

Distance Training Programme (DTP) students' and DTP administration managers' perceptions on mobile SMS technology to support offline distance learning communications activity at the University of Rwanda.

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Abstract

The paper reports on surveys of Distance Training Programme (DTP) students' and DTP administration managers' perceptions on mobile SMS technology to support offline distance learning communications activity at the University of Rwanda, College of Education (UR-CE), and the willingness of DTP students and managers to incorporate an SMS communication at the UR-CE into DTP Programme. Methods used were questionnaires and interviews with DTP students and DTP management staff. The paper concludes that majority of respondents surveyed indicated the need to associate a bulk-SMS to alert DTP students on the availability of printed notices, examination results, assignment submission due dates, etc. Mobile SMS could be used as alerts to maintain and support a timely contact communication to students taking offline distance learning education at the UR-CE.

Keywords: DTP students, Distance Training Programme, Mobile SMS, UR-CE.

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1. Introduction

Offline distance education in contrast to online distance education is defined by the education process taking place off-campus, and at the same time, not applying computer network technology such as World Wide Web, video conferencing, etc (Nonyongo, E., Mabusela, K., & Monene, V., 2005).

The DTP at UR-CE started in 2001, with ten learning centres grouped into four regional administration centres. The DTP students are fulltime employed secondary school teachers and most of them live in the countryside without Internet access and with limited electricity supply while others have Internet access with weak coverage signals and limited time of access. Every month, a residential weekend tutorial is organized at the ten DTP learning centres (in Figure 1) to allow students to meet with Subject Tutors. Students study through self-instructional materials module with other academic support such as tutoring, face to face schedule, etc. Currently the subjects taught are grouped into three combinations (www.ce.ur.ac.rw):

- MPE: Mathematics, Physics, Education
- BCE: Biology, Chemistry, Education
- FEE: French, English, Education

2. Literature review

There is an educational communication use of SMS information systems to enhance communications between students and staff, and to meet up other communication needs. The isolation of offline distance students to the university community could be minimized by a direct university communication system including reminders to complete assignments (Richardson & Lenarcic, 2009). While different designs of Learning Management Systems are developed to support the use of SMS into higher learning institutions, most of them are designed to respond to online education needs by integrating SMS application into existing Learning Management Systems as well as to share resources via smart phone and tablets (Walsh, 2009) or arranging SMS group discussions among a few number of students and staff employees depending on cell phone features (Tunjera, Mukabeta, Zivanai, 2013). Studies cited by (Nwagwu, 2011) provide a thoughtful SMS use to meet educational communication needs at different Universities in different countries:

- In the Philippines, SMS is students' favorite means of communication with faculty and other students cited by (Nwagwu, 2011).
- A study at the University of South Africa (Nonyongo, E. Et al. 2011) established the critical role of SMS by students in South Africa.
- The Makerere University in Uganda acquired a software called Broadcast System (Kajumbulla, R., 2007). , similar to the Chikka Network in the Philippines cited by (Nwagwu, 2011), which administers SMS instant messaging to mobile phones or email addresses of students.
- At the University of Ibadan in Nigeria, postgraduate applicants are notified of the outcome of their applications through bulk SMS; but SMS appears to be working better in the Universities in scheduling of meetings and reminders about the meetings, and related activities (Nwagwu, 2011).

Other results by (Nwagwu, 2011) is the large number of students who reported using the SMS technology to make contact with their lecturers while it is not clear what types of information students communicate with their lecturers using SMS. It is also important to understand the direction of this communication. A two way communication to increase interactivity of students to tutors and students to students is a suggestion by (Ismail & Azizan, 2012).

3. Research question

“What will be the impact of utilizing a new way of communication through cellular phones in addition to printed notices for delivering college contact communications to the DTP students?” guided the interview/questionnaire preparation for gathering points of view from DTP students and DTP management staff. It is hypothesized that the current communication tools are late to deliver contact communication to DTP students. Collected views were examined and compared with effectiveness of associating a Mobile SMS alert to improve and sustain an efficient communication in support of offline distance learning to greatly improve the administration communication channels towards DTP students against printed notices and verbal announcement.

