INFLUENCE OF SUPPORTIVE SUPERVISION FOR MONITORING AND EVALUATION ON UTILIZATION OF INFRASTRUCTURAL FACILITIES BY DISABLED LEARNERS: THE CASE OF NATIONAL POLYTECHNICS, KENYA

Fredrick O. Owuor, Charles M. Rambo, Raphael O. Nyonje & Paul A. Odundo
University of Nairobi, **KENYA**

ABSTRACT

Kenya has two national polytechnics, providing Technical, Industrial, Vocational and Entrepreneurship Training (TIVET) to both able-bodied and learners with disability. Even though the institutions have provided necessary infrastructural facilities to enable learners with disability access TVET, utilization of such facilities remains a subject of interest to policy makers, and one which no empirical study has ever examined, at least in the Kenyan context. The objective of this study was to determine the influence of supportive supervision for Monitoring and Evaluation (M&E) systems on utilization of infrastructural facilities by learners with disability. A cross-sectional survey and causal-comparative designs, with both quantitative and qualitative methods were applied to achieve the objective. Data were sourced in May 2015 from 2 principals, 282 teaching staff, 32 learners, 4 officers from Ministry of Education, and 2 officers from National Council for Persons Living with Disability. The results show that utilization of infrastructural facilities significantly associated with supportive supervision for M&E system (χ^2 = 40.296, df = 4 & ρ-value = 0.000), which led to rejection of the null hypothesis. In addition, participants perceiving that supportive supervision for M&E was 'always' provided by institutional management had about 9.7 times the odds of positively influencing utilization of infrastructural facilities by learners with disability as their colleagues who perceived that supportive supervisions was 'never' provided (ρ-value = 0.003, β = 2.273, OR = 9.710, C.I. = 2.186-43.135). The results suggest that the more consistent the supportive supervision, the better the chances of teaching staff positively influencing utilization of infrastructural facilities by learners with disability.

Keywords: Supportive supervision, utilization, infrastructural facilities, learners with disability, national polytechnics.

INTRODUCTION

Monitoring and Evaluation (M&E) processes enable project managers to continuously gather and analyze information regarding performance of a project or a program, and to explore factors underlying such performance. Without effective M&E systems, it might be impossible for project management to judge whether implementation is on the right course or not; whether achievements are linkable to interventions or not; as well as how project strategies can be fine-tuned to improve similar interventions in the future (United Nations Development Program [UNDP], 2009). Besides, M&E processes are not only complimentary, but also logically sequential. In this regard, the monitoring process provides information, which the evaluation process examines to determine performance, as well as explain factors underlying performance in order to inform management decisions (Kusek & Rist, 2004; Lahey, 2005).

A crucial requirement for functional M&E systems is supportive supervision, which is a facilitative approach that is designed to promote mentorship, teamwork, motivation, productivity and high performance (Marshall & Fehringer, 2013; Honari, Goudarzi, Heidari & Darbani, 2011). Within the context of M&E, supportive supervision also entails creating a

free environment for accurate reporting of information, whether positive or negative; setting standards for data quality and ensuring adherence to such; appraisal and technical guidance of M&E staff; as well as recognition and rewarding exemplary performance, among other aspects (Pont, Nusche & Moorman, 2008).

Supportive supervision is necessary for M&E systems in all sectors to generate information that is useful for management decisions. In the education sector, for instance, supportive supervision enables M&E systems to generate accurate information on indicators related to access, quality and equity (Psacharopoulos, 1994; Vos, 2006). In the context of learners with disability, supportive supervision is essential for M&E systems to generate accurate data on indicators such as adequacy, functionality, safety, appropriateness and utilization of infrastructural facilities, which authorities use to inform decisions on budgeting, procurement, installation and maintenance of appropriate infrastructural facilities in order to improve participation in learning and extra-curricular activities among learners with disability (Brandjes, 2002; United Nations Education Scientific and Cultural Organisation [UNESCO], 2013).

The number of Technical and Vocational, Educational Training (TVET) institutions in Kenya rose marginally from 753 to 755 between 2013 and 2014, while enrolment in such institutions increased from 148,009 to 148,142 over the same period (Kenya national Bureau of Statistics [KNBS], 2015a; 2015b). Among the institutions providing TVET in Kenya are two national polytechnics, namely, Eldoret and Kisumu Polytechnics. Established in 1985, Eldoret Polytechnic is situated in Uasin Gishu County, about 335 kilometers northwest of Nairobi, the capital city of Kenya (Eldoret Polytechnic, 2008). Between 2007 and 2014, the institution expanded into four campuses, while the student population increased from 2,752 to 4,399 over the same period (KNBS, 2014). Situated about 400 kilometers West of Nairobi is Kisumu Polytechnic, which started as a technical secondary school in 1967, but was upgraded into technical training institute in 1988, before being elevated into a national polytechnic in 1996. Between 2007 and 2014, enrolment in at the institution increased from 2,313 to 3,318 (KNBS, 2014; Nyerere, 2009). At the end of 2014, the two institutions had a total enrolment of 7,717, which included 122 learners with various forms of disability (Ministry of Education, 2015).

The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) reaffirms the right of learners with disability to access quality education and training (United Nations, 2006; UNESCO, 2013). More specifically, Article 24 of the Convention indicates that providing assistive infrastructural facilities is at the centre of expanding access to education for learners with various forms of disability. In this regard, Party States are urged to ensure that necessary facilities are constructed, installed or provided on a needs-basis in educational institutions to facilitate mobility, participation as well as curriculum implementation processes (UNESCO, 2013). In Kenya, the Convention is domesticated through the Disability Act 2012, which is read together with Article 54(1)(b) of the Kenya Constitution 2010. Although national polytechnics have provided necessary infrastructural facilities to enable learners with disability access TVET, utilization of such facilities remains a subject of interest to policy makers.

