Chapter 9:

Learner Support in The University of Rwanda's Distance Training Programme: Current Practices and Future Perspectives[1]

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Introduction and background

In his keynote address at the 2013 DETA[2] conference, Bob Moon indicated that if Universal Primary Education (UPE) is to be achieved by 2015, there is a need for 1.7 million new teachers worldwide, and one million of these are needed in Africa. Referring to this challenge, Mays (2014) reports that many countries are unlikely to have met the goals set for Education for All (EFA) by 2015 and they are unlikely to do so even beyond this date using the traditional mode of full-time attendance at courses in a pre-service teacher education institution. This is one of the reasons why distance education, a relatively new mode of education, is increasingly used in many parts of the world for both pre- and in-service teacher education (Kwapong 2007; Abedi and Badragheh 2011; Papagianni and Eteokleous 2021), since it provides study opportunities for those who are not able to attend classes (Holmber, 1995). Similarly, distance education is cost-effective (Abedi and Badragheh 2011; Idrissi et al. 2021) and enables teacher-trainees to continue to meet professional and social commitments (Sharma 2000; Aydin and Erol 2021) and thus can 'reach large groups of teachers and

1 This paper is part of a wider study that culminated in a Ph.D. Dissertation presented by Irénée Ndayambaje to the Graduate School of Kenyatta University on 05th October 2016. The study was supervised by Prof. John Akulo Orodho and Dr. Norbert Ogeta, whereas Prof. Wenceslas Nzabalirwa, Prof. Jean Pierre Dusingizemungu, and Prof. Evode Mukama played the role of academic mentors. The fulfilment of this study was also possible because of the financial and administrative support of the Ministry of Education and the University of Rwanda College of Education, Rwanda.

2 Distance Education for Teacher Education in Africa.

have an impact on the development of national education systems' (Kwapong 2007: 224; Kamble et al. 2021). In 2001 the University of Rwanda's College of Education (UR-CE) introduced a distance education programme (DTP) as an alternative to the on-campus mode to offer in-service teacher education to under-qualified high school teachers[3]. In fact, the number of under-qualified teachers in Rwanda was too high (Rwanda Ministry of Education 1999) for them to be taken out of schools to be offered on-campus as there were no other teachers to replace them (Mukamusoni 2006).

The rationale for this study

Distance Education (DE) has been defined as a method of education in which the teacher and the learner are separated in time and/or space for some or all the time of study (Robinson and Latchem 2003; Abedi and Badragheh 2011; Süğümlü 2021). Because of this separation, Robinson and Latchem (2003: i) indicate that 'the learning materials take over some of the traditional role of the teacher', with printed material continuing to be the most used in many countries. However, as Kiymaz (2023) and Mensah et al. (2022) note, the support offered by the text is not sufficient, because written feedback may not be clear and engaging, and in case students find it difficult to understand, they have no one to go to for clarification. Therefore, as Rowntree (1992) argues, few learners can survive on materials alone. In addition, some DE scholars (for example, Roberts 2004; Gil-Jaurena 2014) argue that effective learner support is likely to lower the dropout rate and increase the pass rate, which are two challenges that DE programmes are faced with.

A few studies have been conducted on the distance education programme of the University of Rwanda's College of Education. These include a 'descriptive qualitative case study' (Mukamusoni 2006) and a multi-country assessment of the use of DE and ICTs in education with a focus on Rwanda, by the Joint International Council of Distance Education (ICDE) and the World Bank (Rumble 2003), whose report allocates three out of 117 pages to the programme. There has also been a mid-term review of the first intake of the University of Rwanda's Distance Training Programme (Pennells and Coldevin 2003) and a short review of the programme by the South African Institute for Distance Education (SAIDE) in 2006, which was reported on a single page (Mays 2006). A journal article was also published focusing on the mode of operation of the DTP (Ndayambaje, Bimenyimana, and Ndahayo 2013). A more extensive study is the PhD research by Sibomana (2014), which analysed

3 These teachers are those whose qualification does not go beyond high school certificates.

the materials used by the DTP programme to train high school English teachers. Two journal articles have been published from this study focusing on pedagogy for teaching writing through the distance education programme (Niyibizi, Sibomana and Perumal 2019) and pedagogy for designing learning activities for distance education programmes (Sibomana 2020). These studies evaluated and focused on different aspects of the programme but we still observe a paucity of studies which investigated the kind of learner support that is available for the teacher-trainees in this DTP programme, and yet learner support constitutes a very important element of distance education (Roberts 2004; Gil-Jaurena 2014).

