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Comparative Analysis of Alternative ODL Delivery Modes using Input-Process-Output Model in ODL Institutions: Evidence From The Open University Of Tanzania

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ABSTARCT

The production of quality human resources in Africa is crucial in order to cope with continent's growth potential. ODL institutions are better placed to fill the human resource gap that Africa is likely facing. Many African ODL institutions have accelerated production of sufficient number of qualified graduates at various levels by increasing access to education, especially for those attending postgraduate programmes. Different delivery modes have been used to make learning more flexible and more accessible as much as possible without affecting quality of graduates (output). This paper undertakes a comparative analysis of the three dominant delivery modes for postgraduate programmes at the Open University of Tanzania: distance mode, evening classroom mode and executive classroom mode. The paper applies the Input-Process-Output (IPO) model of learning to assess the extent at which the delivery modes may differentially correlate with motivation to learn and hence desired quantity and quality human resource outputs that Africa lacks. Analysis of variance and regression analyses were done based on data extracted from Students Academic Register Information System from OUT for 94 graduates. The results indicate that there is significant difference in desired educational quality output amongst delivery modes. Higher performers were most associated with executive classroom oriented modes of delivery as compared to evening classroom and distance modes. This study supports the notion that classroom delivery modes facilitate motivation to learn more than distance mode. This paper recommends that for the distance mode of delivery to deliver quality outputs, it must be complemented with online learning facilities.

Key words: distance mode, evening classroom mode, executive classroom mode, comparative analysis, quality output

BACKGROUND AND OBJECTIVES

Open and Distance Learning (ODL) has been driven mostly by learners' needs and the diversification of media used in instruction. Many of the educational technologies adopted by both ODL and conventional institutions, such as e-mail, fax, video and audio-video conferencing, have risen in the past 30 years. The same period has also witnessed the phenomenon of mass participation of diverse groups in the educational process. The diversifying clientele has brought the educational planners to defining and formulating a variety of delivery modes and curricula to meet its needs. Mishra et al (2002) points out that ODL, while not insisting on the presence of a human teacher at all times, recognises the importance of including the teaching function in the learning experience. That teaching function may be embedded in self-study materials, which may be used in conjunction with teaching-learning experiences that require interpersonal interaction. Such interaction may take place in a face-to-face setting or through telecommunications technologies. Innovation and development of the blended learning mode has marked the realization of enhancing

education opportunity to many people from different backgrounds. The blended characteristic features allow for meeting requirements of heterogeneous groups of learners at affordable cost and timely. The four most popular delivery modes for taught postgraduate programmes at OUT are outlined in the subsequent sections.

Distance Mode

This is a learning mode where students are given detailed course outlines and a list of reading materials and they appear for general face to face sessions of about 4 days twice a year. The face to face sessions are mainly for research methodology course and for orienting students on how to undertake research for their dissertations and theses. The students appear for a main test in April and final exam in June for each course. Coursework for a master programmes at OUT involves between 6-9 courses (modules). The tuition fee for this delivery mode is about USD1500 for the entire programme for SADC members.

Blended Distance mode

This a modified version of the distance mode in that students use e-learning platform (MOODLE) which is internet based; where students have opportunity to virtually interact with other students taking same course and with lecturers of the respective course. Students must attend a 5 days Face to Face residential training on how to use the MOODLE platform. The e-learning platform enables students to engage in discussions guided by their instructors. This mode costs about USD 2500 for the entire programme.

Evening Mode

In addition to using e-learning platform (MOODLE), evening mode requires students to attend face to face lectures for three work days a week- 3 hours per day from 1700HRS-2000HRS until the course is covered. The lectures can also be offered over the weekends only from 0800HRS – 0500HRS on Saturdays and Sundays respectively. Breakfast and Lunch are served. The tuition fee for this mode of delivery is about Tsh. USD 2000 for evening (weekdays) or about USD 3000 for evening (weekend)

Executive Mode

Executive Mode requires students to attend face to face sessions for about three weeks consecutively for about 3 times for the entire coursework. Lecturers cover difficult areas and students do intensively interact amongst themselves and exchange experiences. There is a break of about 2 months in between the sessions during which students continue to use the e-learning platform. Students are served with breakfast and lunch since lectures start from 0800HRS to 1500HRS. This costs about USD 3500 for the entire programme.