Optimal utilization of infrastructural facilities by learners with disability is likely to improve participation in learning and extra-curricular activities; as well as make educational institutions more accommodative and facilitative. This may be achieved where M&E systems are supported to generate accurate information to guide investment and management

decisions at the institutional and Ministry of Education levels (World Bank, 2004; UNESCO, 2013). Nevertheless, a review of existing literature suggests that utilization of infrastructural facilities by learners with disability may have a relationship with various components of M&E systems, including supportive supervision (UNESCO, 2013; Marshall & Fehringer, 2013). However, the literature also reveals a gap in terms of peer-reviewed academic studies directly linking supportive supervision for M&E systems with utilization of infrastructural facilities by learners with disability, particularly within the Kenyan context. This study was expected to determine the influence of supportive supervision for M&E on utilization of infrastructural facilities by learners with disability in Kenyan national polytechnics.

LITERATURE REVIEW

Supervision is an important component of M&E systems, where project or program management organizes, guides and oversees the work of M&E staff; as well as influences their task performance to achieve a common goal (Pont, Nusche & Moorman, 2008). Whereas some managers focus more on work relations with their staff members, others skew attention towards perfromance and achievement of project or program goals. However, an effective manager strives to strike a balance between work relations and task perfromance (Bass & Avolio, 1997). Whether a manager emphasizes work relations, task performance or both is what determines whether a supervision style is supportive or not.

Supervision styles are patterns of specific behaviors displayed by individuals during their work to influence conformity to organizational norms and values, with a view to improving performance (Pont et al., 2008; Miller, 2002). According to Honari, Goudarzi, Heidari, and Darbani (2011), supervision styles can be autocratic, democratic, or laissez-faire. Autocratic supervisors make all decisions without the input of staff members and direct group members on the way things should be done. Besides, they neither maintain clear channels of communication nor delegate authority for staff members to participate in decision-making processes (Honari *et al.,* 2011). Contrastingly, democratic supervisors propagate team spirit and emphasize on the participation of staff members in decision-making processes. In this regard, democratic supervision style is also known as participative or supportive supervision (Organization for Economic Cooperation and Development [OECD], 2008). Laissez-faire supervisors allow staff members to have complete freedom for decision-making with minimal or no involvement. They do not interfere with or participate in the course of events; and care less whether staff members succeed or fail in their obligations (Honari *et al.,* 2011; Bass & Avolio, 1997).

Within the context of learners with disability, supervision styles adopted by institutional management as well as by the Ministry of Education officers may significantly affect staff motivation, productivity, as well as learners' consistent use of infrastructural facilities (Pont *et al.,* 2008; OECD, 2008). The utilization of such facilities may be improved where education program managers at the Ministry and institutional levels have embraced supportive or democratic supervision. In this regard, managers are responsible for appraising and providing guidance to their staff and learners on appropriate pedagogy; as well as infrastructural facility functionality and safety standards, among other duties (OECD, 2008).

In many developing countries, supervision of education programs was, for a long time, taken to mean inspection of teachers' work and institutional conformity to education policies and quality standards (Chepkuto, 2012). This type of approach to supervision was designed to determine whether the institutional management and staff members did their work as

expected; and if they did not, be subjected to appropriate disciplinary measures (Chepkuto, 2012; UNESCO, 2013). Consequently, the approach was deficient of comprehensive plans for improving teaching, learning, monitoring and reporting activities, as well as addressing the needs of learners with disability (UNESCO, 2013). Wanzare (2006) explains that the term "inspector" portrayed education program officers from the Ministry of Education as persons coming to see that policies developed at the central education office were being implemented in educational institutions. This notion often created a rift between the inspectors and teachers; as a result, some teachers shied away from free interaction with inspectors for fear of victimization (Wanzare, 2006).

Contrastingly, Pont *et al.,* (2008) notes that the primary duty of school principals is to create a favorable atmosphere for teachers to guide learners on appropriate use of infrastructural facilities to enhance participation in learning and extra-curricular activities. The way the principal relates with his or her staff members could contribute immensely to their ability to create the most appropriate environment for teachers and learners with disability. Honari *et al.,* (2011) argues that whereas supportive supervision can result to great success in staff motivation and consistent support to learners with disability, autocratic supervision associates with lack of motivation, poor teamwork and unsupportive environment to learners with disability (Honari *et al.,*2011).

Staff motivation is indicated by attributes such as enthusiasm to guide and support learners with disability whenever necessary, less job stress and active engagement with the principals for feedback (Griffin, 2002). Motivated staff members are also willing to give more of their time to learners with disability, as well as capture and report accurate program data. As pointed out by Honari *et al.,* (2011), although various factors operate to influence teachers' motivation in the school environment, the type of supervision style adopted by principals and education officers from the Ministry of Education has the greatest influence. Kyles (2005) also concur that supervision style adopted by school principals plays an important role in shaping institutional culture, productivity, staff obligations, and performance.

In the United States, Rice and Warren (2004) found that 41% of teachers involved in the study indicated satisfaction with support provided by their departmental heads while 59% expressed dissatisfaction with such support. In addition, the study reported a significant relationship between satisfaction with support provided by departmental heads and performance of students. In this regard, among those who indicated satisfaction with the level of support provided by departmental heads, 67% reported improved performance of their students; among those who were dissatisfied with the support, only 19% reported improved performance of their students. Nonetheless, the study provides a broad picture regarding the influence of support provided by administrators on learning achievement among students. It did not focus on the utilization of infrastructural facilities by disable learners.

In Haiti, Marshall and Fehringer (2013) assessed the influence of supportive supervision on effectiveness of the M&E of a community-based HIV program; and noted that the intervention had resulted to positive changes in various activities, including data collection, quality control, utilization and demand, along with changes in staff motivation or competency. Participants cited changes in all the M&E quality indicators and more particularly, in data collection and data quality. Better still, changes in data collection were mentioned 15 times, while changes in data quality were mentioned 11 times. Participants linked such changes to supportive supervision provided by program management to field staff. Nonetheless, improvements in data quality were also related to improvements in data collection methods,

tools, filing and storage. In this regard, some participants noted that supportive supervision enabled them to acquire important skills from their superiors, which enabled them to become more cautious when collecting, processing analyzing, reporting and storing data.

