

## **Improving Employability through Open, Online and Flexible Learning Environments: A Case Study of Distance Learning Institute, University of Lagos, Nigeria**

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### **Abstract**

Contemporary society has developed to a level that the education offered in institutions of higher learning in most countries is incompatible with the skills requirement of industries. The reason is that institutions utilize teaching approaches that have been in use for millennia with new dynamics. Although many of the methods of content delivery in use today were effective in time past, their relevance in the modern era appears to lack credibility. Products of the institutions lack relevance to the contemporary market demands, thus hampering their employability. The huge investments that go into the provision of higher education make the reconsideration of teaching methods pertinent. A potential alternative in this context is Open and Distance Learning (ODL). This education mode involves delivery of content to the learner, using modern technologies like the internet. The approach is effective in providing the needed knowledge base, skills, attitudes in the subject area, and also develops in the learner, the much-needed skills, commonly referred to as 21st Century skills, which have become the focal point for greater employability in the modern market. This paper therefore centers on approaches to improve the employability of learners in open, online and flexible learning environments for 21st century work skills in Nigeria. A survey technique was carried out using questionnaire administered to students using purposive sampling technique. Descriptive statistics, logistics regression and Chi-squared test were used for the analysis. The result shows that critical thinking skills, communication skills, using technology as a tool of learning, decision making skills, and problem solving skills have significant influence on the employability level of ODL graduates. The study has demonstrated that ODL if deployed effectively will provide the skills needed in the work place.

**Keywords:** Twenty-first, Century skills, Employability, LMS, Logistic Regression, life-long learning

### **Introduction**

The education system today is dynamic and knowledge itself grows beyond known areas of specialization. The use of information and communication technology has changed the mode of delivery and learning. Contemporary society has developed to a level that the education offered in institutions of higher learning in most countries is incompatible with the skills requirement of industries. The reason is that institutions utilize teaching approaches that have been in use for millennia with new dynamics. Although many of the methods of content delivery in use today were effective in time past, their relevance in the modern era appears to lack credibility. Products of the institutions lack relevance to the contemporary market demands, thus hampering their employability. The huge investment that goes into the provision of higher education makes the reconsideration of teaching methods pertinent. A potential alternative in this context is ODL. This mode of education is a student-centered approach that involves the delivery of content to the learner, using modern technologies like the internet. The ODL mode enables students to share information and actively participate in today's enterprises. This approach to learning is effective in providing the needed knowledge base, attitudes, and 21st Century skills, which have become important for greater employability in the modern market.

The ODL system integrates teaching and learning, giving opportunities for skills and opportunities in the labour market. It also enables flexibility, critical thinking, effective communication, social skills, creative problem-solving and perseverance. These skills will ensure that ODL graduates compete favourably and are successful in work and life. Students' success in school and employability lies in their ability to adapt to new experiences, communicate effectively, share information to solve complex problems and employ innovative approaches in response to new demands and challenges. Improvement of employability through ODL would require a synergy with the industry aimed at solving the problems of industries through investigative research and community service.

Distance learning Institute (DLI), University of Lagos, Nigeria, has developed their curriculum in tandem with the current development of the 21<sup>st</sup> Century skills through the use of ICT to develop students' skills in compliance with the demands of industries. Open and distance education is a native in the use of ICT as well as in knowledge and skills delivery in higher education. The 21<sup>st</sup> century skills considered in this paper are: critical thinking skills, communication skills, creativity and innovative skills, self-direction skills, global connections, local connections,

use of technology as a tool of learning, higher education skills, decision making skill, numeracy skills, problem solving skills, and team work.

