics Education ($V = 0.1$; $p = 0.0000$), Learner Support ($V = 0.1$; $p = 0.00001$) and Foundation Phase ($V = 0.1$; $p = 0.99982$), which indicate small discrepancies between the contact class attendance of modules within these programs. A medium effect size ($V = 0.3$; $p = 1.000$), which tends towards a practically significant discrepancy, was found between the contact class attendance for modules within the ACE-program Geography. For example, all students (100%) did not attend any contact classes for the modules EDFM523, GBGK511 and GSGK511, while 75% of students did not attend any contact classes for the module ORLK511, appose to 50% who did not attend any contact classes for the module EUCE511. Furthermore, small effect sizes were found between the vacation school attendances for modules in all four programs, i.e. Mathematics Education: $V = 0.2$, $p = 0.0000$ (Table 6); Learner Support: $V = 0.2$, $p = 0.00001$ (Table 7); Foundation Phase: $V = 0.2$, $p = 0.0000$ (Table 8); and Geography: $V = 0.2$, $p = 1.0000$ (Table 9), which indicate no practically significant discrepancies between the vacation school attendance for modules within the four ACE=programs.

Discrepancies between Students' Academic Success (Pass/Fail) for Modules within the Four ACE-Programs

Table 6 indicates, per module, students' academic success (pass / fail) within the ACE-program Mathematics Education for the October 2009 examination. The mean pass percentage for all modules in this program is 76.1%. Cramer's effect size (V) was calculated to search for practically significant discrepancies between students' academic success (pass / fail) for modules within this program. A medium effect ($V = 0.3$; $p = 0.0000$) was found that indicates a statistically significant discrepancy, which tends towards practical significance. For example, the mean pass percentage for NDWK522 is 94.2% against only 5.8% who fail, and the pass percentage for EUCE511 is 97% against only 2.9% who fail. In contrast with these findings, the mean pass percentage for EDFM523 is 60% with a 40% fail percentage, and the mean pass percentage for NWPK522 is 55.3% with a 44.7% fail percentage. These discrepancies in academic success account for the medium effect size $V = 0.3$.

Table 7 indicates, per module, students' academic success (pass / fail) within the ACE-program Learner Support for the October 2009 examination. The mean pass percentage for all modules in this program is 77.5%. The highest pass percentage (95.8%) was attained for LSDL528 and the lowest for EDFM523 (52.1%). Cramer's effect size (V) was calculated to search for practically significant discrepancies between students' academic success (pass / fail) for modules within this program. A medium effect ($V = 0.3$; $p = 0.0000$) was found that indicates a statistically significant discrepancy, which tends towards practical significance. For example, the mean pass percentage for LSDL528 is 95.8% against only 4.2% who fail. In contrast with these findings, the mean pass percentage for EDFM5123 is 52.1% against 47.9% who fail. Such discrepancies in academic success account for the medium effect size $V = 0.3$.

Table 8 indicates, per module, students' academic success (pass / fail) within the ACE-program Foundation Phase for the October 2009 examination. The mean pass percentage for all modules in this program is 77.9%, which is very high despite low contact class attendance. Cramer's effect size (V) was calculated to search for practically significant discrepancies between students' academic success (pass / fail) for modules within this program. A medium effect (V = 0.3; p = 0.0000) was found that indicates a statistically significant discrepancy, which tends towards practical significance. For example, the mean pass percentage for EUCE511 is 96.8% against only 3.2% who fail. In contrast with these findings, the mean pass percentage for ORLK511 is 65.1% against 34.9% who fail. Such discrepancies in academic success account for the medium effect size V = 0.3.

Lastly, Table 9 indicates, per module, students' academic success (pass / fail) within the ACE-program Geography for the October 2009 examination. The mean pass percentage for all modules in this program is 81.1%, which is very high despite low contact class attendance. Cramer's effect size (V) was calculated to search for practically significant discrepancies between students' academic success (pass / fail) for modules within this program. A large effect (V = 0.6; p = 0.55178) was found between the academic success of modules within this program. For example, three modules (ORAKJ511, EUCE511 and GSGK511) have a 100% pass percentage, against a pass percentage of 50% for GBGK511 and 75% for FSET511.

Correlations between Academic Success (Final Module Marks) and Contact Class and Vacation School Attendance

Spearman's rank-order correlations (r) were computed to search for significant correlations between academic success (final module marks) and contact class and vacation school attendance.