Nonetheless, supportive supervision and data auditing in developing countries are often affected by resource constraints, staffing shortage, as well as lack of continuous professional development for education program managers at the district and institutional levels, which in turn, affects the consistency of supervisory visits and engagement forums (Mackay, 2007). In Ghana, a study conducted by Community School Alliances (CSA) project, whose purpose was to find out how Circuit Supervisors performed their duties in their respective areas, reported that about 60% of the Supervisors did not visit schools regularly to monitor teaching and learning, the main reasons being budgetary and logistical constraints, heavy workload and lack of motivation (Dickson, 2011). Still in Ghana, Mankoe (2007) identified a number of supervisory issues prevailing in public schools and education management systems, including lack of transport facilities for supervisors, low academic qualifications, and lack of professional development for Ministry of Education supervisors, head teachers, and teachers. The challenges contributed to poor quality education in Ghanaian community schools.

The literature review reveals that empirical studies focusing on supportive supervision and the effectiveness of M&E systems are few, while those examining the influence of supportive supervision on utilization of infrastructural facilities by learners with disability are even fewer. Besides, the influence of supportive supervision is widely documented in the health sector more than in the education sector, especially in the context of learners with disability.

METHODOLOGY

The study applied descriptive cross-sectional survey and causal-comparative research designs, with both quantitative and qualitative methods. The cross-sectional survey design captured data for descriptive purpose, while causal-comparative design enabled the investigators to determine the causal relationship between supportive supervision for M&E systems and utilization of infrastructural facilities by learners with disability. The study targeted a population of 322 respondents, including 32 learners (16 disabled and 16 able-bodied), 2 principals, 23 departmental heads, 259 lecturers, 4 officers at the Ministry of Education (MoE), and 2 officers from National Council for People Living with Disability (NCPLWD). A census method was applied to select departmental heads and lecturers; while purposive sampling technique was used to select principals, NCPLWD officers, MoE officers, as well as identify and sample able-bodied learners and those with disability for Focus Group Discussions (FGDs). The sampling process ensured equal participation of male and female learners.

Furthermore, four sets of instruments, including a survey questionnaire, a Key Informant Interview (KII) guide, an FGD guide, an observation check list, and a document analysis guide were applied to capture the requisite data. The use of multiple instruments was important for triangulation of data and elimination of potential biases arising from each method (Jaeger, 1984). The instruments were pre-tested at the Rift Valley Technical Training Institute in Eldoret to check on their accuracy and applicability. Necessary adjustments such as re-statement of unclear questions and instructions; omission of irrelevant questions and grammatical errors were effected based on results, comments from respondents and new insights.

Primary data were collected with the support of eight research assistants, two of whom were experts in sign language and Braille reading. Data were collected in May 2015. In this regard, 311 questionnaires were issued out to participants, including 57 departmental heads and 254 lecturers. At the end of data collection process, 282 questionnaires were successfully completed and returned, which represents 90.7% questionnaire return rate. Notably though, the return rate seemed to be higher among lecturers (93.7%) than among departmental heads (77.2%), particularly due to the latter's commitment with official duties. Both quantitative and qualitative approaches were applied to process, analyze, and interpret the data. Quantitative data processing involved coding close-ended data, entry, cleaning, transformation, analysis, and interpretation. The Statistical Package for Social Sciences (SPSS) program was used to perform descriptive and inferential analyses.

Descriptive analysis generated frequency distributions and percentages, while inferential analysis yielded cross-tabulations with Chi-square (χ^2) statistic, and odds ratios from binary logistic regression. The purpose of the model was to determine the proportion of variance in utilization of infrastructural facilities by learners with disability explained by supportive supervsion for M&E systems. In the model, the predicted variable takes the value 1 with a probability of success θ, or the value 0 with probability of failure 1-θ (Aldrich & Nelson, 1984; Wuensch, 2006). In this study, the dependent variable was utilisation of infrastructural facilities, with possible values being *consistent* or *inconsistent*.
The model was expressed as:

$$Logit[\theta(Y)] = log\left[\frac{\theta(Y)}{1-\theta(Y)}\right] = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \dots + \beta_i X_i + \varepsilon_i$$

Such that *Y* = the predicted variable (utilization of infrastructural facilities by disabled learners); *θ(Y)* = the probability that a particular disabled learner was consistent in utilizing infrastructural facilities; *1- θ(Y)* = the probability that a particular disabled learner was inconsistent in utilizing infrastructural facilities; α = constant term of the equation; *β₁, β₂...βᵢ* = regression co-efficients associated with independent variables; *X₁, X₂...Xᵢ* = independent variables and *ε* = the error term (Aldrich & Nelson, 1984; Wuensch, 2006). The study focused on the utilization of five types of infrastructural facilities, namely: *classrooms*, *libraries*, *social halls*, *playgrounds*, and *dining halls*. Perceptions about the frequency of utilization for each of facility were aggregated to form the dependent variable - utilization of infrastructural facilities by learners with disability. The computed results were measured on a three-point scale, where the aggregate value '5' was re-coded as 'not sure' about the extent to which learners with disability utilized all the five facilities; values '6 to 17' were re-coded as 'inconsistent utilization'; while values '18 to 25' were re-coded as 'consistent utilization'.

In addition, qualitative data were processed and analyzed following three steps, as recommended by Best and Khan (2004). In the first step, the data was organized and summarized in line with objectives of the study. The second step involved description of the summary sheets to produce a preliminary report. The third step involved systematic analysis and interpretation of the preliminary report, which was integrated with quantitative data in the final report.