Therefore, it is important to investigate the kind of learner support that is available for the University of Rwanda's DTP programme, mainly because (i) the drop-out rate was revealed to be high in this programme (Ndayambaje 2016). In this regard, more than half of the students who enrolled in the DTP intakes of 2009, 2011, 2013, and 2014 dropped out before completion of the programme (Ndayambaje 2016). In addition, Mbonyinshuti's (2012) study revealed that (ii) the teacher-trainees complained about insufficient or ineffective support from their tutors. Sibomana (2014) pointed to (iii) organisational problems in the programme as one of the challenges to their learning, while all the studies conducted on this programme identified (iv) some limitations in the aspects of the programme which they focused on (Pennells and Coldevin 2003; Rumble 2003; Mukamusoni 2006; Mays 2006; Sibomana 2014). It is believed that the findings from all these research studies inform and inspire education policy makers in Rwanda and in other developing countries in Africa and elsewhere, which are still lagging behind in DE development and offer opportunities to compare Africa with the developed world (Moyo 2003; Leary and Berge 2007). Furthermore, Biao (2012) pointed to the lack of personnel with knowledge and experience in the philosophy, principles, and methods of distance education.

It is against this background that this chapter explores the learner support model which is established for the University of Rwanda's DTP teacher-trainees, to monitor and strengthen their effectiveness. Indeed, this study focused on the particular nature of connected learner support with internal efficiency, implying the measure of educational output and outcome (UNESCO 2014; Gil 2014; Cornali 2012). Internal efficiency is described as a diagnostic tool of education because it informs about strengths, weaknesses, leakages, and levels of attainment of the objectives based on the input-output relationship (Akinsolu 2012; Itaaga et al. 2014; Adeyemi and Adu 2012; Yunas 2014). In the context of this study, internal efficiency was restricted to educational outputs as expressed by the quantitative transition and flow rates of the learners (Hussain and Saeed 2012; Republic of South Africa 2013). The three indicators of internal efficiency that were considered in this chapter

are promotion, repetition, and dropout rates (UNESCO 2014 and Naravane 2012).
Hence, this chapter strives to analyse and give insights on the following research questions:

- What does distance education look like in Rwandan education, particularly the University of Rwanda's Distance Training Programme (DTP)?
- What kind of learner support promotes learning effectiveness and a high completion rate among the consecutive cohorts of the programme?
- To what extent have DE and DTP contributed to education and development in Rwanda?

Methodological perspectives

The study adopted the explanatory sequential mixed methods design which is a sub-type of a mixed methods research design (Creswell and Clark 2011; Creswell 2012). According to Creswell (2012), the explanatory sequential mixed methods design is a type of correlation design that first associates variables and thereafter correlates them to determine the extent to which changes in one variable are reflected in the other. From a target population of 1 346, purposive and stratified random sampling techniques enabled the researchers to reach a sample of 315 subjects including students and staff, as summarised in the table below:

Table 1: Population and sample sise

SN	Category	Total Population	Sample Size	% of the sample vis-à-vis the target population
1	Level II DTP students	1 090	251	23.03
2	Management of SODeL	2	2	100
3	SODeL administrative staff	9	2	22.22
4	UR-CE academic staff	181	42	23.20

5	Management of UR-CE	1	1	100
6	DTP regional coordinators	4	4	100
7	Heads of provincial DTP study centres	6	1	16.66
8	DTP tutors	53	12	22.64
	Total	**1 346**	**315**	**23.40**

Source: Ndayambaje (2016)

The following data collection instruments were used in this study: learner support questionnaires, an observation checklist, an interview guide, and document analysis. Content validity was established by experts' appraisal (Amin 2005). Cronbach's Alpha reliability tests produced 0.856 and 0.924 respectively for the learner support questionnaire for staff and DTP students. Quantitative data were analysed and presented in the form of tables. Analysis was based on descriptive statistics (Mean Scores) and regression outputs (Beta and P-values) (Orodho et al. 2016; Christensen and Stoup 1991). Qualitative data analysis used thematic analysis, tally method, and quick impressive summary and reporting in narrative form (Orodho et al. 2016).