4. Methodology

After introducing ourselves to the UR-CE Managers and DTP management staff, a questionnaire and/or interview in addition to on field observations as study tools were applied to gather data and points of view from a sample participating population towards the beneficiaries of the Mobile SMS Communication in Support of Offline Distance learning system. The survey population included the management staff of DTP and the level-II (second year) students of Distance Training Programme at the four regional learning centres namely RWAMAGANA, HUYE, NYUNDO, and KIGALI. There are 1092 level-II students registered for the academic year 2013-2014 in DTP at the University of Rwanda, College of Education (UR-CE data, registrar office, April 2014). Since (Mohammad, 2011) cited that Yamane (1967) provides a simplified formula to calculate sample sizes according to the following law:

$$N = \frac{NP}{1 + (NP * e^2)} \dots\dots\dots (1)$$

Where:

N: Sample size,

NP: Is the size of population,

e: Is the level of precision errors= 0.05,

From the Eq (1), a sample size (N) of 294 level-II DTP students were invited to participate during a face to face sessions dated from April 16th to April 26th, 2014. Students were surveyed using the questionnaire tool. The choice of level-II DTP students focused on their experience on UR-CE distance training programme. This study borrows some methods as applied by (Nonyongo, E., Mabusela, K., & Monene, V., 2005; Mohammad, 2011). Table 1 shows the population distribution in terms of age, gender, and regional learning centres.

The percentage of DTP students registered at different learning centres were used to distribute the questionnaire where 44 copies, 71 copies, 86 copies, and 93 copies of the questionnaire were distributed to the DTP students of Rwamagana, Butare, Nyundo and Kigali regional learning

centres, respectively. Access to respondents was facilitated by the regional coordinators who provided the researcher the time to talk and introduce the research survey activity to the DTP students.

The interviews were addressed to the Directorate of Centre for Open, Distance and e-Learning (CODEL), Dean, faculty of Education office, Dean, faculty of Science office and Dean of Art and Languages office. The choice of these offices was made based on their involvement in the DTP programme as administration management office for CODEL and Academic management for Deans' Offices; as DTP students are taking subject materials from these three faculties under the CODEL administration, coordination and management.

The statistical analysis of collected data was done using the Statistical Package for Social Sciences (SPSS). Different frequency tables were prepared to illustrate the views of participants in relation to each question towards the use of SMS communication in DTP at UR-CE; as applied by (Mohammad, 2011; Kajumbula, 2007; Nonyongo, Mabusela, & Monene, V., 2005).

5. Results and Discussion

Discussed in this section is the DTP students' access to telecommunication infrastructure and services, strengths and weaknesses of current communication means, and the value added when Mobile SMS is applied. The accepted communication is done by passing all communiqués through the CODEL office, then forwarding the same to regional centre coordinator, before it reaches the DTP students either by printed notice board, or via e-mail distribution, and/or verbal communication as it was reported during interviews held with the Dean, faculty of science, Dean, faculty of Education, and the Director of CODEL office, and witnessed by researcher during onsite survey.

5.1. Access to telecommunication infrastructure and service

Having a mobile phone

Table 2 shows views of respondents on access to ICT infrastructure facilities such mobile phone, e-mail communication, electricity, etc. 73.4% own standard cell phones against 23.0% who own smart phones; while 3.7 per cent own both smart and standard cell phones. Also note that 59.8% charge their mobile phones at their residential houses against 17.6% that charge the phone batteries at their work places. 22.5% charge their phone batteries at nearby business centres. That is 22.5% of DTP students could not have access to electricity at their work places or at their residential houses. 61.9% of respondents confirmed having accessed the website from their mobile phones, against 38.1% who responded negatively toward such a question. And 95.5% have a personal e-mail account. With basic mobile phones (Deutsche Welle, May 2014), the DTP students are browsing the website via mobile phones.

Engagement with social media

Table 3 presents the social media engagement level of the DTP students. 73.8% are using any of the social media application/website, mostly on Facebook; 16% are using Twitter, 13.1 % on WhatsApp,

Youtube 9.0 per cent, 1.6 per cent of Viber and Google+ accounting for 2.5 per cent on the social media engagement against 25.4% not using any social media application/website.