The three modes of delivery covered in this study are conventional to most ODL institutions are distance, evening and executive. The modes have not blended the learning to utilise more of the new developments in ICTs. One of the delivery modes that is currently picking up at OUT is the Hybrid/blended mode involving shorter executive classroom lectures and longer internet based learning through online interactivity between lecturers and students. Students who are pursuing their studies through blended mode are expected to graduate from 2014 graduation hence not involved in the current study. The varying delivery modes strategy has strength because it builds upon the good things the OUT is known for: enabling one to study while working. The delivery modes have been in place in the last 10 years. It is high time that they modes are evaluated to make informed decisions on their effectiveness in giving desired outputs by both students and the University. It is expected that the findings of this study will inform applicants when choosing a learning mode and when the university is designing curriculum contents for new and reviewing curriculum of ongoing curriculum contents. The

main objective of this paper is to make comparison analysis of the three popular delivery modes: distance, executive and evening by applying the Input-Process-Output (IPO) model. The paper has three specific objectives: to examine relationship between learning mode and output quality, to identify important determinants of student's choice of learning mode and to examine the influence of learning mode on output quality

HEORETICAL FRAMEWORK

Learner-centred theories

Two theories seem to provide theoretical justification for understanding effectiveness of learner centred (delivery) modes adopted by ODL institutions. The first theory is the "learner-centered theory" adopted from 'Person–Centered Learning' developed by the American psychologist Carl Rogers (1951) as a method in counseling psychology. The second theory is the "adult-learner theory" developed by Malcolm Knowles's (1984). The learner-centered theory acknowledges the fact that learning should encompass the whole person by ensuring that learner is the central focus in learning process. The implication is that planning of the course, curriculum development, mode of delivery etc has to consider learners views. Person-centered education, also known as the learner-centered model of instruction, focuses on developing real-life skills, such as collaboration, higher-order thinking, and problem-solving skills, and better meets the complex needs of the information age (An-Yun-Jo, and Reigeluth. 2011-2012). Person-centered education is characterized by personalized and customized learning, social and emotional support, self-regulation, collaborative and authentic learning experiences, and assessment for learning. As noted by (Motschnig-Pitrik and Santos, 2006), to ignore the whole person while educating is to lose a golden opportunity to fulfill the true meaning of education, which is to enrich people's lives.

Knowles developed a field of adult learning termed *andragogy* and he studied adult learners for 35 years according to adult (Kisamore et al.,2008). Texts and teachers play a new and secondary role in adult education: they must give way to the primary importance of the learners (Lindeman, 1926). Knowles's andragogical model is based on several assumptions: (a) the need to know, (b) the learner's self-concept, (c) role of the learner's experiences, (d) readiness to learn, (e) orientation to learning, and (f) motivation. Adult learners are surrounded by various challenges which make their engagement in learning unique. They have many responsibilities to accomplish at the same time such as work, recreation, family life and community life. Adult learners find ways to intervene these situations when needed.

Several definitions have been used to describe adult learners. Malcolm Knowles's definition of the adult learner is that one has arrived at a self-concept of being responsible for one's own life, of being self-directed (Kisamore et al., 2008). Some simply look at the age of the learner and define adult learners as anyone over the age of 20, and some feel that the setting defines the adult learner. In other words, if learners are in community college, university, or work setting, they are adult learners. As the population ages and life expectancy lengthens, educators can expect more adult learners (Kisamore et al., 2008). A generation is shaped by highly significant events during the coming-of-age experiences between youth and adulthood (Strauss, 2005). These events define a generation and determine the traits and attitudes that distinguish one generation from another. Because of their shared experiences, generations often share values and behaviors as well as bring common approaches and ideas to the workplace and classroom (Lancaster & Stillman, 2002). Andragogy ties in with generational differences as increasingly generations collide in the classrooms of academia (Howe & Strauss, 2000). The present study has adopted andragogy ties because distinct and different generations are blending in the postgraduate programmes under study.