Distance education in Rwanda and DTP at the University of Rwanda

Distance education has been identified as an important mode of teaching and learning in the Rwandan education system (Rwanda Ministry of Education 2003), and this has resulted in the establishment of the Department of ICT in Education and Open Distance and e-Learning in the Rwanda Education Board (REB)[4], as well as the School of Open and Distance Learning within the University of Rwanda's College of Education. This school aims to respond to the college's mission by making its scholarship accessible to the wider community, providing high quality, flexible, part-time education tailored for adults to complement the college's core mission[5].

4 Retrieved from http://www.mineduc.gov.rw/spip.php?article10, accessed on 22 October 2014

5 Retrieved from http://www.ce.ur.ac.rw/?academic/schools/school-of-open-and-distance-learning.php, accessed on 07 October 2014.

Learner and learning support in UR-CE's distance training programme

Learner support was developed as a technical term to mean all potential activities that facilitate learning and learners' well-being (Tait 2003; Thorpe 2002). It also ensures that distance learners overcome barriers throughout the learning process (Keegan 2002; Erradu 2012). According to Keegan (2002: page number), 'the term "student support services" is used for those parts of a distance or electronic learning course which are additional to the provision of course content'. These student support services can be either 'learner support' or 'learning support' (Welch and Reed, 2005). Brindley, Walti, and Zawacki-Richter (2004) indicate that learner support involves interactive activities and services meant to support and facilitate the learning process. This includes 'tutoring and teaching, counselling and advising and related services, and administrative activities in service to learners such as admission and registration' (reference needed).

The learner support in the Rwandan context, particularly at the University of Rwanda, includes the following:

- **Learner support 1:** Learners' accessibility to the course modules: the first support is to enable the distance training programme teacher trainees to access the course content, which is presented in the form of modules, in printed form and online, on the University of Rwanda's e-Learning platform.
- **Learner support 2:** Peer support (if this is organised): this is a form of learning encouraged to take place. Learners are advised to learn in pairs as per their convenience (e.g., proximity). This learning strategy helps avoid the feeling of isolation, boosts performance, and reduces dropouts.
- **Learner support 3:** Phone/sms/calls and charts with lecturers/facilitators: With the advancement in terms of access to mobile and mobile applications especially on smart phones, individuals/groups of DPT learners are now connected with each other and respective module facilitators. Consequently, instead of waiting to raise their academic or administrative concerns during weekend tutorials or face-to-face sessions, where the need arises these students call/sms/text the facilitator who is also expected to provide relatively quick feedback. Live synchronous sessions using applications such as Zoom, Google Meet, and MS Teams are also encouraged.
- **Learner support 4*:*** Weekend tutorial: these are activities organised as part of the continued learning support. They are organised towards the end of the week (weekend). They are also

used to administer continuous assessment tests, supervise group activities, and provide feedback to students.

- **Learner support 5:** Face-to-face sessions: whereas learning under the Distance Training Programme is primarily delivered through self-study modules, learners are given the opportunity to meet facilitators/module writers to be assisted in building meaning around the explored concepts and theories, engage in peer-to-peer discussions, alleviate misconceptions, and help them practise their acquisition where applicable (e.g., practical laboratory demonstration for science related subjects). Considering the availability of the target group (in-service teachers) and the required length of this activity, face-to-face sessions take place during school holidays. Usually, face-to-face sessions precede end-of-module examinations.