### **1.1 Statement of the problem**

Many University graduates are considered unemployable because they lack necessary skills needed by most employers of labour. The gap between what is learnt in the school and what is required to actually fit in to the world of work is what can determine employability. (Abraham and Kems,2009). ODL institution have attracted global condemnation based on poor outcome in certain skills which makes their product not work -ready graduates (Ladyshevsky, 2006; Abraham and Kems,2009)

This study therefore investigates employability skills acquired by the ODL students during their course of study through open, online and flexible leaning environment

### **1.2 Aim and Objectives**

The aim of the study is to investigate the impact of 21<sup>st</sup> century skills development through open, online and flexible learning environments to improve employability among distance learning students in University of Lagos. The specific objectives are to:

1. Determine the extent of 21<sup>st</sup> century skills and its effects on improving employability of ODL graduates.
2. Investigate if there is gender preference on 21<sup>st</sup> century skills and improving employability of ODL graduates.
3. Determine if there is no significant difference between male and female students skills acquisition of 21<sup>st</sup> century skills in improving employability of ODL graduates.

### **1.3 Research Questions**

The questions were raised to guide the study

1. What effects does 21<sup>st</sup> century skills have on improving employability of ODL graduates?
2. Will there is gender preference on the 21<sup>st</sup> century skill and improving employability of ODL graduate?
3. What is the difference between male and female student skill acquisition of 21<sup>st</sup> century skill in improving employability of ODL?

### **1.4 Hypothesis Testing**

H<sub>01</sub>. There is no significant difference between age preference of the students and the 21<sup>st</sup> century skills acquired on improving employability of ODL graduates.

H<sub>02</sub>: There is no significant difference between the ages of ODL graduates and 21<sup>st</sup> century skills on improving their employability.

H<sub>03</sub>: There is no significant positive contribution between socio-demographic and employability factors influencing employability level among the ODL graduates.

## **2.0 Literature Review**

Employability skills are skills that students should acquire and develop in order to increase their chances of gaining employment or being awarded a degree and successfully performing their roles in the work place once they have found employment. The skills acquired and developed by students in the course of higher education fall within one of two categories. Firstly, the discipline-specific skills needed in the various disciplines such as law, medicine and accountancy and secondly, the employability skills, which are not limited to a particular job, but are relevant to a variety of jobs and relevant to all levels of employment from the senior to junior levels (Cassidy, 2006).

There is broad consensus of the value in developing certain skills in ODL as a means of enhancing their employability profile. These employability skills are sometimes referred to as professional, core, generic, key, and non-technical skills and are important to enhancing graduate work-readiness. Moreover, employability skills enable graduates to progress in their careers both personally and also within the organizations they work (Wilton, 2011). Highly employable workers enable organizations to meet fluctuating demands for new products and services (Nauta, Van Vianen, et al., 2009) According to Wilton (2011), the supply of ODL graduates to the labour market has grown significantly. However, employability has increasingly become a concern of students, employers and governments. Arrowsmith et al, 2011. Employability is the prime factor that influences the very thoughts of a graduating student (Gokuladas, 2011). On the other hand, employability is an important requirement, both for organizations that need to compete in a changing environment and for individuals who aim for career success (Van der Heijde & Van der Heijden, 2006). For these reasons, majority of higher learning institutions provide training with open flexible and Distance education to equip students with necessary employability skills.

Employability skills are skills needed for life-long learning and a successful business career (Stoner & Milner,2010). Employability skills are teachable skills and may be taught in both schools and employment settings. Therefore, the authority should set goals and objectives for teaching employability skills (Nayan, 2010). According to Nayan (2010), employability skills are categorized by the following competency areas: personal values, problem-solving and decision-making skills, relations with other people, communication skills, task-related skills, maturity, health and safety habits, and commitment to job.

Understanding peculiar ODL student’s perceptions and achieving student ‘buy-in’ to employability skill development is important for a number of reasons. First, theory strongly suggests that effective learning requires a clear understanding of the value of presented material and associated activities; enhanced by constructive alignment with explicit learning outcomes (Biggs, 2003). Expanding further, students placing a high value on what they are learning may also impact on their ability to transfer acquired skills across different contexts, such as from the university classroom to the workplace (Bransford & Schwartz, 1999). Furthermore, undergraduate appreciation of the importance of employability skills may prompt better use of portfolios to showcase developed skills in future job applications, thus enhancing their employment prospects. Explicit understanding of the importance of employability skills, and their transparent inclusion in curricula, will enhance student ability to articulate to employers their own capabilities (Heyler, 2011).