Approaches to Evaluation of Training

Based on prior works by Bramley (1991) and that of Worthen & Sanders (1987) Eseryel (undated) summarizes six general approaches to educational evaluation as follows:

- Goal-based evaluation
- Goal-free evaluation
- Responsive evaluation
- Systems evaluation
- Professional review
- Quasi-legal

According to Eseryel the goal-based and systems-based approaches are predominantly used in the evaluation of training (Philips, 1991). It was further pointed out that various frameworks for evaluation of training programs have been proposed under the influence of these two approaches. Table 1 presents a comparison of several system-based models (CIPP, IPO, & TVS) with a goal-based model (Kirkpatrick's). Goal-based models (such as Kirkpatrick's four levels) may help practitioners think about the purposes of evaluation ranging from purely technical to covertly political purpose. However, Eseryel (ibid) argues that these models do not define the steps necessary to achieve purposes and do not address the ways to utilize results to improve training. The difficulty for practitioners following such models is in selecting and implementing appropriate evaluation methods (quantitative, qualitative, or mixed). Because of their apparent simplicity, "trainers jump feet first into using [such] model[s] without taking the time to assess their needs and resources or to determine how they'll apply the model and the results" (Bernthal, 1995, p. 41 cited in Eseryel, undated,). Naturally, many organizations do not use the entire model, and training ends up being evaluated only at the reaction, or at best, at the learning level. As the level of evaluation goes up, the complexities involved increase. This may explain why only levels 1 and 2 are used. The current study will use the IPO Model for evaluating the delivery modes up to level 3 of evaluation because of data availability.

Table 1 Goal-based and systems-based approaches to evaluation

Kirkpatrick (1959)	CIPP Model (1987)	IPO Model (1990)	TVS Model (1994)
1. Reaction: to gather data on participants reactions at the end of a training program	1. Context: obtaining information about the situation to decide on educational needs and to establish program objectives	1. Input: evaluation of system performance indicators such as trainee qualifications, availability of materials, appropriateness of training, etc.	1. Situation: collecting pre-training data to ascertain current levels of performance within the organization and defining a desirable level of future performance
2. Learning: to assess whether the learning objectives for the program are met	2. Input: identifying educational strategies most likely to achieve the desired result	2. Process: embraces planning, design, development, and delivery of training programs	2. Intervention: identifying the reason for the existence of the gap between the present and desirable performance to find out if training is the solution to the problem
3. Behavior: to assess whether job performance changes as a result of training	3. Process: assessing the implementation of the educational program	3. Output: Gathering data resulting from the training interventions	3. Impact: evaluating the difference between the pre- and post-training data

4. Results: to assess costs vs. benefits of training programs, i.e., organizational impact in terms of reduced costs, improved/increased quantity of work, etc.	4. Product: gathering information regarding the results of the educational intervention to interpret its worth and merit	4. Outcomes: longer-term results associated with improvement in the corporation's bottom line- its profitability, competitiveness, etc.	4. Value: measuring differences in quality, productivity, service, or sales, all of which can be expressed in terms of dollars

Source: *Eseryel (Undated) Approaches to Evaluation of Training: Theory & Practice. Syracuse University, IDD&E, 330 Huntington Hall Syracuse, New York 13244 USA*

A detailed conceptual framework of this study is grounded on IPO model as outlined in the subsequent section.

Input-Process-Output Model

IPO model is one of the most popular paradigms in assessing team effectiveness in organizations effectiveness. In education, have been used by different authors for quality classification in higher education (Chua, 2004) and in evaluating motivation to learn and course outcome (Klein etal, 2006). IPO models might differ in several aspects but have in common that specific "input factors", for example, learner characteristics, lead to an "output" in form of academic performance on the other side. The influence of the input factor on the output factor is mediated via "processes". This implies that resources of a group are transformed into a product via several processes. Important input factors are for example team leadership and group structure. In the recent literature, I-P-O models are extended to I-P-O-I (Input-Process-Output-Input) models, whereby researchers argue that input is influenced by output in reverse as well (e.g. Ilgen, Hollenbeck, Johnson, & Jundt, 2005). In the current study we also include a lagged output variables to become "inputs" influencing processes.