The practices described above confirm what has been pointed out previously, that DE learners are separated from their teachers during most of their learning time and therefore rely on DE materials for learning. This separation leaves a learning gap which learning materials alone cannot fill. Therefore, learner support is intended to bridge this gap (Brindley et al. 2008) and help learners achieve the outcomes of the programme (Welch 2003) by making learning at a distance a more meaningful experience (Gil-Jaurena 2014) so that it matches the facilities which a face-to-face system provides for the success of its students (Keegan 2002). This suggests that learner support is an indispensable element in DE systems if these are to provide the same quality education as face-to-face ones. In other words, without (effective) learner support DE programmes may be rendering lip service to and/or deceiving their learners. For the Rwandan DTP students, particularly at the University of Rwanda, the level of quality support is described in the next sections.

The quality of learner support in UR-CE's DTP

As has been pointed out previously, various learner and learning support types are provided by the UR-CE DTP of which the effectiveness is explored below.

Access to modules and other instructional resources

Table 2: Availability, access, and adequacy of DTP modules and other instructional resources as perceived by staff

SN	Statement	N Valid	SA	%	A	%	U	%	D	%	SD	%	Mean	Std. Dev.
1	Use of experts in module writing	51	29	56.86	19	37.3	3	5.882	0	0	0	0	4.51	0.61
2	Peer review of modules	51	18	35.29	24	47.1	7	13.73	2	3.92	0	0	4.14	0.8
3	Content coverage	51	16	31.37	27	52.9	6	11.76	2	3.92	0	0	4.12	0.77
4	Continuous revision of modules	51	7	13.73	22	43.1	7	13.73	12	23.53	3	5.88	3.35	1.16
5	Supplementary teaching-learning resources	51	3	5.882	14	27.5	10	19.61	18	35.29	6	11.76	2.8	1.15

Source: Ndayambaje (2016)

The data in Table 2 show that DTP module production goes through a quality assurance process to ensure that the study materials address the needs of the beneficiaries. This was supported by staff who agreed that DTP modules are written by experts in the subject content (Mean = 4.51, Std. Dev. = 0.61); undergo a peer review process (Mean = 4.14, Std. Dev.= 0.80) and cover the necessary content (Mean = 4.12, Std. Dev. = 0.77). Nonetheless, the respondents were undecided about regular revision of DTP modules (Mean = 3.35, Std. Dev. = 1.16) and the adequacy of the required teaching-learning resources in study centres (Mean = 2.80, Std. Dev. = 1.15). Thus, the relevance of these modules over time can be called into question.

To explore instructional resources more, 251 Level II DTP students attempted eighteen questions on the availability, access, and adequacy of DTP instructional resources to supplement the responses from the staff members. Table 3 summarises their answers in terms of frequencies, percentages, mean scores, and standard deviation (Std. Dev.) per statement. The statements were ranked in descending order based on the magnitude of their mean scores.

Table 3: Availability, access, and adequacy of DTP instructional resources as perceived by DTP students

SN	Statement	N Valid	SA	%	A	%	U	%	D	%	SD	%	Mean	Std. Dev.
1	Review questions	249	102	40.96	119	47.8	12	4.82	13	5.22	3	1.2	4.22	0.85
2	Availability of learning strategies in the modules	250	94	37.6	125	50	19	7.6	10	4	2	0.8	4.2	0.81
3	Learning objectives	248	88	35.48	117	47.2	16	6.45	22	8.87	5	2.02	4.05	0.98
4	Quality module layout	251	58	23.11	129	51.4	29	11.55	27	10.76	8	3.19	3.8	1.01
5	Resources for learning	251	63	25.1	124	49.4	25	9.96	26	10.36	13	5.18	3.79	1.09
6	Simple language	251	53	21.12	135	53.8	23	9.16	29	11.55	11	4.38	3.76	1.05
7	Illustrations	250	61	24.4	113	45.2	31	12.4	27	10.8	18	7.2	3.69	1.16
8	Modules are not heavy	251	52	20.72	97	38.7	36	14.34	45	17.93	21	8.37	3.45	1.24
9	Detailed content	249	30	12.05	101	40.6	37	14.86	62	24.9	19	7.63	3.24	1.18
10	Getting required number of modules	250	55	22	83	33.2	21	8.4	42	16.8	49	19.6	3.21	1.46
11	Opportunity for feedback on the content of modules	251	39	15.54	78	31.1	22	8.76	47	18.73	65	25.9	2.92	1.47
12	Training on how to use the Internet	251	13	5.18	72	28.7	23	9.16	52	20.72	91	36.25	2.46	1.37
13	Access to E-resources	247	8	3.24	47	19	45	18.22	73	29.55	74	29.96	2.36	1.19
14	Provision for additional resources for learning	249	13	5.22	24	9.64	65	26.1	67	26.91	80	32.13	2.29	1.17
15	Access to the computer lab	250	16	6.4	26	10.4	20	8	70	28	118	47.2	2.01	1.25
16	Timely distribution of modules	250	5	2	35	14	20	8	70	28	120	48	1.94	1.14
17	Access to the library	245	10	4.08	24	9.8	25	10.2	57	23.27	129	52.65	1.89	1.18
18	Practice in science laboratories	247	8	3.24	20	8.1	34	13.77	59	23.89	126	51.01	1.89	1.12