The investigators sought informed consent from participants before being engaged through questionnaires, KIIs and FGDs. In this regard, respondents were briefed about the study and its purpose; and that their participation was purely on voluntary terms. They were also notified about their right to withdraw consent at any time without any penalty. Participants

were assured about confidentiality of the information and opinions provided to the investigators; thus, no personal identifiers were documented. Ethical clearance for the study was obtained from the University of Nairobi Ethics and Research Committee; while a research permit was obtained from the National Commission for Science and Technology (NACOSTI).

RESULTS

This sections presents results of the study, which have been organized under four sub-sections, including: utilization of infrastructural facilities by learners with disability; participants' socio-demographic background; supportive supervision for M&E and utilization of infrastructural facilities (bivariate analysis); as well as influence of supportive supervision on utilization of infrastructural facilities (multivariate analysis). Details are presented under the following sub-sections.

Utilization of Infrastructural Facilities

The results show that of the 282 participants, 81 (28.7%), including 54 (36.2%) in Eldoret and 27 (20.3%) in Kisumu Polytechnics, believed that learners with disability were 'consistent' in utilizing infrastructural facilities; while 175 (62.1%) participants felt that such learners were 'inconsistent' in utilizing the facilities. This group included 87 (58.4%) participants in Eldoret and 88 (66.2%) in Kisumu Polytechnics. In addition, 26 (9.2%) participants were 'not sure' whether learners with disability were 'consistent' or 'inconsistent' in utilizing the facilities. Based on this, the analysis obtained a computed χ^2 value of 11.983, with 2 degrees of freedom and a ρ-value of 0.003, suggesting up to 99% chance that perceptions about utilization of infrastructural facilities by learners with disability varied significantly between the two institutions.

Participants' Socio-Demographic Profile and Utilization of Infrastructural Facilities

Table 1 shows that participants included 167 (59.2%) men and 115 (40.8%) women. Besides, 69.1% of those who believed that learners with disability were 'consistent' in utilizing infrastructural facilities were men. Similarly, more men (56.6%) than women (43.4%) indicated that learners with disability were 'inconsistent' users of the facilities. The analysis revealed a significant relationship between gender and utilization of infrastructural facilities (χ^2 = 5.644, df = 2 & ρ-value = 0.059). The results imply up to 90% chance that male and female participants were significantly different in terms of perceptions about utilization of infrastructural facilities by learners with disability.

Table 1: Participants' socio-demographic profile and utilization of facilities

Attributes	Consistent		Inconsistent		Not Sure		Total	
	Freq	*%*	*Freq*	*%*	*Freq*	*%*	*Freq*	*%*
Gender								
Male	56	69.1	99	56.6	12	46.2	167	59.2
Female	25	30.9	76	43.4	14	53.8	115	40.8
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Age								
<26 years	12	14.8	29	16.6	4	15.4	45	16.0
26-35 years	21	25.9	53	30.3	12	46.2	86	30.5
36-45 years	29	35.8	62	35.4	5	19.2	96	34.0
46 years +	19	23.5	31	17.7	5	19.2	55	19.5
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Education level								

Diploma	6	7.4	12	6.9	3	11.5	21	7.4
Higher national diploma	5	6.2	13	7.4	5	19.2	23	8.2
Bachelors	33	40.7	70	40.0	14	53.8	117	41.5
Postgraduate diploma	16	19.8	38	21.7	1	3.8	55	19.5
Masters	21	25.9	40	22.9	3	11.5	64	22.7
Doctorate	0	0.0	2	1.1	0	0.0	2	0.7
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Position in the institution							
Lecturer	68	84.0	146	83.4	24	92.3	238	84.4
Departmental head	13	16.0	29	16.6	2	7.7	44	15.6
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Professional experience							
<6 years	29	35.8	66	37.7	12	46.2	107	37.9
6 to 10 years	19	23.5	36	20.6	10	38.5	65	23.0
11 to 15 years	15	18.5	35	20.0	1	3.8	51	18.1
16 years+	18	22.2	38	21.7	3	11.5	59	20.9
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**

The results show that 96 (34.0%) participants were aged 36 to 45 years, while 86 (30.6%) were in the 26 to 35 years age bracket. Cumulatively, 182 (64.5%) participants were aged between 26 and 45 years, 55 (19.5%) were aged 46 years or higher, while 45 (16.0%) reported ages below 26 years. However, there was no significant relationship between participants' age and perceptions about utilization of infrastructural facilities by learners with disability. The results in Table 1 further show that most participants, 117 (41.5%) had attained bachelor's degrees, 64 (22.7%) reported masters degrees, while 55 (19.5%) were postgraduate diploma holders. Notably, individuals with bachelor's degrees dominated the group believing that learners with disability were 'consistent' in utilizing infrastructural facilities, 33 (40.7%). The same situation is noted among those who reported 'inconsistent' use of infrastructural facilities and among those who were 'not sure'. However, the results show no significant relationship between perceptions about utilization of infrastructural facilities by learners with disability and participants' education level.

The results presented in Table 1 further show that 238 (84.4%) participants were lecturers, while 44 (15.6%) were departmental heads. Notably, lecturers dominated in all the three categories of perceptions on utilization of infrastructural facilities. However, the analysis revealed no significant relationship between perceptions on utilization of infrastructural facilities and participants' positions. Table 1 further shows that 107 (37.9%) participants reported a professional experience of less than 6 years, 65 (23.1%) reported 6 to 10 years, while 59 (20.9%) indicated experience of 16 years or higher. Again, the results show no significant association between perceptions on utilization of infrastructural facilities and the participants' level of professional experience.

Supportive supervision for M&E and Utilization of Infrastructural Facilities

Supportive supervision is crucial for functionality of M&E systems in public institutions by encouraging conformity to organizational norms and values, in the process of achieving performance targets. This study captured various aspects of supportive supervision for M&E systems in the national polytechnics and the influence of such on utilization of infrastructural facilities by learners with disability.