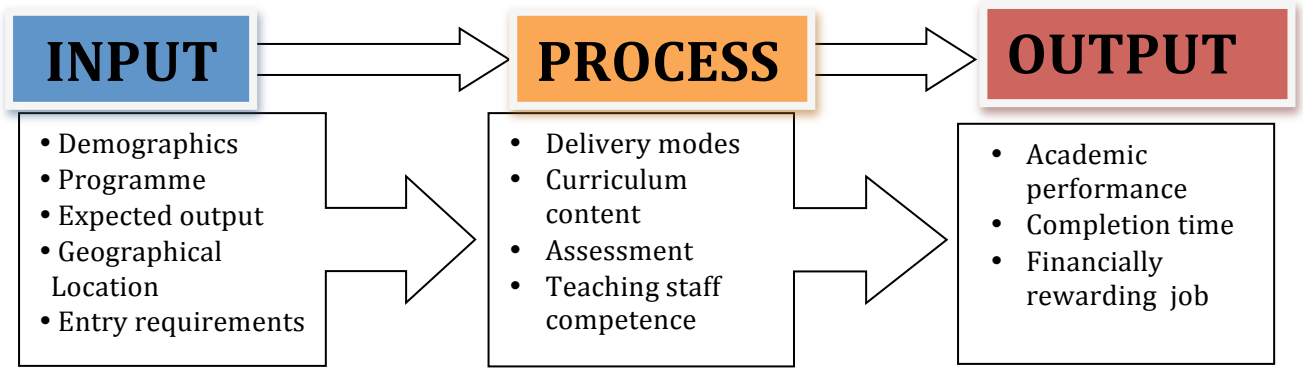

Figure1: Input-Process-Output Model for comparison assessment among delivery modes

In the current study "input" refers to the entry requirements. In Figure 1 thus input factors are extended to include all factors that can be manipulated in order to change processes and outcomes (Cohen & Bailey, 2007) like students demographic characteristics (age, geographical location), study programme and perceived programme quality reflected in completion time and performance in terms of great point average (GPA). "Process" refers to the teaching and learning process, curriculum content, number of courses (modules) and competence of instructors. In the current study delivery (teaching and learning) modes was proxy measure for "process factors". Three modes of delivery were considered: executive mode, evening mode and distance mode. It is hypothesized that these delivery modes induce learners' motivation to learn differently hence difference in their output (performance). "Output" refers to the employability and academic performance in terms of GPAs, completion time and score on research competence (as shown in Figure 1). This classification of quality attributes is in

accordance with the organization's operation system of converting the inputs (e.g. raw materials) into outputs (e.g. products and services) via the process (e.g. procedures). In this way, one can associate the quality improvements with the operating system of any organization, including those from the education sector (Chua, 2004). In addition, some of the quality dimensions identified in Owlia and Aspinwall's (1996) study are partially covered in the IPO model outlined in Figure 1.

The IPO model in Figure 1 suggests that the delivery mode–learning outcome relationship is mediated by active learning states including motivation to learn. The IPO model suggests that delivery modes (such as instruction and distance learning) may differentially impact motivation to learn and subsequent learning outcomes such as GPAs and completion time.. Specifically, the model presented in Figure 1 shows that course outcomes are a direct result of motivation to learn. Motivation to learn is influenced by learner characteristics, curriculum content and home region). Specific hypotheses for each of the relationships shown in Figure 1 are therefore presented as

- **Hypothesis1:** There is no difference in academic performance across all the delivery modes under study
- **Hypothesis2:** Preference for classroom face to face learning mode is more influenced by age of the learner than the expected GPAs or completion time
- **Hypothesis 3**: Academic performance more than any other factors, is significantly influenced the type of learning mode.

RESEARCH METHODS

Sampling design and data

This research paper is based on the desk review of data extracted from 94 postgraduate students who graduated in various taught programmes in 2012 and 2013 graduation ceremonies. Lists of graduands in the two graduations' booklets were used as sampling frames in which about 510 graduands were involved in the desk review. The graduates' particulars were extracted from Students Academic Register Information System (SARIS). The choice of sampling units in the sampling frame was done through systematic random sampling where every 5th candidate was picked for further search in candidate's SARIS page. Data were collected on the variables outlined in table 2.