Source: Ndayambaje (2016)

Table 3 describes the perceptions of 251 Level II DTP students on their experiences in relation to instructional resources under DTP. The analysis of the data in Table 3 displayed three major emphases.

Emphasis 1: The quality assurance process employed in the DTP module production

DTP students agreed that the modules undergo review processes (Mean = 4.22, Std. Dev. = 0.85), introduce effective learning strategies to students (Mean = 4.20, Std. Dev. = 0.81), and present clear learning objectives (Mean = 4.05, Std. Dev. = 0.98). The confirmation of the quality of DTP modules by the students might be connected with the proven working experience of the module writers who are experienced academic staff from the University of Rwanda's College of Education.

To triangulate this information with DTP students, the learner support interview enabled the research team to gather qualitative data. On the prevalence of the use of printed modules as instructional resources under DTP, the interviewee coded R5LSI (2016), indicated that:

> *the print modules have actually remained the only learning tool that can guarantee that our students have received basic learning resources.*

However, it was reported that the DTP modules were not revised on a regular basis, and one of the justifications was highlighted by an academic staff member as follows:

> *the module production process is not only assiduous but also costly to the institution... Therefore, the annual revision is almost not possible. It takes about 2 to 3 years to come up with a new version of the module - if the revision is really required. In the meantime, whenever need be to supplement the distributed modules from the printing house, UR-CE lecturers supply separate hard copy texts that are photocopied and distributed to the students.* (R5LSI 2016)

The statement in the interview extract above demonstrates that, although modules have remained the dominant teaching-learning resource under DTP, their production requires a lot of resources on the institutional side.

Emphasis 2: Learning conditions for DTP students

Further analysis explored the learning conditions of DTP students. In this regard, as highlighted in Table 2 above, the student respondents disagreed with the statements that DTP students receive modules in time (Mean = 1.94, Std. Dev. = 1.14), get easy access to the library (Mean = 1.89, Std. Dev. = 1.18), and are given opportunity to practise their acquisitions in science laboratories (Mean = 1.18, Std. Dev. = 1.12). Also, the student respondents expressed the challenge in accessing the computer lab (Mean = 2.01, Std. Dev. = 1.25), acquiring additional materials to the printed modules whenever required (Mean = 2.29, Std. Dev. = 1.17), getting exposure to the electronic resources (Mean = 2.36, Std. Dev. = 1.19), and being trained to use internet as a resource for learning (Mean = 2.46, Std. Dev. = 1.37). These findings suggest that the learning conditions of UR-CE DTP students are not adequate.

Emphasis 3: DTP students' completion rates over three consecutive cohorts

In Tables 2 and 3 above, a linear regression analysis was used to answer the first research objective and the first research question to this study, which was to determine the influence of instructional resources on internal efficiency of the distance training programme for in-service secondary school teachers in Rwanda. Table 4 below illustrates the coefficients of the influence of instructional resources on internal efficiency, particularly on three aspects or models: the promotion rate, the repetition rate, and the drop-out rate amongst the three consecutive cohorts.