Familiarity with Short Message Service (SMS)

Table 4 summarizes the experience with SMS messages by the DTP students at UR-CE distance training programme. A total number of 217 (88.9%) used to send a short message (SMS) as a communication means to get information related to their studies in DTP programme at UR-CE from the third person. 225 (92.6%) declared to have received an SMS message against 18 (7.4%) who did not receive any SMS message for education purpose.

Table 5 shows the extent or reasons to which DTP students are desire to be reminded and provided with timely communication. Reasons include students' lack of motivation, a sense of isolation and a need for greater and improved communication. A range of social networking software designed with the aim of creating a more engaging environment; specifically to encourage greater communication and connectivity between distance education students; help overcome the isolation often noted by distance education students (Rachel, Bob, & Lyn, December 2011). On their own, 63.9% DTP students used to set a reminder alarm for weekend tutorial date. 46.3% set alarm reminder for assignment participation and 17.2% had at some point forgotten the assignment submission due date.

5.2. DTP student Access to UR-CE communiqué

Table 6 illustrates tools used to deliver a communiqué to DTP student at UR-CE and the associated efficiency in percentage. Access to printed notices accounts for 85.7% , 72.1% via e-mails, 23.0% radio broadcasting, 4.5% telephone calls, 3.3% Television and 3.3% apply for a verbal communication point of view of students. Here verbal communications are made through students-staff meetings during weekend tutorials and face to face sessions as mentioned by the director of Centre for Open, Distance and e-Learning (CODEL) during the interview sessions and as well as observed by the researcher during face to face sessions. The small percentage perception of DTP students toward verbal communication is due to the fact that it is accompanied by printed communiqués/notices.

5.3. Comparison of the above communication means against Mobile SMS messages.

The strengths and weaknesses of the DTP communication channels in Table 7 and Table 8 illustrate the need of a direct and timely communication (Robert Newton, 2007) in Distance Training Programme at the University of Rwanda, College of Education is demonstrated by the DTP students' current choice of using phone calls and e-mails at the top of the Table 7, and the hereby percentages of mobile SMSs messages. The author (Rachel, Bob , & Lyn, December 2011), affirms that mobile SMS offers a powerful tool for improving distance education communication experience for all students, and SMS messages are becoming ubiquitous timely communication in comparison to any other communication service ever used in everyday life. The SMS technology is mature enough and the growing familiarity with the use of SMSs for banking services, money transfer via MTN mobile money and TIGO Cash supports the high consideration of DTP students favouring mobile SMSs compared to other available communication tools.

6. Conclusion

In this preliminary investigation, it was initially not clear how DTP students and DTP administrators regard the use of short message service on their mobile phones for education purposes. Clearly, there was a need to find out what DTP students think about using mobile SMS technology as a supportive communication tool for education access (Bilgin Avenoglu, 2005). Unlikely to the SMS communication experience, SMS is not recognized official communication channels into DTP as it is reported by the Director of CODEL and Dean of faculty of Science and Dean of faculty of Education. The desire to integrate SMS into DTP official communication channels is well thought-out positive by Director of CODEL, Dean of faculty of Science and the Dean of faculty of Education at UR-CE, and right in line with the college vision toward ICT use in education. Thus SMS could be advised as a communication tool to provide reminders and alerts until to be officially adopted. By introducing the computer based SMS application system with a two way communication attribute; DTP administration to DTP students and vice-versa; the mobile SMS would be made official communication tool to effectively support the DTP programme communication at UR-CE. Future work could include but not limited to propose the structural design of Mobile SMS Communication to support offline distance learning.

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Figures

Figure 1: Ten DTP learning centres (source:www.ce.ur.rw)



Tables

Table 1: Background Characteristics of the respondents (DTP students)

Background	Frequency	Percentage
Age		
20-24	10	4.1%
25-29	81	33.2%
30-34	59	24.2%
35-39	47	19.3%
40-44	29	11.9%
45-49	16	6.6%
>=50	2	0.8%
Sex		
Male	155	36.5%
Female	89	63.5%
Regional Centre		
• Rwamagana	44	18.0%
• Kigali	76	31.1%
• Butare	51	20.9%
• Nyundo	73	29.9%
	N=244	

