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Résumé de l'article

Les formations à distance semblent comporter de très nombreux avantages pour l'Afrique, où les systèmes d'éducation font face à une multitude de défis. Néanmoins, malgré le potentiel des formations à distance, la mise en place de ces dernières arrivent également avec son lot d'obstacles, comme par exemple l'équipement informatique inadéquat et les compétences professionnelles. Ce texte présente les résultats d'une étude longitudinale sur des formations à distances universitaires proposées à quelque 2416 étudiants en Afrique. À partir de l'analyse quantitative de questionnaires et de l'analyse qualitative d'entrevues, nous examinons comment les formations à distance sont en mesure de participer au développement professionnel d'étudiants d'Afrique. Nous avons aussi cherché à mieux comprendre les avantages et les défis rencontrés par les étudiants participant à de telles formations.

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Abstract

Distance Education (DE) holds particular promise for Africa, where higher education systems must cope with multiple constraints. However, there are many obstacles to the development of DE, including inadequate computer equipment and lack of professional skills. Against this background, this article presents the results of a longitudinal study on DE programs[1] offered to students in Africa. Using quantitative analyses of questionnaires and qualitative analyses of interviews, the contributions of DE to the professional development of Africans are examined in the aim of gaining a deeper understanding of the dynamics at play when students enroll in a DE program.

Keywords

distance education, Africa, higher education, professional development, enrollment

Résumé

Les formations à distance semblent comporter de très nombreux avantages pour l'Afrique, où les systèmes d'éducation font face à une multitude de défis. Néanmoins, malgré le potentiel des formations à distance, la mise en place de ces dernières arrivent également avec son lot d'obstacles, comme par exemple l'équipement informatique inadéquat et les compétences professionnelles. Ce texte présente les résultats d'une étude longitudinale sur des formations à distances universitaires proposées à quelque 2416 étudiants en Afrique[1]. À partir de l'analyse quantitative de questionnaires et de l'analyse qualitative d'entrevues, nous examinons comment les formations à distance sont en mesure de participer au développement professionnel d'étudiants d'Afrique. Nous avons aussi cherché à mieux comprendre les avantages et les défis rencontrés par les étudiants participant à de telles formations.

Mots-clés

formation à distance, Afrique, enseignement supérieur, développement professionnel, recrutement

Distance Education in Africa: A Longitudinal Study of the Perceptions of 2,416 Students

Distance education (DE) programs have made a significant contribution to the development of higher education, even though the progress made to date lags behind expectations (Altbach, Reisberg, & Rumbley, 2009). DE "refers to approaches to learning that focus on freeing learners from constraints of time and place while offering flexible learning opportunities […] to both individual home-based learners and groups of learners in remote classrooms" (UNESCO, 2010). They hold particular educational promise for Africa, where universities are facing many challenges such as rapidly expanding enrollment, tight budgets, overcrowded classrooms and dismal job prospects (Butcher, Latchem, Mawoyo, & Levey, 2011). As a result, university education in Africa is lagging far behind the rest of the world: although the gross university enrollment rate was 26% worldwide in 2007, it stood at only 6% in sub-Saharan Africa (UNESCO Institute for Statistics [UIS], 2010). In this perspective, DE is often perceived as a viable alternative. DE delivery systems allow larger numbers of people to study at lower cost than in face-to-face classrooms (Evoh, 2010). The spatial and temporal flexibility also encourage a diversity of candidates, from university freshmen to working professionals (Aderinoye, Siaciwena, & Wright, 2009). In socioprofessional terms, distance education can help mitigate a longstanding and problematic trend in Africa (Muhirwa, 2012), namely the flight of African professionals to the North once they graduate (World Bank, 2009). Called the "brain drain" (Freitas, Levatino, & Pécoud, 2012), this trend is sometimes voluntary and other times not, and it is encouraged by grants and scholarships that enable African students to pursue their studies in Western countries. Whereas the original purpose of this funding was to reinvest African skills at home, the actual result has been the reverse: African countries have been deprived of a qualified workforce (Tessema, 2010). In this respect, distance education can make a radical change, because it allows learners to enroll in programs administered from outside their sociocultural environment while remaining at home, facilitating skills reinvestment within local communities (Jacquinot, 1993; Moughli, Semporé, & Koné, 2008). DE therefore has instrumental potential for training a qualified African workforce, as well as socioprofessional potential for building a qualified African workforce (Mufutumari, 2010), which explains why it features prominently in the 2006–2015 Action Plan for higher education developed by *Seconde décennie de l'éducation pour l'Afrique* [second decade of education in Africa]. However, progress has been hampered by multiple obstructions: substandard computer equipment, disorganization, and lack of professional skills (Basaza, Milman, & Wright, 2010; Visser-Valfrey, Visser, & Moos, 2012).

Against this background, this article presents the results of a longitudinal study that targeted five objectives:

- Describe the sociological and technological profile of the participants
- Assess their motivations to take a DE program
- Identify the participants' representations of DE
- Identify the challenges involved in DE as well as the areas of satisfaction
- Identify the benefits derived by graduates from a DE program.