Table 2 Variables used in the study and their operationalisation

Variable	Description	Measure	Type
Input			
Sex	Ex of the graduate	1=Male 2=Female	Nominal categorical
Age	Graduates age	Years	scale
Programme	Candidate's Programme	1=MBA, 2=MHRM 3=MCED etc	Nominal categorical
Region	Candidate's home region	1=Dar 0=Others	Nominal Categorical
Process			
Delivery mode	Delivery/learning mode	1=Executive 2=Evening 3=Distance	Nominal categorical
Courses	Number of courses taken	Number	Scale
Output			
GPA	Great point average	Mean score	scale
Completion	Years taken to graduate	Years	Scale
Research quality	Score on dissertation	Numerical grade	scale

Data analysis

Three types of quantitative data analysis methods were used to test the stated hypotheses:

- Independent samples t-tests and Analysis of Variance (ANOVA) was used for hypothesis 1 where the test variable considered was GPA
- Binary Logistic regression analysis was used to test for hypothesis 2, and
- Linear regression analysis was used for hypothesis 3

RESEARCH RESULTS

Description of the sample

The study sample involved SARIS records for 94 graduates from six popular postgraduate programmes as seen in Fig 2c. Two programmes (MBA and MCED) accounted for 78.7% of the sample because these programmes are the most popular at the Open University of Tanzania. The two programmes account for almost same proportion of graduates every year. Whereas MBA is offered through all the three modes of delivery under study, MCED is offered only through executive mode. Figure 2a indicates that executive mode had the largest proportion (47.9%) with the other two modes (evening and distance) with relatively more equal representation. Most graduates were coming from Dar es Salaam (67%) as shown in Fig2b. This is more is not a surprise since Dar es Salaam is an educational hub for Tanzania. The sample comprised of 70% male and 30% female graduates. This is so due to more or less same distribution in enrolment and graduation across the university. The sample was randomly selected as elaborated in previous section hence this normal gender distribution of the OUT graduates.

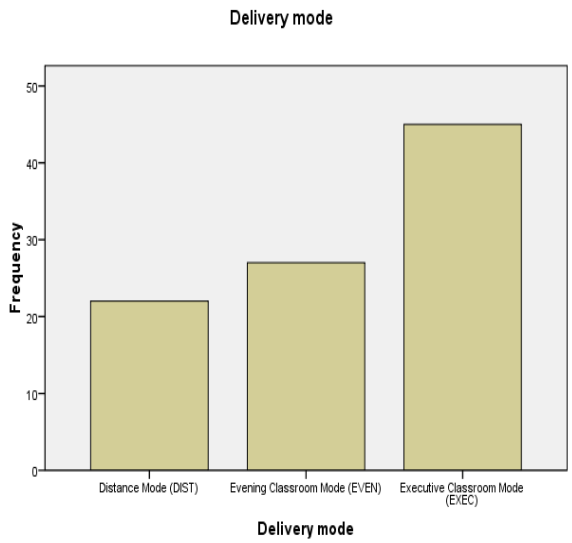

Fig 2a: Delivery mode chosen by learner

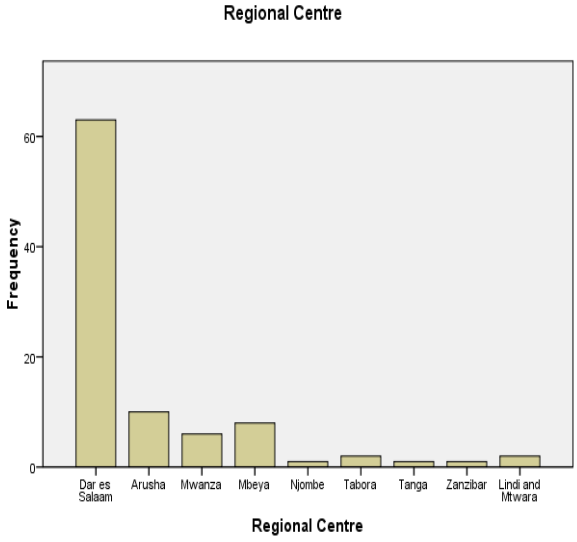

Fig 2b: Graduate's' Regional centre

Table 3: Graduates distribution by gender

Graduate's sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	70	74.5	74.5	74.5
	Female	24	25.5	25.5	100.0
	Total	94	100.0	100.0	