Table 4: Statistical measurements of the influence of instructional resources on promotion rate, the repetition rate, and the drop-out rate among DTP students

Dependant variable: internal efficiency				
		Model 1: Promotion rate	**Model 2: Repetition rate**	**Model 3: Dropout rate**
Predictor: instructional resources	**R**	0.232	0.055	0.611
	R^2	0.054	0.003	0.373
	p	0.405	0.846	0.016
	β	-5.403	-1.290	6.693
	Constant	83.515	30.426	-13.941

Significance level (p) < 0.05
Source: Ndayambaje (2016)

As highlighted in Table 4 above, the three models summarise the influence of instructional resources on three key components of internal efficiency (promotion, repetition, and dropout rate), which are combined to analyse the situation in DTP at the University of Rwanda. Details of each model is discussed in the following paragraphs:

Model 1: Influence of instructional resources (predictor) on promotion rate among UR-DTP students

The Pearson's r = 0.232 indicated that there was a weak positive linear relationship between instructional resources and the promotion rate of the DTP, whereas the computed R^2= 0.054 suggested that instructional resources explained only 5.4 per cent of the variations in the promotion rate of DTP. As model 1 shows, the P-Value was higher than the significance level, i.e., p = 0.405>0.05. It can, however, be predicted that one unit of change in instructional resources is expected to cause 5.403 decrease in the promotion rate of the DTP (Constant = 83.515, β = -5.403). Therefore, the interpretation of this finding in line with the objective of the study is that while Distance Education learners are independent in terms of learning pace and time, instructional resources are a key

determinant in their learning success as suggested by the low promotion rate. Thus, any successful Distance Education delivery should ensure that instructional resources are availed on time, are of high quality, and in various formats.

Model 2: Influence of instructional resources on repetition rate among UR-DTP students

The Pearson's r = 0.055 signified that there was a very weak positive correlation between instructional resources and repetition rate of DTP, while $R^2 = 0.003$ entailed that instructional resources explained only 0.3 per cent of the variations in repetition rate under DTP. The data of Model 2 informed that the computed P-value was greater than the significance level, i.e., $p = 0.846 > 0.05$. As per the same model, for every unit change in instructional resources, a 1.290 decrease in repetition rate of DTP is expected (Constant = 30.426, β = -1.290). Based on these results, it appears that instructional resources contribute to adequate and quality learning and counteract the occurrence of high repetition rate cases.

Model 3: Influence of instructional resources (predictor) on dropout rate among UR-DTP students

The Pearson's r = 0.611 suggested that there was a moderate positive correlation between instructional resources and dropout rate among UR-DTP students. The $R^2 = 0.373$ indicated that instructional resources accounted for 37.3 per cent of the variations in dropout rate under DTP. As that model indicates, there was a statistically significant influence of instructional resources on dropout rate of DTP because the computed P-Value was less than 0.05 significance level, i.e., $p = 0.016 < 0.05$. Also, for one unit change in instructional resources, a 6.693-unit increase in dropout rate is predicted and the total absence of instructional resources would have a 13.941 negative effect on dropout rate of DTP (Constant = -13.941, β = 6.693). Hence, in the context of the present study, by substituting the values provided by Model 3, the regression equation = $\alpha + \beta x_1 + e_t$ becomes = -13.941 + 6.693 Instructional resources + e_t. According to these results, dropout rates in distance education can be curbed through availability, accessibility, adequacy, and effective use of instructional resources.

In this chapter, the influence of instructional resources on promotion, repetition, and dropout

rate was analysed over four consecutive cohorts: 2009–2010, 2011–2012, 2013–2014, and 2014–2015. A clear picture from these four cohorts is presented as follows:

Table5: Internal Efficiency of DTP across the academic Years 2009-2010, 2011-2012, 2013-2014 and 2014-2105

	2009–2010	2011–2012	2013–2014	2014–2015
Promotion rate	65.79%	78.50%	65.90%	58.38%
Repetition rate	21.09%	11.90%	32.63%	26.27%
Dropout rate	13.12%	9.60%	1.47%	15.36%