Helpfulness of support provided by institutional management

This study captured participants' views about perceived helpfulness of support provided by various administrators/managers, as they fulfilled their mandate of assisting learners with

disability to utilize infrastructural facilities and participate fully in learning as well as extra-curricular activities. The results presented in Table 2 show that of the 282 participants, 109 (38.7%) indicated that the support provided by *principals* was 'highly helpful', 113 (40.1%) indicated that the support provided by *principals* was 'helpful', while 7 (2.4%) thought that such support 'did not help at all'. Those who felt that the support provided by *heads of departments* was 'highly helpful' were 72 (25.5%), slightly more than one-half of the participants, while 147 (52.1%) rated the support provided by *heads of departments* as 'helpful'. Contrastingly, only 6 (2.1%) participants stated that support provided by *heads of departments* 'did not help at all', while 20 (7.1%) felt that such support was 'somehow helpful'.

Table 2: Perceived helpfulness of support provided by institutional management

Helpfulness of support from administrators/managers	Consistent		Inconsistent		Not Sure		Total	
	Freq	*%*	*Freq*	*%*	*Freq*	*%*	*Freq*	*%*
Principals								
Do not help at all	1	1.2	5	2.9	1	3.8	7	2.4
Somehow helpful	4	4.9	11	6.3	4	15.4	19	6.7
Moderately helpful	12	14.8	22	12.5	0	0.0	34	12.1
Helpful	34	42.1	75	42.9	4	15.4	113	40.1
Highly helpful	30	37.0	62	35.4	17	65.4	109	38.7
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Heads of departments								
Do not help at all	0	0.0	5	2.9	1	3.8	6	2.1
Somehow helpful	4	4.9	13	7.4	3	11.6	20	7.1
Moderately helpful	12	14.8	23	13.1	2	7.7	37	13.2
Helpful	42	51.9	98	56.0	7	26.9	147	52.1
Highly helpful	23	28.4	36	20.6	13	50.0	72	25.5
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Lecturers								
Do not help at all	0	0.0	4	2.3	1	3.8	5	1.8
Somehow helpful	9	11.1	17	9.7	3	11.5	29	10.2
Moderately helpful	10	12.3	31	17.7	3	11.5	44	15.6
Helpful	38	46.9	97	55.4	18	69.4	153	54.3
Highly helpful	24	29.7	26	14.9	1	3.8	51	18.1
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Dean of students								
Do not help at all	0	0.0	5	2.9	1	3.8	6	2.1
Somehow helpful	4	4.9	11	6.3	5	19.2	20	7.1
Moderately helpful	7	8.6	22	12.6	6	23.1	35	12.4
Helpful	38	46.9	93	53.1	14	53.9	145	51.4
Highly helpful	32	39.6	44	25.1	0	0.0	76	27.0
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Quality assurance officers								
Do not help at all	0	0.0	8	4.6	3	11.5	11	3.9
Somehow helpful	4	4.9	15	8.6	6	23.1	25	8.9
Moderately helpful	15	18.5	36	20.6	9	34.7	60	21.3
Helpful	37	45.7	83	47.3	7	26.9	127	45.0
Highly helpful	25	30.9	33	18.9	1	3.8	59	20.9
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**

Table 2 further shows that 51 (18.1%) participants described the support provided by *lecturers* as 'highly helpful', while more than one-half, 153 (54.3%), thought that such support was 'helpful'. By contrast, 5 (1.8%) participants said that support provided by *lecturers* 'did not help at all', while 29 (10.2%) thought that the support was 'somehow

helpful'. Furthermore, 76 (27.0%) participants described the support provided by *deans of students* as 'highly helpful', while 145 (51.4%) felt that the support was 'helpful'. However, 6 (2.1%) participants were of the view that the support provided by *deans of students* 'did not help at all', while 20 (7.1%) said that such support was 'somehow helpful. Regarding *quality assurance officers*, 59 (20.9%) participants described their support as 'highly helpful', while 127 (45.0%) felt that support provided by the officers was 'helpful'. Those who thought that support provided by *quality assurance officers* 'did not help at all' were 11 (3.9%), while those who felt that such support was 'somehow helpful' were 25 (8.9%).

The analysis revealed significant relationships between utilization of infrastructural facilities by learners with disability and support provided by the following administrators/managers: *principals* (χ^2 = 17.512, df = 8 & ρ-value = 0.025); *heads of departments* (χ^2 = 16.282, df = 8 & ρ-value = 0.039); as well as *lecturers* (χ^2 = 15.617, df = 8 & ρ-value = 0.048); *deans of students* (χ^2 = 24.336, df = 8 & ρ-value = 0.002); and *quality assurance officers* (χ^2 = 27.036, df = 8 & ρ-value = 0.001). On average, more than 70% of participants expressed a high level of satisfaction with support provided by all the administrators/managers to improve the effectiveness of M&E system and utilization of infrastructural facilities by learners with disability.

Financing maintenance of facilities used by learners with disability

The study captured participants' views regarding how often maintenance of various infrastructural facilities was financed by the institutions. The results, which are presented in Table 3 show that of the 282 participants, 27 (9.6%) reported that *lighting in buildings* was 'always' financed by the administration; 46 (16.3%) participants indicated that maintenance of *lighting in buildings* was 'often' financed, while 48 (17.0%) stated that the aspect was 'never' financed by administration.

The results show that 28 (9.9%) participants reported that maintenance of *walkways* was 'always' financed by the institutions, while 64 (22.7%) stated that the aspect was 'often' financed. Contrastingly, 26 (9.2%) participants said that maintenance of *walkways* was 'never' financed, while 78 (27.7%) indicated that the aspect was 'rarely' financed. More still, 9 (3.2%) participants were of the view that maintenance of *security appliances* was 'always' financed, while 36 (12.8%) felt that maintenance of such facilities was 'often' financed. Those who felt that maintenance of *security appliances* was 'never' financed were 101 (35.8%).