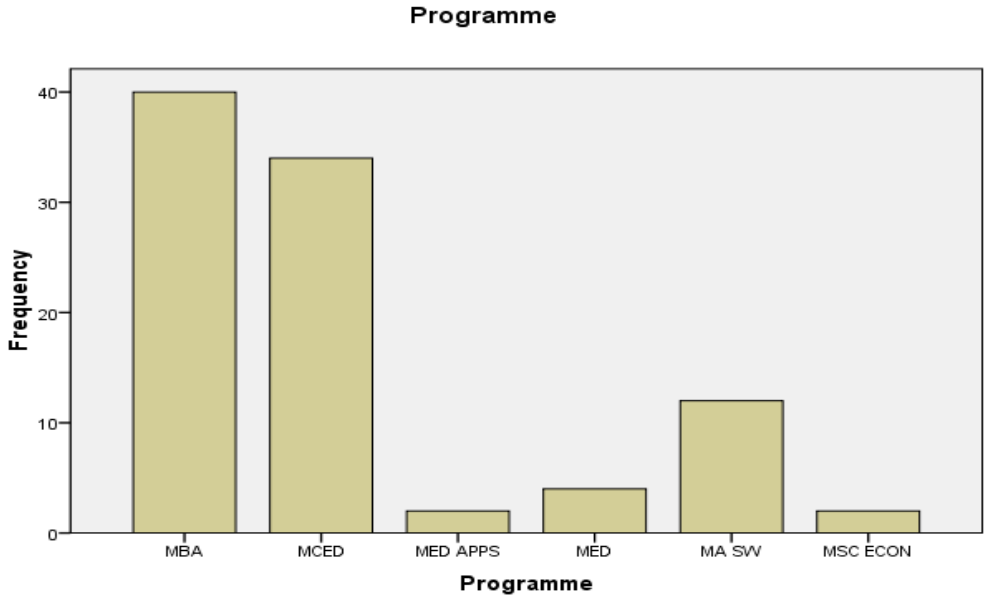

Figure 2c: Distribution of graduates by programme

Relationship between learning mode and output quality (academic performance)

Table 4a presents descriptive statistics for some quantitative variables n the sample. GPA for executive classroom mode had mean GPA above overall mean GPA with evening mode having lowest minimum GPA. The maximum GPA was 4.8 for evening and executive modes. The overall mean completion time is 2.72 years with that for executive mode being the lowest below overall mean. The executive mode seems also to have the lowest maximum duration for completion of 3 years followed by 7 years for distance mode and the longest being for evening (9 years). A score on quality on research is the lowest in distance mode and highest evening mode whose score (3.63) is above overall mean score. However none of the delivery mode had a score of 4 or above (equivalent to A grade).

Table 4a Descriptive statistics for performance variables used in ANOVA

		N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
GPA	Distance Mode (DIST)	22	3.868	.4122	.0879	3.3	4.7
	Evening Classroom Mode (EVEN)	27	3.830	.4436	.0854	3.1	4.8
	Executive Classroom Mode (EXEC)	45	3.967	.2892	.0431	3.2	4.6
	Total	94	3.904	.3698	.0381	3.1	4.8
Completion duration (years)	Distance Mode (DIST)	22	3.43	1.664	.355	1	7
	Evening Classroom Mode (EVEN)	27	3.30	2.216	.426	1	9
	Executive Classroom Mode (EXEC)	45	2.02	.499	.074	1	3
	Total	94	2.72	1.602	.165	1	9
Score on research methods and dissertation (numerical grade)	Distance Mode (DIST)	22	3.14	.990	.211	1	5
	Evening Classroom Mode (EVEN)	27	3.63	.926	.178	2	5
	Executive Classroom Mode (EXEC)	45	3.27	1.095	.163	1	5
	Total	94	3.34	1.032	.106	1	5

ANOVA results in table 4b show no statistical significant difference amongst delivery modes (Sig >0.05) in terms of GPAs and score on research methods and dissertation. The difference is

however more pronounced in terms of completion duration. The observations made in table 4a in relation to completion duration are statistically confirmed (at 5% significance level) where executive mode showed to have the lowest completion duration followed by distance and longest completion duration for evening mode.