Table 10. Spearman's rank-order correlations (r) computed between academic success (final module marks) and contact class and vacation school attendance

	Contact class attendance	Vacation school attendance
Academic success (final module marks)	r = 0.04 No practically significant correlation	r = -0.02 No practically significant correlation
Contact class attendance		r = 0.14 No practically significant correlation

As seen in Table 10, no practically significant correlations ($r \geq 0.5$) were found between contact class and vacation school attendance and the academic success (final module marks) of students. A possible reason why no practically significant correlations were found between academic success and contact class and vacation school attendance is the fact that the vast majority of students who perform well in their modules did not attend any contact classes or the vacation school. These students may feel that they do not need any study support in the form of contact classes and a vacation school. Satisfactory academic success (final marks) thus correlates more strongly with no contact class attendance and therefore overshadows the

possible effect that contact class attendance may have on the academic success of certain students (the effect is thus cancelled out by the larger data pool). One should also consider the fact that the percentage frequency of students who attended contact classes for various modules (18.9%) represents only a small portion (about one fifth) of the total sample. Therefore, contact class attendance will unlikely show a practically significant effect on academic success in the current investigation. Also included in Table 6 for interest sake, no practically significant correlation was found between contact class attendance and vacation school attendance. This indicates that the majority of students who attended contact classes for specific modules did not attend the vacation school for the same modules.

Table 11. One-Way ANOVA Correlation between Academic Success (Final Module Marks) and an Increase in the Number of Contact Class Attendance

0 to 4 contact classes attended				5 contact classes attended				Cohen's effect size (d)
Number of contact classes attended	n	Mean (academic success)	Standard deviation (academic success)	Number of contact classes attended	n	Mean (academic success)	Standard deviation (academic success)	
0	3999	56.27	15.07	3	3	63.67	15.04	0.5
1	864	58.28	13.43	3	3	63.67	15.04	0.4
2	65	56.11	15.15	3	3	63.67	15.04	0.5

In order to establish if it was more beneficial for students' academic success to attend three contact sessions rather than one, two or no contact sessions, a one way ANOVA association analysis was performed to search for practically significant discrepancy (Cohen's effect sizes) between three contact session attendance against one, two and no contact sessions attendance. As reported in Table 11, a medium effect ($d = 0.5$), which tends towards a practically significant discrepancy, was found between three contact session attendance against two contact session attendance; while only a small effect ($d = 0.36$), indicative of a statistically significant discrepancy, was found between three contact session attendance and one contact session attendance. A medium effect ($d = 0.5$), which tends towards a practically significant discrepancy, was also found between three contact session attendance and no contact session attendance. These findings suggest it was beneficial for students in the current investigation to rather attend three contact sessions than two or no contact sessions. However, one should be cautious to generalize these findings because they pertain to the current research sample which reports low contact class attendance.

Conclusions and Recommendations

The results show that the majority of students in the current study did not attend any contact sessions or vacation schools. During 2009, the SCTE presented a total of 12 contact classes and two vacation schools at various contact centers throughout South Africa. This study compared the final marks of modules in which students wrote examination papers during October 2009 with the six contact classes and one vacation school presented prior to the examinations during the period April to September 2009. The average contact session attendance rate (18.9%) and vacation school attendance rate (7.97%) for various modules in which students wrote examination papers are very low. Also, no practically significant correlations were detected between contact session and vacation school attendance and the academic success (final marks) of students. In the light of these findings, as well as the high monetary

commitment that the presentation of contact sessions entails, SCTE management should consider presenting a lesser number of contact classes. This study recommends that the focus of contact sessions should shift to modules in which students experience the most problems, i.e. modules with the lowest academic success rate, rather than facilitating all modules at contact classes. The practical implication is that the total number of contact classes (twelve) could be changed to only nine contact classes, in which problematic modules are presented, with four additional contact classes in which the rest of the program modules are presented.

A further recommendation is that the duration of vacation schools, currently presented on one Saturday per vacation school, are extended with one or two days, for many students refrain from travelling large distances to attend vacation schools on Saturdays because of family and school related responsibilities. If vacation schools were longer, more students would possibly attend vacation schools for the opportunity to have longer contact with lecturers, and less would possibly attend the contact sessions presented by facilitators.

It seems that the academic success of students in this study should rather be ascribed to another variable, e.g. effective study material, than contact class attendance. The fact that the majority of academically successful students did not attend any contact classes, clearly points towards effective study material (i.e. study letters, study guides, DVDs and examination information) which supports ODL students in rural areas to achieve academic success.

The final conclusion and recommendation of this investigation is that besides contact classes, more attention should be given to the implementation of e-learning as another tool for ODL program delivery. If the majority of students develop basic computer comperacy, and all schools and study centers have computer and Internet facilities available to students, e-learning could easily become the main delivery tool for ODL students in South Africa. However, currently socio-economic factors such as poverty, low literacy, under-qualification and low comperacy still halt the full implementation of e-learning in the South African higher education sector (Blignaut & Els, 2010). Also, m-learning (mobile learning) is increasingly being used in the African context for teaching and learning — a tool already used by the SCTE for generic text communication (e.g. examination information) to students, as well as for the provision of certain study material via a newly implemented mobi-site.

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