Table 2: Experience with Mobile phone facilities

Experience	Frequency	Percentage
Mobile phone		
• Standard/feature cell phone	179	73.4%
• Smart phone	56	23.0%
• Both standard & smart phone	9	3.7%
Having an e-mail		
Yes	233	95.5%
No	11	4.5%
Browsing a website via mobile phone		
Yes	151	61.9%
No	93	38.1%
Access to electricity (mobile charging)		
• Residential house	146	59.8%
• Work place	43	17.6%
• Nearby business centre	55	22.5%
	N:244	

Table 3: Engagement in the use of Social media communication

Social media	Frequency	Percentage
Twitter		
Yes	39	16.0%
Missing value	205	84.0%
Facebook		
Yes	180	73.8%
Missing value	64	26.2%
WatsApp		
Yes	32	13.1%
Missing value	212	86.9%
Youtube		
Yes	22	9.0%
Missing value	222	91.0%
Viber		
Yes	4	1.6%
Missing value	240	98.4%
Google+		
Yes	6	2.5%
Missing value	238	97.5%
Not engaged in any social media activity		
Yes	62	25.4%
Missing value	182	74.6%
	N=244	

Table 4: Experience with Short Message Service

SMSs overviews in DTP programmes	Frequency	Percentage
SMSs daily utilization		
0	12	4.9%
1-5	144	59.0%
6-10	64	26.2%
11-15	19	7.8%
>16	5	2.0%
SMSs messages sent to DTP students are from:		
• Subject Tutor	29	11.9%
• DTP Regional Coordinator	77	31.6%
• Staff in DTP office at UR-CE	19	7.8%
• Student in Day programme	70	28.7%
• Student in DTP	201	82.4%
• did not receive an SMS	18	7.4%

SMSs messages sent by DTP students to:		
• Subject Tutor	48	19.7%
• DTP Regional Coordinator	84	34.4%
• Staff in DTP office at UR-CE	19	7.8%
• Student in Day programme	73	29.9%
• Student in DTP	205	84.0%
• Did not send an SMS	27	11.1%
	N=244	

Table 5: The Mobile phone on-alert

	Frequency	Percentages
Alarm for weekend tutorials		
Yes	156	63.9%
No	88	36.1%
Alarm for assignment		
Yes	113	46.3%
No	131	53.7%
Forgetting weekend tutorial date		
Yes	63	25.8%
No	181	74.2%
Forgetting Assignment due date		
Yes	42	17.2%
No	202	82.8%
	N=244	

Table 6: The available communication tools in use

	Frequency	Percentages
Access to notices from UR-CE		
Yes	233	95.5%
No	11	4.5%
Communication means,		
• Printed notice	209	85.7%
• E-mails	176	72.1%
• Radio Broadcasting	56	23.0%
• TV Broadcasting	8	3.3%
• Mobile Phone call	11	4.5%
• Verbal communication	8	3.3%
	N=244	

Table 7: Available Communication tools Vs Mobile SMSs

Label/Percentage choice to Communication tools		Percentage choice to mobile SMS messages
Phone call	44.3%	55.7%
e-mails	25.8%	74.2%
Printed notice	13.1%	86.9%
Radio broadcasting	13.1%	86.9%
TV announcement	11.9%	88.1%

Table 8: Strengths and weaknesses of current DTP communication channels

Communication channels	Strengths	Weaknesses
Printed notice,	<ul style="list-style-type: none"> • It last long, • Posted to all learning centres notice-board, 	<ul style="list-style-type: none"> • Students do not access them on time, as they are supposed to tutorial once a month.
e-mail,	<ul style="list-style-type: none"> • Reach to student mailbox on time, • Direct individual contact, 	<ul style="list-style-type: none"> • Weak coverage signals and limited time of access to Internet by DTP students,
Phone call,	<ul style="list-style-type: none"> • Direct individual contact, 	<ul style="list-style-type: none"> • A small number of DTP students might have access to information.
TV , Radio (broadcasting)	<ul style="list-style-type: none"> • Every DTP student might have access to post-radio. • Good coverage of radio broadcasting, 	<ul style="list-style-type: none"> • Many Radio stations (27) are operational, and it is not easy to choose which one to use. • DTP students are full employed teachers, thus they have limited time to enjoy radio.
Mobile SMS	<ul style="list-style-type: none"> • Direct individual contact, 	<ul style="list-style-type: none"> • Not regarded as official communication channel,