Table 4b Delivery modes ANOVA

Performance variable				Sum of Squares	df	Mean Square	F	Sig.
GPA	Between Groups	(Combined)		.354	2	.177	1.304	.277
		Linear Term	Unweighted	.143	1	.143	1.055	.307
			Weighted	.211	1	.211	1.556	.215
			Deviation	.143	1	.143	1.051	.308
	Within Groups			12.364	91	.136		
	Total			12.718	93			
Completion duration (years)	Between Groups	(Combined)		42.024	2	21.012	9.718	.000
		Linear Term	Unweighted	29.360	1	29.360	13.579	.000
			Weighted	36.018	1	36.018	16.658	.000
			Deviation	6.006	1	6.006	2.778	.099
	Within Groups			196.755	91	2.162		
	Total			238.779	93			
Score on research methods and dissertation (numerical grade)	Between Groups	(Combined)		3.419	2	1.710	1.626	.202
		Linear Term	Unweighted	.251	1	.251	.239	.626
			Weighted	.022	1	.022	.021	.885
			Deviation	3.397	1	3.397	3.230	.076
	Within Groups			95.687	91	1.052		
	Total			99.106	93			

Determinants of student's choice of learning mode

Table 5a shows that the likelihood of choosing executive mode decreases with increasing age, being a female or coming from Dar es Salaam. Increase in number of courses (modules) for a given programme increases likelihood of one choosing executive classroom mode of learning. This implies that age, being female and coming from Dar is more associated to increasing likelihood of the probability to prefer distance mode compared to other modes (table 5b).

Table 5a Binary Logistic Regression analysis: Executive Mode=1

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1[a]	AGE	-.038	.034	1.282	1	.257	.963
	Sex1	-.552	.581	.903	1	.342	.576
	RC1	-.076	.638	.014	1	.905	.927
	Course	.157	.101	2.439	1	.118	1.170
	Constant	1.485	2.109	.496	1	.481	4.414

a. Variable(s) entered on step 1: AGE, Sex1, RC1, Course.

Table 5b further shows that although the two input factors: number of courses and coming from Dar are though not statistically significant, they negatively influencing likelihood of choosing distance mode at 5% significance level.

Table 5b Binary Logistic Regression analysis: Distance Mode=1

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1[a]	AGE	.038	.034	1.282	1	.257	1.039
	Sex1	.552	.581	.903	1	.342	1.737
	RC1	.076	.638	.014	1	.905	1.079
	Course	-.157	.101	2.439	1	.118	.854
	Constant	-1.485	2.109	.496	1	.481	.227

a. Variable(s) entered on step 1: AGE, Sex1, RC1, Course.

Table 5c illustrates that the likelihood to increase probability of choosing evening mode is positively influenced by number of courses in a programme. Increase in number of courses in a programme increases likelihood that student will opt for evening mode. This influence is statistically significant at 0% level of significance. On the other hand the increase in age and being a woman have a negative influence on the likelihood that candidates would choose evening mode. However this influence is very insignificant (P>20%)

Table 5c Binary Logistic Regression analysis: Evening Mode=1

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	AGE	-.004	.039	.013	1	.911	.996
	Sex1	-.440	.693	.404	1	.525	.644
	RC1	.795	.666	1.423	1	.233	2.214
	Course	.455	.099	21.348	1	.000	1.577
	Constant	-6.420	2.246	8.169	1	.004	.002

a. Variable(s) entered on step 1: AGE, Sex1, RC1, Course.

Results in tables 5(a-c) suggest that none of the input variables had statistically significant impact on candidate's choice of either distance or executive modes.