Method

Participants

As mentioned above, we surveyed two populations: 1750 students enrolled in a DE program and 666 recent graduates from a DE program. A total of 2,416 individuals participated in the survey (1,571 males and 845 females in each of three study years). In addition, 24 individuals (12 students and 12 graduates) were interviewed via Skype.

Procedure

To achieve the research objectives, two survey questionnaires were developed and administered during each of the three study years: one for students enrolled in a DE program and one for graduates of a DE program. In addition, telephone interviews (supported by Skype) were conducted in the second study year. For the data compilation, two separate populations were surveyed: students enrolled in a DE program during each of the three study years and students who had graduated from a DE program at the end of each of the three study years.

Analysis

The quantitative survey data were analyzed using SPSS version 20. Descriptive analyses as well as cross analyses of the data were conducted using a series of variables that were relevant to the research objectives. Some questionnaire items were designed to elicit open-ended responses, which were analyzed qualitatively using QDA Miner. The conducted interviews were also analyzed using QDA Miner. This allowed coding text segments for content analysis using an approach inspired by L'Écuyer (1990) and Huberman and Miles (1991, 1994).

Results

Sociological and technological profile of participants

In terms of place of residence, the surveyed population was majoritively representative of Africa: about 75% lived in the sub-Saharan region and 8% in the Maghreb. The other geographic regions represented were the Indian Ocean (6%), the Middle East (2.5%), the Caribbean islands (2%), Central and Eastern Europe (1%), and Asia-Pacific (<1%).

In terms of gender, despite the well-meaning and proactive policies of universities, women were largely underrepresented. In fact, as mentioned above, the distribution across all samples was about one-third women to two-thirds men.

In all samples, most participants were in the age range from 31 to 40 years (41–49% across study years), followed by 30 years or less (31–36%) and 41 years and older (15–22%). This distribution reflects the recruitment policies of the universities, which prefer younger students who at the same time already have some background in the study field.

A large percentage of respondents had earned a graduate university degree, and this percentage varied from one-third to over one-half across the samples. However, professional experience was relatively thin: half the respondents had less than five years' experience and almost 80% had less than 10 years' experience. In sum, in terms of sociological characteristics, we may consider that the participants entered the DE programs towards the start of their professional career, at an average age of 35 years, and many among them had earned a graduate university degree.

The technological profile of the respondents appeared to be related more to the year of graduation. For example, in the first two study years, about 75% of respondents said they had access to a computer at home, but this percentage rose to 94% in year three. A similar trend was found for Internet access at home, with about 50% for the first two years and 68% for the third. Independently of these fluctuations across years, the rates were consistently higher than expected, given the student-to-computer ratios in the participants' regions. When asked about where they most frequently went to access the Internet, the first place was the workplace, followed by home, and finally the university computer centers.

Some of the questions also addressed Web-use skills. The most popular tool by far was Wikipedia (almost 50% used it frequently or very frequently), followed by MSN-Messenger and Skype. Websites

such as Facebook and YouTube were used significantly less often. However, use of these Websites showed an effect of age, with younger respondents using them more often for social exchanges and sharing, and older respondents making more use of technologies that directly met their learning or professional needs.

When participants' age is taken into account in the technological profile, a number of interesting differences can be identified, again depending on the study year. Thus, for year 2009–2010, younger participants (aged 30 years or less) accessed the Internet more often at work, whereas those aged from 31 to 40 years accessed it more often at cyber-cafés. The opposite trend was observed for years 2007–2008 and 2008–2009: the older and more experienced the participants, the more they tended to have computers at home, along with greater access to DE courses from home. In contrast, younger, less experienced participants made up for their lack

of equipment by going to the university computer centers (years 2007–2008 and 2008–2009) or using the equipment available at their workplace (year 2009–2010).