Furthermore, 42 (14.9%) participants reported that maintenance of *ramps* was 'always' financed by the institutions; 61 (21.6%) were of the view that maintenance of *ramps* was 'often' financed, while 19 (6.7%) felt that maintenance of such facilities was 'never' financed. Regarding maintenance of *electrical appliances*, 18 (6.4%) participants indicated that the aspect was 'always' financed, while 55 (19.5%) stated that it was 'often' financed. Those who reported that maintenance of such facilities was 'never' financed were 98 (34.7%).

The results show that utilization of infrastructural facilities by learners with disability was a function of how often maintenance of such facilities was financed by the institutions. More specifically, the study established significant relationships between utilization of infrastructural facilities by such learners and how often maintenance of the following infrastructural facilities was financed: *lighting in buildings* (χ^2 = 81.804, df = 8 & ρ-value = 0.000); *walkways* (χ^2 = 42.036, df = 8 & ρ-value = 0.000); as well as *security appliances* (χ^2 =

22.612, df = 8 & ρ-value = 0.004); *ramps* (χ^2 = 19.960, df = 8 & ρ-value = 0.010); and *electrical appliances* (χ^2 = 26.521, df = 8 & ρ-value = 0.001).

Table 3: Frequency of financing maintenance of facilities used by learners with disability

Frequency with which maintenance of various facilities was financed	Consistent		Inconsistent		Not Sure		Total	
	Freq	*%*	*Freq*	*%*	*Freq*	*%*	*Freq*	*%*
Lighting in the buildings								
Never	1	1.2	29	16.6	18	69.2	48	17.0
Rarely	14	17.3	48	27.4	6	23.1	68	24.1
Sometimes	31	38.2	60	34.3	2	7.7	93	33.0
Often	19	23.5	27	15.4	0	0.0	46	16.3
Always	16	19.8	11	6.3	0	0.0	27	9.6
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Walkways								
Never	2	2.5	19	10.9	5	19.2	26	9.2
Rarely	15	18.5	48	27.4	15	57.8	78	27.7
Sometimes	21	25.9	60	34.3	5	19.2	86	30.5
Often	27	33.3	37	21.1	0	0.0	64	22.7
Always	16	19.8	11	6.3	1	3.8	28	9.9
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Security appliances								
Never	24	29.6	72	41.1	5	19.2	101	35.8
Rarely	18	22.2	39	22.3	8	30.8	65	23.0
Sometimes	16	19.8	43	24.6	12	46.2	71	25.2
Often	18	22.2	17	9.7	1	3.8	36	12.8
Always	5	6.2	4	2.3	0	0.0	9	3.2
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Ramps								
Never	1	1.2	14	8.0	4	15.4	19	6.7
Rarely	16	19.7	34	19.4	4	15.4	54	19.1
Sometimes	22	27.2	72	41.2	12	46.1	106	37.7
Often	22	27.2	35	20.0	4	15.4	61	21.6
Always	20	24.7	20	11.4	2	7.7	42	14.9
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Electrical appliances								
Never	20	24.7	73	41.8	5	19.2	98	34.7
Rarely	25	30.9	28	16.0	3	11.5	56	19.9
Sometimes	15	18.5	35	20.0	5	19.2	55	19.5
Often	13	16.0	30	17.1	12	46.3	55	19.5
Always	8	9.9	9	5.1	1	3.8	18	6.4
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**

These findings amplify the importance of regular maintenance of infrastructural facilities utilized by learners with disability. However, an average of 129 (45.6%) participants reported a low frequency with which maintenance of the cited facilities was financed. This suggests that financing the maintenance of such facilities was not regular, which may have contributed to under-utilization by the intended beneficiaries. The assertion is corroborated by FGD and KII findings, which showed that maintenance of infrastructural facilities was infrequent in both institutions. In this regard, some participants pointed out that the institutions focused more on creating new infrastructural facilities than maintaining existing ones, which is good for expanding opportunities for learners with disability to access technical education.

Priority in the maintenance of various facilities used by learners with disability

Participants were requested to indicate their views about the level of priority accorded to maintenance of various infrastructural facilities utilized by learners with disability, including dining halls, hostels, administration block, toilets, walkways, classrooms and rumps. The results, which are presented in Table 4 show that of the 282 participants, 15 (5.3%) indicated

that maintenance of *dining halls* was 'essential', while 63 (22.4%) felt that the aspect was accorded a 'high priority'. Those who felt that maintenance of *dining halls* was 'not a priority' were 65 (23.0%) participants. In addition, 15 (5.3%) participants stated that maintenance of *hostels* was 'essential', 66 (23.4%) stated that maintenance of *hostels* was accorded a 'high priority', 41 (14.5%) indicated that the aspect was 'not a priority', while 65 (23.0%) felt that the aspect was given a 'low priority'.