The dynamism that has been brought to education by the advent of technology is tremendous particularly the ODL institutions in developing countries. This is due to the development of Information and Communication Technology (ICT) i.e. internet-based technology (Ali, 2011). The University of Lagos has developed her open and distance education over the years to cater for the needs of the society and to developed robust skills needed by the Industry. The institute has provided support services to her undergraduate students with use of the Learning Management System (LMS) called Moodle. The LMS is designed to organize and regulate different activities in the learning process that includes content delivery, feedback to the learners, encouraging collaboration between the facilitator and the learners as well as provide support services such as instructional support and learner support services. It also provides support beyond the class room setting by allowing leaners to send and receive e-mail, participate in group discussions, chat and post comments to learners-teacher questions and answer sessions, transfer marks and post administrative information and course contents (Govender e-tal, 2014).

**3.0 Research Method**

The 2016/2017 and 2017/2018 academic session graduates of the University of Lagos DLI were used in this study. A questionnaire was designed to establish employability skills acquired during the course. The questionnaire contained the biographic data of the students such as gender, age, and marital status. The instrument measured employability skills acquired by the ODL students during their course of study. The skills assessed were: critical thinking, collaboration; communication skills; creativity and innovation skills; self directional skills: global connection skills; local connection skills and advanced IT or software skills. To ensure validity of the instrument, a pilot study was conducted. The pilot study helped in the refinement of the instrument to ensure that it measured what it is supposed to measure. The pilot study also helped to ensure that the respondents easily understood questions. Two hundred and fifty questionnaires were sent out only 199 were returned. The data was analyzed using descriptive statistics. Logistics regression and Chi- squared were used to test the hypothesis.

**4.0 Data Analysis and Results**

The analysis of the questionnaire was carried out for the data collection. The cronbach analysis was used to test the reliability of the instrument. The result showed consistency in the rating. Also, analysis of variance (ANOVA) was used to test if there is significance variation on how the respondents rated the items in the instruments. The results suggest that there is no variation on the rating of the items by respondents at F-values = 4.331

**1. Analysis of Research Objectives**

- 1. Determine the extent of 21st century skills its effect on improving employability of ODL graduates.

**Table 2: Extent of ODL Graduates Employability Skills**

Employability Skill Factors	Mean Response Rating					
	Mean	SD	Category	Remark	RM	Decision
Global Connections	4.19	0.779	4	Agreed	1.12	High
Higher Education Skills	4.12	0.888	4	Agreed	1.10	High
Local Connections	4.07	0.880	4	Agreed	1.08	High
Using Technology as a Tool of Learning	4.04	0.889	4	Agreed	1.08	High
Team Work	4.03	0.860	4	Agreed	1.07	High
Self-Direction Skills	3.76	0.535	4	Agreed	1.00	High

Decision Making Skills	3.75	0.829	4	Agreed	1.00	High
Creativity and Innovation Skills	3.58	0.815	4	Agreed	0.95	Low
Numeracy Skills	3.56	1.047	4	Agreed	0.95	Low
Problem Solving Skills	3.37	1.164	3	Undecided	0.90	Low
Communication Skills	3.25	1.099	3	Undecided	0.87	Low
Critical Thinking Skills	3.24	1.136	3	Undecided	0.86	Low
Employability Skills	3.75	0.543	4	Agreed	1.00	High

Source: Researcher's Field Survey 2019. Sample Size = 199. SD = Standard Deviation, RM = Relative Mean (RM > 1 = High, RM < 1 = Low). Category: 1 = Strongly Disagreed (SD), 2 = Disagreed (D), 3 = Undecided (U), 4 = Agreed (A), Strongly Agreed (SA).

The results revealed that ODL graduates have high employability skills since the mean response rating obtained is above 3.24 > 2.50 scale mean. Furthermore, there is a high extent of global connections, higher educational skills, local connections, using technology as a tool for learning, team work, self-direction skills, and decision making skills by ODL graduates. Moreover, the result revealed that the of creativity and innovation skills, numeracy skills, problem solving skills, communication skills, and critical thinking skills are low among ODL graduates.