Source: Ndayambaje (2016)

The data in Table 5 indicate internal efficiency of the DTP across combinations for the academic years 2009–2010, 2011–2012, 2013–2014, and 2014–2015. These data indicate that considering the four academic years, the highest promotion rate was registered in the academic year 2011–2012 (78.50 per cent). The highest number of repeaters was recorded in the academic year 2013–2014 when the repetition rate was 32.63 per cent. In terms of dropout rate, the highest dropout rate was registered in the academic year 2014–2015 (15.36 per cent). Based on the findings from the four cohorts, it is evident that UR-CE DTP still has areas for improvement expressed in terms of repetition and dropout rates, calling for a reboot of learner support strategies including the instructional resources.

UR-DTP students and DTP managers' perception about the influence of instructional resources on internal efficiency of DTP at UR-CE.

In addition to the quantitative analysis, the qualitative data that was obtained from open-ended questions in learner support questionnaires, the learner support observation checklist, and the learner support interview guide revealed more about the influence of instructional resources on internal efficiency of the DTP at UR-CE. In this regard, the major intervention that respondents

expect from the Ministry of Education in Rwanda (MINEDUC) is the availability of libraries in study centres. This idea was supported by DTP students (n=14, 5.58 per cent), DTP tutors (n=2, 16.76 per cent), as well as UR-CE academic staff (n=5, 13.51 per cent). Also, DTP students requested MINEDUC to increase their financial support so that they could afford the cost of modules (n=22, 8.76 per cent). Further, the students requested individual laptops for DTP students (n=1, 0.4 per cent), as well as setting up highly equipped science laboratories (n=1, 0.4 per cent). DTP tutors emphasised the need for the availability of internet connectivity in computer laboratories at the DTP study centres (n=3, 25 per cent).

As for the situation in the distance training centres of the University of Rwanda-College of Education (UR-CE), the respondents strongly raised the issue of setting up libraries with relevant textbooks. This idea was supported by DTP students (n=21, 8.36 per cent), UR-CE academic staff (n=3, 8.11 per cent), as well as DTP tutors (n=2, 16.66 per cent). The DTP students emphasised that UR-CE should ensure the distribution of modules in time (n=91, 36.25 per cent), reduce the cost of modules (n = 21, 8.37 per cent), facilitate DTP students to access the learning resources (n = 4, 1.59 per cent), and connect computer laboratories to the internet (n=3, 1.2 per cent). On behalf of the School of Open, Distance and e-Learning (SODeL), administrative staff expressed the need for adequate training of module writers (n=1, 50 per cent), whereas UR-CE academic staff (n=8, 21.62 per cent) recommended that module writing should be remunerated as a part-time activity for academic staff. DTP managers also emphasised the shift to the digital mode of delivery (n=3, 8.11 per cent).

To emphasise motivation for academic lecturers who contribute to module writing, the extract below from the R3LSI interviewee expressed it as follows:

> *With the former KIE, module writers used to be paid... Now, with UR, they are saying that everything is part of the workload. ...this will not only affect the quality of these modules but also the smooth running of DTP activities... As a current and typical example, this semester, in order not to delay the students' progress again, DTP activities went ahead yet some modules were not yet available...* (R3LSI 2016).

Similarly, DTP students complained about the non-distribution of modules in time. Participant R2LSI who belonged to the 2015 cohort presented her complaint as follows:

> *These issues of non-timely distribution of modules have arisen with the University of Rwanda (UR)... Can you imagine that the whole academic year of 2015, there was no learning taking place under DTP because modules could not be availed because of UR tender processes...* (R2LSI 2016).

The reported direct quotes from the interviewees R2LSI and R3LSI about the reasons behind the delay of module distribution indicate two managerial problems that may impact on internal efficiency. The first is bureaucracy and the second is remuneration of the module writers.