Table 4: Perceived level of priority in the maintenance of various facilities

Level of priority in maintenance of various facilities	Consistent		Inconsistent		Not Sure		Total	
	Freq	%	Freq	%	Freq	%	Freq	%
Dining halls								
Not a priority	2	2.5	43	24.5	20	76.9	65	23.0
Low priority	8	9.9	39	22.3	4	15.4	51	18.1
Medium priority	30	37.0	56	32.0	2	7.7	88	31.2
High priority	30	37.0	33	18.9	0	0.0	63	22.4
Essential	11	13.6	4	2.3	0	0.0	15	5.3
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Hostels								
Not a priority	1	1.2	31	17.7	9	34.6	41	14.5
Low priority	10	12.4	41	23.4	14	53.9	65	23.0
Medium priority	27	33.3	66	37.7	2	7.7	95	33.8
High priority	33	40.8	32	18.3	1	3.8	66	23.4
Essential	10	12.3	5	2.9	0	0.0	15	5.3
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Administration block								
Not a priority	1	1.2	29	16.5	2	7.7	32	11.3
Low priority	15	18.5	43	24.6	15	57.7	73	25.9
Medium priority	26	32.1	64	36.6	8	30.8	98	34.8
High priority	26	32.1	34	19.4	1	3.8	61	21.6
Essential	13	16.1	5	2.9	0	0.0	18	6.4
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Toilets								
Not a priority	5	6.2	25	14.3	3	11.5	33	11.7
Low priority	15	18.5	41	23.4	13	50.0	69	24.5
Medium priority	21	25.9	70	40.0	10	38.5	101	35.8
High priority	28	34.6	31	17.7	0	0.0	59	20.9
Essential	12	14.8	8	4.6	0	0.0	20	7.1
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Walkways								
Not a priority	1	1.2	11	6.3	2	7.7	14	5.0
Low priority	11	13.6	36	20.6	6	23.1	53	18.8
Medium priority	26	32.2	79	45.1	14	53.8	119	42.2
High priority	30	37.0	41	23.4	4	15.4	75	26.6
Essential	13	16.0	8	4.6	0	0.0	21	7.4
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Classrooms								
Not a priority	2	2.5	14	8.0	3	11.5	19	6.7
Low priority	12	14.8	34	19.4	4	15.4	50	17.8
Medium priority	27	33.3	81	46.3	10	38.5	118	41.8
High priority	28	34.6	39	22.3	9	34.6	76	27.0
Essential	12	14.8	7	4.0	0	0.0	19	6.7
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**
Ramps								
Not a priority	5	6.2	10	5.7	3	11.5	18	6.4
Low priority	7	8.6	32	18.3	1	3.8	40	14.2
Medium priority	23	28.4	69	39.4	7	26.9	99	35.1

High priority	30	37.0	47	26.9	11	42.4	88	31.2
Essential	16	19.8	17	9.7	4	15.4	37	13.1
Total	**81**	**100.0**	**175**	**100.0**	**26**	**100.0**	**282**	**100.0**

Furthermore, 18 (6.4%) participants indicated that maintenance of *administrative blocks* was considered 'essential', while 61 (21.6%) felt that the aspect was accorded a 'high priority'. Those who felt that maintenance of *administrative blocks* was 'not a priority' were 32 (11.3%). Table 4 further shows that 20 (7.1%) participants rated the level of priority in maintenance of *toilets* as 'essential', 59 (20.9%) participants indicated that maintenance of *toilets* was accorded a 'high priority', 33 (11.7%) felt that the aspect was 'not a priority', while 69 (24.5%) stated that the aspect was given a 'low priority'.

The results show that 21 (7.4%) participants rated the level of priority in maintenance of *walkways* as 'essential, while 75 (26.6%) indicated that the aspect was accorded a 'high priority'. Contrastingly, 14 (5.0%) participants indicated that maintenance of *walkways* was 'not a priority', while 53 (18.8%) indicated that the aspect was accorded a 'low priority'. Those who felt that maintenance of *classrooms* was considered 'essential' were 19 (6.7%); 76 (27.0%) indicated that maintenance of *classrooms* was accorded a 'high priority', while 19 (6.7%) reported that the aspect was 'not a priority' in their institutions. Regarding *ramps*, 37 (13.1%) participants rated the priority accorded to maintenance of the facilities as 'essential', while 88 (31.2%) indicated that the aspect was accorded a 'high priority'. Those who felt that maintenance of *ramps* was 'not a priority' were 18 (6.4%), while those indicating thought that the aspect was accorded a 'low priority' were 40 (14.2%).

The results show that prioritization of various infrastructural facilities for maintenance is likely to influence utilization of such facilities by learners with disability. In this regard, the study revealed that utilization of infrastructural facilities by such learners significantly associated with the level of priority accorded to the maintenance of: *dining halls* (χ^2 = 89.546, df = 8 & ρ-value = 0.000); *hostels* (χ^2 = 66.585, df = 8 & ρ-value = 0.000); *administrative blocks* (χ^2 = 49.463, df = 8 & ρ-value = 0.000); *toilets* (χ^2 = 38.142, df = 8 & ρ-value = 0.000); *walkways* (χ^2 = 25.286, df = 8 & ρ-value = 0.001); *classrooms* (χ^2 = 21.811, df = 8 & ρ-value = 0.005); and *ramps* (χ^2 = 16.801, df = 8 & ρ-value = 0.032). Nonetheless, maintenance of *ramps* was accorded the highest level of priority, according to 125 (44.3%) participants; followed by *walkways*, 96 (34.0%); *classrooms*, 95 (33.7%); and *hostels*, 81 (28.7%).

Influence of Supervisory Support for M&E on Utilization of Infrastructural Facilities

The results in Table 5 show three indicators of supportive supervision for M&E that were captured by the study, including perceived helpfulness of support provided by administrators/managers at various levels; frequency of maintenance of facilities used by learners with disability; as well as level of priority accorded to maintenance of various facilities used by learners with disability. The results show that all the three indicators significantly associated with utilization of infrastructural facilities by learners with disability.