2. Investigate if there is gender preference on 21<sup>st</sup> century skills and improving employability of ODL graduates.

**Table 3: Employability Skill Factors and Gender**

Employability Skill Factors	% within Gender	Gender		Total	Chi-Square	Df	P-value
		Male	Female				
Critical Thinking Skills	Low	60.8%	42.0%	54.3%	6.379 <sup>a</sup>	1	.012
	High	39.2%	58.0%	45.7%			
Communication Skills	Low	50.0%	37.7%	45.7%	2.756 <sup>a</sup>	1	.047
	High	50.0%	62.3%	54.3%			
Creativity and Innovation Skills	Low	50.8%	31.9%	44.2%	6.518 <sup>a</sup>	1	.011
	High	49.2%	68.1%	55.8%			
Self-Direction Skills	Low	27.7%	30.4%	28.6%	.166 <sup>a</sup>	1	.684
	High	72.3%	69.6%	71.4%			
Global Connections	Low	20.0%	30.4%	23.6%	2.721 <sup>a</sup>	1	.049
	High	80.0%	69.6%	76.4%			
Local Connections	Low	30.0%	29.0%	29.6%	.022 <sup>a</sup>	1	.881
	High	70.0%	71.0%	70.4%			
Using Technology as a Tool of Learning	Low	28.5%	34.8%	30.7%	.847 <sup>a</sup>	1	.357
	High	71.5%	65.2%	69.3%			
Higher Education Skills	Low	20.8%	26.1%	22.6%	.728	1	.393
	High	79.2%	73.9%	77.4%			
Decision Making Skills	Low	43.8%	34.8%	40.7%	1.534 <sup>a</sup>	1	.215
	High	56.2%	65.2%	59.3%			
Numeracy Skills	Low	51.5%	29.0%	43.7%	9.318 <sup>a</sup>	1	.002
	High	48.5%	71.0%	56.3%			
Problem Solving Skills	Low	50.0%	34.8%	44.7%	4.222 <sup>a</sup>	1	.040
	High	50.0%	65.2%	55.3%			
Team Work	Low	21.5%	27.5%	23.6%	.899 <sup>a</sup>	1	.343
	High	78.5%	72.5%	76.4%			
Employability Skills	Low	42.3%	31.9%	38.7%	2.065 <sup>a</sup>	1	.151
	High	57.7%	68.1%	61.3%			
Total		100.0%	100.0%	100.0%			

Source: Researcher's Computation 2019. a. 0 cells (0.0%) have expected count less than 5.

The Pearson Chi-Square test results revealed that there is significant gender preference among ODL graduates in critical thinking skills, communication skills, creativity and innovation skills, global connections, numeracy skills, and problem solving skills at Chi-Square value = 6.379, 2.756, 6.518, 2.721, 9.318, and 4.222, since  $p < 0.05$  respectively. Also, the results revealed that 60.8% males of ODL graduates had low critical thinking skills while 39.2% had high critical thinking skills. The female ODL graduates had better communication skills, higher Creativity and Innovation Skills, Numeracy Skills, and Problem Solving Skills than male ODL graduates at 62.3%,

68.1%, 71.0% and 65.2% than the males. The results implied that female ODL graduates had better employability skills than male ODL graduates.

3. Determine if there is no significant difference between male and female students' skills acquisition of 21<sup>st</sup> century skills on improving employability.