The impact of delivery mode on educational output quality

The third objective in this research was to explore the impact of delivery mode on educational quality output. Table 6 summarises linear regression results for three output measures: GPA, completion duration and score on research and dissertation. To avoid dummy variable trap, for each model analysis, only one of the dummies for delivery modes was used at a time. Table 6 shows that executive delivery mode has a negative influence on GPA and completion duration but with a positive influence on score on research and dissertation. However, the executive mode's influence is only significant for completion duration. This implies that executive mode is more linked to completing studies more timely (shorter time) but not necessarily on the other quality attributes. This finding, though not significant, suggests that executive mode is associated with low GPAs but with higher scores on research and dissertation.

Like the executive mode, the distance delivery mode has a negative influence on GPA and the influence is statistically significant at 10% level of significance (P<0.10). Although insignificant, the distance mode is positively associated with increase in completion duration and research score. These findings suggest that for students who study through distance mode are likely to have lower GPAs than if they had to opt for other delivery modes. In addition, unlike other delivery modes, distance mode is the only mode with positive influence on completion duration implying that those studying through distance mode spend relatively longer to complete their studies.

The evening mode of delivery has positive influence on GPA and negative influence on both completion duration and score on research. However the influence of the distance delivery mode is only statistically significant on completion rate even higher than that of executive mode. This implies that students opting for distance mode of learning tend to spend shorter duration possible to complete their studies. This finding is contrary to the widely conceived perception that distance mode is associated with longer completion period especially for undergraduate studies.

Table 6 Influence of learning mode on output quality

Explanatory variables	Significance of standardized coefficients (beta)		
	Model 1: GPA model	**Model 2: Completion Duration Model**	**Model 3: Score on Research Model**
(Constant)	4.273	-.896	2.178
Mode of delivery Executive=1	**-.062**	**-.270****	**.018**
Mode of delivery Distance=1	**-.197***	**.132**	**.103**
Mode of delivery Evening=1	**.103**	**-.336****	**-.068**
Number of courses	-.130	.265**	.334**
Completion duration (years)	-.127	NA	-.212**
Score on research methods and dissertation (numerical garde)	.450***	-.210**	NA
Graduate's age (years)	-.287*	.343**	.260**
Sex Female=1	.026	-.009	-.221**
RC Dar=1	.096	-.068	-.096

***=significant at 0% **=significant at 5% *=significant at 10%

CONCLUSION

The IPO model seems to be more useful in terms of thinking about the overall context and situation but it may not represent the dynamic interactions between the design and the evaluation of training. In addition, care should be taken in identifying the factors for input, processes and output. These factors need to be embedded in the curricula of the programme in terms course content and assessment. It is found in this paper that input factors are very crucial in determining educational quality rough processes (delivery modes). Each of the delivery modes is important in its own ways depending on nature of input factors (eg applicants profiles) and expected of the programmes output. Following the profile of students enrolling in ODL and their motive for undertaking studies it is likely that a variety of delivery modes would fit in and include any applicant thereby giving wider educational opportunities. The educational quality output factors need to be more inclusive of non conventional quality attributes. The current study has considered only three measures of educational quality outputs (GPA, completion duration and score in research and dissertation) and found out that most delivery modes are more associated with completion duration than the other two quality outputs. This implies that when designing the processes (delivery modes), timely completion of studies should be taken due consideration. Overall assessment from this study implies that the classroom based delivery modes (executive and evening) are more associated with timely (shorter) completion duration whereas distance mode is more associated with higher GPAs.

This study's findings conform to previous evaluation study of hybrid learning mode at OUT. In their current study on staff and students' perceptions on effectiveness of blended mode of learning at OUT, Ngaruko and Makuu (2013) observed that though the blended learning mode could be the best to fit students' time both at work and at home, still face to face sessions are important. This implies that conventional physical integrations between instructors and students need to complement the online modes of learning. To create this type of student engagement in the online world, students should have the five interactive experiences; student-to-student, student-to-teacher, student-to-community, student-to- material, and student-to-technology. If an online program/class is able to build this type of learning environment, the students will have one of the most exciting and memorable encounters of their educational experience hence desired output (academic performance). The findings from this study suggest that the most appropriate mode of delivery that ensures effective and inexpensive way to enhance learning should have a combination of face-to face class time and self-study with online components.

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