Table 5: Summary of cross tabulation analysis for M&E system support and supervision

Indicators	Computed χ^2	df	ρ-value
Perceived helpfulness of support provided by administrators/managers	14.580	4	0.013**
Frequency of maintenance of facilities used by learners with disability	43.415	4	0.000***
Priority in maintenance various facilities used by learners with disability	44.642	2	0.000***
Aggregate: Supportive supervision for M&E systems	**40.296**	**4**	**0.000***

*,**,*** show significance at ρ<0.1, ρ<0.05 and ρ<0.01 error margins, respectively

The three indicators were aggregated to create new values for the variable – supportive supervision for M&E system. The cross-tabulation analysis further revealed a significant relationship between supportive supervision for M&E system and utilization of infrastructural facilities by learners with disability. More specifically, the results show up to 99% chance that supportive supervision for M&E systems significantly associated with utilization of the facilities by learners with disability, which led to rejection of the null hypothesis, stating that *there is no significant relationship between supportive supervision for M&E and utilization of infrastructural facilities by learners with disability.*

The regression model incorporated five independent variables, viz. human resource capacity for M&E (*HRcapacity*); M&E work plan indicators (*WPindicators*); programme-monitoring process (*PMprocess*); supportive supervision for M&E (*SSsupervision*), as well as existence of policy guidelines (*TVETpolicy*) promoting the integration of learners with disability in the institutions. The results in Table 6 show that participants who perceived that supportive supervision for M&E was 'always' provided by the institutional management had about 9.7 times the odds of positively influencing utilization of infrastructural facilities by learners with disability as their colleagues who perceived that supportive supervisions was 'never' provided (ρ-value = 0.003, β = 2.273, OR = 9.710, C.I. = 2.186-43.135).

Table 6: Summary results of the adjusted logistic regression model

Covariates	β	S.E.	Wald	df	Sig.	Exp(β)	95% C.I. for EXP(β)	
							Lower	*Upper*
SSsupervision			17.566	2	0.000***			
Always	2.273	0.761	14.927	1	0.003***	9.710	2.186	43.135
Occasionally	1.198	0.311	8.839	1	0.022**	3.313	1.801	6.096
Never (RC)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

*,**,*** show significance at ρ<0.1, ρ<0.05 and ρ<0.01 error margins, respectively

In addition, participants who perceived that supportive supervision was provided 'occasionally' were about 3.3 times as likely to positively influence utilization of infrastructural facilities among learners with disability, as those who felt that institutional management 'never' provided supportive supervision for M&E to encourage learners' utilization of the facilities (ρ-value = 0.022, β = 1.198, OR = 3.313, C.I. = 1.801-6.096). Consequently, the results suggest that the higher the perceived frequency of supportive supervision, the greater the odds of participants positively influencing utilization of infrastructural facilities among learners with disability and vice versa. Furthermore, the adjusted regression model (adjusted for the moderating variable) obtained a Nagelkerke's R^2 of 0.375 implying that the model predicted up to 37.5% of variance in utilization of infrastructural facilities by learners with disability. The results suggest that the adjusted model was a fair estimation of M&E factors influencing utilisation of infrastructural facilities by learners with disability.

CONCLUSIONS AND IMPLICATIONS

The objective of the study was to determine the influence of supportive supervision for M&E on utilization of infrastructural facilities by learners with disability in Kenyan national polytechnics, namely Eldoret and Kisumu Polytechnics. In this study, the analysis indicated that teaching staff perceiving that M&E system in their institution was supportive supervision for M&E system was 'always' provided had better odds of positively influencing utilization of infrastructural facilities by learners with disability as their colleagues who perceived that the system 'never' received supportive supervision. Consequently, improving the consistency of supportive supervision is likely to strengthen M&E systems in national polytechnics; thereby, making teaching staff more supportive and influential regarding utilization of infrastructural facilities by learners with disability.

The results imply that there is need for appropriate interventions that would improve the consistency of supportive supervision for M&E systems in national polytechnics, including regular training of all administrators/managers at various levels to improve awareness as well as the quality of supportive supervision. Although the high proportion of teaching staff expressing satisfaction with support provided by administrators/managers, (70%), suggests that the supportive supervision for M&E systems in national polytechnics was functional, it would be important to invest more resources in capacity development to upgrade skills and deepen knowledge of administrators/managers about supportive supervision. Training should be coupled with effective motivation and performance management initiatives.

Furthermore, improving supportive supervision for M&E systems in national polytechnics requires sufficient infrastructural facilities, which is a key function of mobility and participation in academic and extra-curricular activities by learners with disability. However, stakeholders should ensure that infrastructural facilities are provided to the institutions, based on needs that are established through M&E systems. Besides, the institutions need to establish a nominal number of facilities relevant to learners with various forms of disability, including visual, audio, and speech; thereby correct the notion that attention and resources have been skewed in favor of learners with physical forms of disability (upper and lower limbs).

Providing infrastructural facilities for learners with disability is a capital-intensive undertaking. Due to resource constraints, no institution can construct, procure or install infrastructural facilities every year. Thus, a proper maintenance plan is important for keeping existing infrastructural facilities functional and supportive to learners with disability at a relatively lower cost. In view of this, the institutions should focus on improving their facility maintenance programs, particularly by seeking more funding from the government as well as mobilizing additional resources through internal revenue sources and where possible, mobilize external resources from development agencies to supplement government funding. Keeping infrastructural facilities in good condition is important for encouraging 'consistent' utilization by learners with disability, which in turn, is likely to facilitate participation in various learning and extra-curricular activities. Again, formulating maintenance plans is important for avoiding the cost of replacing facilities that break down, as well as encouraging consistent utilization by learners with disability. Supportive supervision for M&E systems may further be improved by putting in place a coordination system to ensure that all departments benefit from maintenance plans.

Strengthening supportive supervision for M&E systems also require appropriate measures ensuring that infrastructural facilities meet quality and safety standards to encourage utilization by learners. This would require national polytechnics to develop comprehensive plans, prioritizing maintenance of infrastructural facilities used by learners with disability. Developing and implementing such plans would ensure that all infrastructural facilities are maintained regularly; as well as kept functional in accordance with safety standards and supportive to learners with disability.

Finally, stakeholders should consider various options, when tackling the issues. For instance, the Ministry of Education should consider increasing budgetary allocations to national polytechnics, encouraging the institutions to generate own resources, as well as encouraging, through favorable taxation policies, non-governmental agencies to establish and equip TVET centres to provide opportunity to learners whose needs may not be met by national polytechnics.

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