**Table 4: Group Statistics and Independent Samples T-Test**

Employability Skill Factors	Gender	N	Mean	SD	t	df	p-value	Mean Difference
Critical Thinking Skills	Male	130	3.0756	1.20545	-2.784	197	.006	-.46301
	Female	69	3.5386	.92538				
Communication Skills	Male	130	3.1138	1.17544	-2.358	197	.019	-.38181
	Female	69	3.4957	.89548				
Creativity and Innovation Skills	Male	130	3.4857	.78521	-2.283	197	.023	-.27412
	Female	69	3.7598	.84426				
Self-Direction Skills	Male	130	3.7423	.48140	-.535	197	.593	-.04272
	Female	69	3.7850	.62759				
Global Connections	Male	130	4.2808	.75740	2.342	197	.020	.26869
	Female	69	4.0121	.79383				
Local Connections	Male	130	4.1200	.88698	1.138	197	.257	.14899
	Female	69	3.9710	.86383				
Using Technology as a Tool of Learning	Male	130	4.1010	.88691	1.368	197	.173	.18067
	Female	69	3.9203	.88647				
Higher Education Skills	Male	130	4.1615	.87448	.848	197	.397	.11226
	Female	69	4.0493	.91549				
Decision Making Skills	Male	130	3.6949	.76822	-1.287	197	.200	-.15859
	Female	69	3.8535	.92972				
Numeracy Skills	Male	130	3.3758	1.06462	-3.559	197	.000	-.53929
	Female	69	3.9151	.92137				
Problem Solving Skills	Male	130	3.1538	1.18217	-3.641	197	.000	-.61266
	Female	69	3.7665	1.02282				
Team Work	Male	130	4.0284	.81729	.056	197	.955	.00722
	Female	69	4.0212	.94044				
Employability Skills	Male	130	3.6945	.49302	-1.819	197	.070	-.14620
	Female	69	3.8407	.61828				

Source: Researchers' Computation, 2019. SD = Standard Deviation

The results showed that there is significance difference in means between male and female ODL graduates in critical thinking skills, communication skills, creativity and innovation skills, global connections, numeracy skills, and problem solving skills at  $t = -2.784$  ( $p < 0.05$ ),  $-2.358$  ( $p < 0.05$ ),  $-2.283$  ( $p < 0.05$ ),  $2.342$  ( $p < 0.05$ ),  $-3.559$  ( $p < 0.05$ ), and  $-3.641$  ( $p < 0.05$ ) with degree of freedom (197) respectively.

### Research Questions and Hypothesis Testing

H<sub>01</sub>. There is no significant difference between age preference of the students and the 21<sup>st</sup> century skills acquired on improving employability of ODL graduates.

**Table 5: Employability Skill Factors and Age Distribution**

Employability Skill Factors	% within Factor	Age (years)		Total	Chi-Square	Df	P-value
		(18-34)	35 +				
Critical Thinking Skills	Low	27.8%	72.2%	100.0%	43.551 <sup>a</sup>	1	.000
	High	74.7%	25.3%	100.0%			
Communication Skills	Low	31.9%	68.1%	100.0%	20.260 <sup>a</sup>	1	.000
	High	63.9%	36.1%	100.0%			
Creativity and Innovation Skills	Low	26.1%	73.9%	100.0%	33.711 <sup>a</sup>	1	.000
	High	67.6%	32.4%	100.0%			
Self-Direction Skills	Low	56.1%	43.9%	100.0%	1.519 <sup>a</sup>	1	.218
	High	46.5%	53.5%	100.0%			
Global Connections	Low	48.9%	51.1%	100.0%	.002 <sup>a</sup>	1	.961

	High	49.3%	50.7%	100.0%			
Local Connections	Low	47.5%	52.5%	100.0%	.107 <sup>a</sup>	1	.743
	High	50.0%	50.0%	100.0%			
Using Technology as a Tool of Learning	Low	50.8%	49.2%	100.0%	.087 <sup>a</sup>	1	.768
	High	48.6%	51.4%	100.0%			
Higher Education Skills	Low	57.8%	42.2%	100.0%	1.693 <sup>a</sup>	1	.193
	High	46.8%	53.2%	100.0%			
Decision Making Skills	Low	33.3%	66.7%	100.0%	13.839 <sup>a</sup>	1	.000
	High	60.2%	39.8%	100.0%			
Numeracy Skills	Low	34.5%	65.5%	100.0%	13.480 <sup>a</sup>	1	.000
	High	60.7%	39.3%	100.0%			
Problem Solving Skills	Low	27.0%	73.0%	100.0%	31.977 <sup>a</sup>	1	.000
	High	67.3%	32.7%	100.0%			
Team Work	Low	51.1%	48.9%	100.0%	.081 <sup>a</sup>	1	.776
	High	48.7%	51.3%	100.0%			
Employability Skills	Low	40.3%	59.7%	100.0%	4.058 <sup>a</sup>	1	.044
	High	54.9%	45.1%	100.0%			
Total		49.2%	50.8%	100.0%			