Furthermore, the issue of dominance of printed, hard copy modules was reiterated by UR-DTP managers. However, they indicated that the intention was to go for digital content to meet the current trends in distance education delivery. In an interview with R8LSI, from the 2016 cohort, it was indicated that:

> *Everything needs a plan and resources... As we speak, we have full hope to go digital... One, there is a task force working on a national policy on Open and Distance Learning (ODL) at national level. Two, the University of Rwanda was commissioned to ensure more access and cost-effectiveness whereby 50% of the students should be under ODL soon. Three, our school, SODeL, is being empowered in terms of funds and human resources... So, there is a full hope to modernise DTP, which looks not meeting the current ICT developments...* (R8LSI 2016).

The picture drawn from R8LSI's (2016) quote shows that there have been some factors that have hindered the embracing of modern ICT trends in DTP. Among them is a lack of an appropriate policy framework, low managerial eagerness, and limited institutional capacity to embark on digitisation of content and teaching, as well as learning and assessment processes. The following section builds on the current practices to shape the future perspectives.

Current trends within UR-CE DTP

The current trend based on a comprehensive analysis of both quantitative and qualitative data emphasised two key facts. The first one concentrated on DTP modules that were used as basic instructional resources under UR-CE DTP. In this regard, respondents demonstrated a positive perception around the quality assurance in the DTP module production process. Such quality of

DTP modules as basic instructional resources would not only support effective learning as argued by Brindley, Walti, and Zawacki-Richter (2004) and Suhaida, Nurfaizah, and Moshinin (2021), but also preserve internal efficiency. However, the trend revealed a higher level of dropout among DTP students, whereby the assertion tended to converge with the arguments of Park and Choi (2009) and Huo, Messenger, and Miller (2022), that student dropouts are closely linked to a lack of relevance, poor appreciation, and less satisfaction with regard to the content of study materials.

In addition, the current trend in UR-DTP relies heavily on printed DTP modules as the main instructional resources. Such a reliance tended to have a negative influence on the internal efficiency of the DTP, simply because DTP modules were not distributed in time. This resonates with the warning from multiple sources, such as Kibuuka (2010), Willis (1993), Krishnan (2012), and Abou-Khalil et al. (2021) that the non-availability of learning resources constituted an enormous hindering factor for the students' learning process. Also, DTP modules were not revised on a regular basis and module writers were coerced rather than motivated to write these modules. The implication of this is that the quality of DTP modules may be compromised in the long run, causing a turndown of user satisfaction. This tends to align with Tallman (1994), Park and Choi (2009), and Amare and Simonova (2021) who established a high correlation between timely access to quality learning resources and dropout rates.

Furthermore, the current trend in the UR-DTP programme pointed to insufficient auxiliary resources for teaching and learning across UR-Study Centres, which are distributed across the country. This tends to be in congruence with the observations by Guloba and colleagues (2010) and Jacob, Jegede, and Musa (2021) that inadequacy of learning resources affects the quality of educational provision. Indeed, the scrutiny of the findings in this chapter portrayed the inadequacy of supplementary learning resources as a hindering factor to internal efficiency of the DTP, as supported by the arguments of Donkor (2010) and Konovalenko et al. (2021) that the absence of adequate learning resources obstructs the fulfilment of practical-oriented and plenary learning needs.

Future perspectives on the Distance Training Programme in Rwanda and in Africa

UR-CE DTP heavily relies on printed material, and it has been more or less successful. However, this is not sustainable in the long run, with the increasing role of ICT in education. Thus, the future

perspectives of distance education aspire to rely on digital content. DTP managers expressed the willingness to modernise the DTP with the addition of online learning. With this new perspective, it is globally believed that the introduction of digital learning patterns would reduce the complaints around costs and delays associated with printed material and would modernise the teaching-learning conditions supported by Mji and Makgato (2006) and Hafeez (2021). Such a new perspective will increase the level of internal efficiency of the DTP in Rwanda and other forms of distance education in different countries of Africa and other continents.

Indeed, the future trend of distance education embraces online learning/teaching, with digital content. Such a new trend was embraced by the University of Rwanda College of Education since 2013, and from 2017 it was reinforced and strengthened. With the eruption of the COVID-19 pandemic in different corners of Africa and the world, online learning is increasingly becoming imperative as the best alternative to ensure the continuity of learning and teaching.

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