Source: Researcher's Computation 2019. a. 0 cells (0.0%) have expected count less than 5.

There is a significant difference in age preference among ODL graduates in critical thinking skills, communication skills, creativity and innovation skills, decision making skills, numeracy skills, problem solving skills and employability at Chi-square value = 43.551, 20.260, 33.711, 13.839, 13.480, 31.977 and 4.058, since  $p < 0.05$  respectively. Furthermore, ODL graduates who are between ages (18-34) have higher critical thinking skills with 74.7%, higher communication skills with 63.9%, higher creativity and innovation skills with 67.6%. Similarly, (18-34) years of age have higher decision making skill, numeracy Skills, and Problem Solving Skills with 60.2%, 60.7%, 67.3%, respectively compared to ODL graduates who 35 years and above.

**H<sub>02</sub>:** There is no significant difference between the ages of ODL graduates and 21<sup>st</sup> century skills deployed on improving their employability.

**Table 6: Group Statistics and Independent Samples T-Test**

Employability Skill Factors	Age	N	Mean	SD	t	df	p-value	Mean Difference
Critical Thinking Skills	18-34	98	3.8588	.68754	9.040	197	.000	1.22683
	35 +	101	2.6320	1.16030				
Communication Skills	18-34	98	3.7306	.69348	6.782	197	.000	.95437
	35 +	101	2.7762	1.21401				
Creativity and Innovation Skills	18-34	98	3.9665	.72432	7.424	197	.000	.75997
	35 +	101	3.2065	.71954				
Self-Direction Skills	18-34	98	3.8112	.58506	1.408	197	.161	.10660
	35 +	101	3.7046	.47951				
Global Connections	18-34	98	4.1105	.70180	-1.378	197	.170	-.15183
	35 +	101	4.2624	.84372				
Local Connections	18-34	98	3.9980	.77459	-1.112	197	.267	-.13867
	35 +	101	4.1366	.96992				
Using Technology as a Tool of Learning	18-34	98	3.9196	.77227	-1.867	197	.063	-.23382
	35 +	101	4.1535	.97882				
Higher Education Skills	18-34	98	3.9939	.83799	-2.030	197	.044	-.25365
	35 +	101	4.2475	.92137				
Decision Making Skills	18-34	98	3.9626	.78502	3.677	197	.000	.41913
	35 +	101	3.5435	.82176				
Numeracy Skills	18-34	98	3.9854	.84066	6.100	197	.000	.83266
	35 +	101	3.1528	1.06776				
Problem Solving Skills	18-34	98	3.9331	.85588	7.697	197	.000	1.11682
	35 +	101	2.8163	1.16295				
Team Work	18-34	98	4.0361	.82185	.165	197	.869	.02011
	35 +	101	4.0160	.89874				

Employability Skills	18-34	98	3.9422	.55568	5.391	197	.000	.38821
	35 +	101	3.5540	.45679				

Source: Researchers' Computation, 2019. SD = Standard Deviation.

The result showed that ODL graduates who are between ages (18-34) years are better than ODL graduates who are 35 years and above in critical thinking skills, communication skills, creativity and innovation skills, decision making skills, numeracy skills, problem solving skills, while ODL graduates 35 years and above.

H<sub>04</sub>: There is no significant positive contribution between socio-demographic and employability factors influencing employability level among the ODL graduates.

### Binary Logistic Regression Model

The dependent variable (Employability level = EL) is a binary variable based on (Low and High) took the value (Low =0, High =1). The employability skill variables and socio-demographic factors were used to predict employability level. The independent variable description is given as

**Table 9: Logistics Regression Variables in the Equation and Coefficients**

Variables	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
V1(1)	1.510	1.050	2.068	1	.150	4.527	.578	35.444
V2(1)	.953	.940	1.028	1	.311	2.593	.411	16.357
A1(1)	7.265	1.175	13.715	1	.001	9.632	.963	96.384
A2(1)	5.042	1.634	9.517	1	.002	154.789	6.288	310.399
A3(1)	1.198	1.137	1.110	1	.292	3.315	.357	30.800
A4(1)	1.756	1.349	1.696	1	.193	5.791	.412	81.411
A5(1)	1.515	1.548	.958	1	.328	4.551	.219	94.635
A6(1)	.473	1.024	.214	1	.644	1.605	.216	11.950
A7(1)	6.000	1.789	11.246	1	.002	403.228	12.099	438.784
A8(1)	2.022	1.177	2.951	1	.086	7.556	.752	75.926
A9(1)	4.781	1.706	7.859	1	.005	119.274	4.215	375.428
A10(1)	1.081	1.980	.298	1	.585	2.947	.061	4.851
A11(1)	4.070	1.677	5.894	1	.015	58.581	2.191	166.258
A12(1)	1.816	1.307	1.930	1	.165	6.147	.474	7.651
Constant	-16.346	4.460	13.430	1	.000	.000		

a. Variable(s) entered: V1, V2, A1, A2, A3, A4, A5, A6, A7, A8, A9, A10, A11, A12.

Nagelkerke R squared = 0.872 (87.2%). Hosmer–Lemeshow test = 204.469 (p<0.05).

### Results of the Binary Logistic Regression Analysis

Binary regression analysis was employed to determine the socio-demographic and 21<sup>st</sup> century skills employability among the ODL graduates using the dependent variable as Employability Level (Low = 0, High = 1). The model explained 87.2 percent (Nagelkerke R squared) of the variance in Employability Level, which suggests a good prediction power. Hosmer–Lemeshow test is 204.469 with a significant level of (p<0.05) supports the models in (Table 9). The logistic regression results in (Table 9) indicated that critical thinking skills, communication skills, using technology as a tool for learning, decision making skills, and problem solving skills have significant influence on employability level at Wald = 13.715 (p<0.05), 9.517 (p<0.05), 11.246 (p<0.05), 7.859 (p<0.05) and 5.894 (p<0.05), respectively.

### 5.0 Discussion of Findings

The validation of the reliability results of the instruments is carried out using analysis of variance (ANOVA) to test if there is significance variation on how the respondents rated the items in the instruments. The results suggest that there is no variation on the rating of the items by respondents at F-values = 4.331 (p<0.05). Further analysis using the mean also revealed that ODL graduates have high employability skills since the mean response rating obtained is above 3.24 > 2.50 scale mean. The result of the findings using chi squared and correlation analysis to test the hypothesis revealed that ODL graduates who are between the ages (18-34) had better employability skills than ODL graduates who are 35 years and above. The logistic regression results indicated that critical thinking skills, communication skills, using technology as a tool for learning, decision making skills, and problem solving skills

have significant influence on employability level at Wald = 13.715 ( $p < 0.05$ ), 9.517 ( $p < 0.05$ ), 11.246 ( $p < 0.05$ ), 7.859 ( $p < 0.05$ ) and 5.894 ( $p < 0.05$ ), respectively.

## 6.0 Conclusion and Recommendations

Employability skill factors are important skills to be inculcated by ODL graduates to enable them compete favorably with their counterparts. The result showed that ODL programmes should be people between the ages of 18-34 years because they are more familiar with the current technologies for teaching. The logistic regression results indicated that critical thinking skills, communication skills, using technology as a tool for learning, decision making skills, and problem solving skills have significant influence on employability level.

Finally, the key determinants of employability factors are obtained as critical thinking skills, communication skills, using technology as a tool of learning, decision making skills, and problem solving skills.

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