Participants' motivations to enroll in a DE program

The analyses of the three years of data show clear and convergent motivations for enrolling in a DE program. As seen in the 2009–2010 data in Figure 1, the main intention was to pursue individual professional development and the professional promotions that come with further qualifications. Practical considerations also came into play, such as the possibility of combining education and work, the prestige conferred by a university diploma, and the fact that the diploma program was not offered locally.
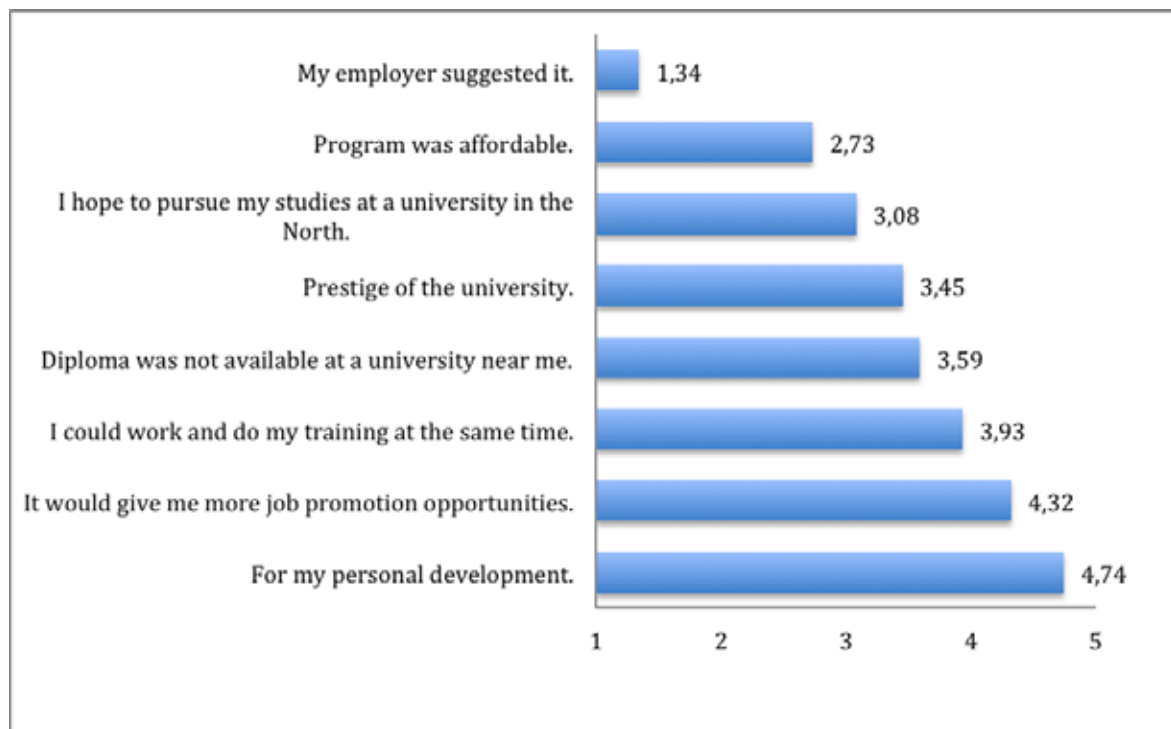

Figure 1. Motivating factors for enrolling in a DE program (2009–2010)2

Although factors such as university prestige or the hope of pursuing studies at a northern university appear to have played a non-negligible role in the decision to enroll in a DE program, they had less weight. A case in point was that the hope to study at a university abroad was rarely realized, given that, depending on the graduation year, only 13 to 20% of the participants left their country after graduation.

In confirmation of the results on the questionnaire responses, the interview results revealed that the development of professional competencies was far from the primary motivation reported by participants, and it generally applied only to working professionals who wanted to continue their training:

> S2:[3] "I'm not looking to get a degree, but simply to acquire some more skills, some more assets, so I can upgrade my professional qualifications."

This is not to say that enrolling in a DE program was not devoid of ambition. For most participants, it was meant to make up for a lack of training or to meet circumstantial needs:

> S1: "Since I'm a teacher, I was aware of the importance of communication techniques, because in our university culture, unfortunately, we receive purely agronomic training only, and the pedagogical aspect is completely neglected."

In this respect, the motivation to take a DE course was not just the "added value" it would confer. The students also took the courses to earn higher salaries. In addition to professional development, whether out of a desire to improve or out of necessity, increased employment opportunities provided a further reason for taking a DE program:

> G7: "I wanted to come out as a qualified person, with degrees, not only to find a job in my country, but also abroad. They can give me more job opportunities."

> S3: "I visualize a goal that I have set for myself; that is, I want to have a degree."

According to the respondents' expressed views, we may posit that both intrinsic and extrinsic motivation played a role in their decision. Thus, the most frequently stated positions reveal either intrinsic motivation (personal growth) or extrinsic motivation (professional advancement).

Moreover, although they are not negligible, it is worth mentioning that the DE-specific factors follow behind in third and fourth place. In other words, the decision to take a DE over a face-to-face program appears to have been made only after the decision was made to pursue professional development. Therefore, it was not the DE program itself—with all its advantages—that motivated them to enroll, but instead the need for further training. The DE program was selected subsequently, for its particular advantages.

Depending on the study year, some interesting indications were obtained by crossing certain variables. For example, according to the 2009–2010 data, the hope to pursue studies at a northern university and university prestige appeared to be stronger decision factors for men than for women. Age also influenced the desire to pursue studies in the North, which was mentioned much less often by participants over 40 years old (2008–2009 data), probably due to the greater obligations associated with a more solidly established social status.

When comparing the opinions of participants enrolled in programs delivered by universities in the North versus the South, the main distinguishing characteristic was that students in northern-delivered programs were more inclined to enroll because the equivalent degree was not available in their region. The prestige of the university and the hope to continue studying at a northern university were also significantly more influential on the decision to take a program delivered by a northern university.

Participants' representations of DE

We also note a strong convergence in representations of DE among the different samples across the three study years.

In all cases, the first six perceptions are reported in the same order of priority, with the remainder showing only minor differences. The data presented in Figure 2 are for year 2009–2010.
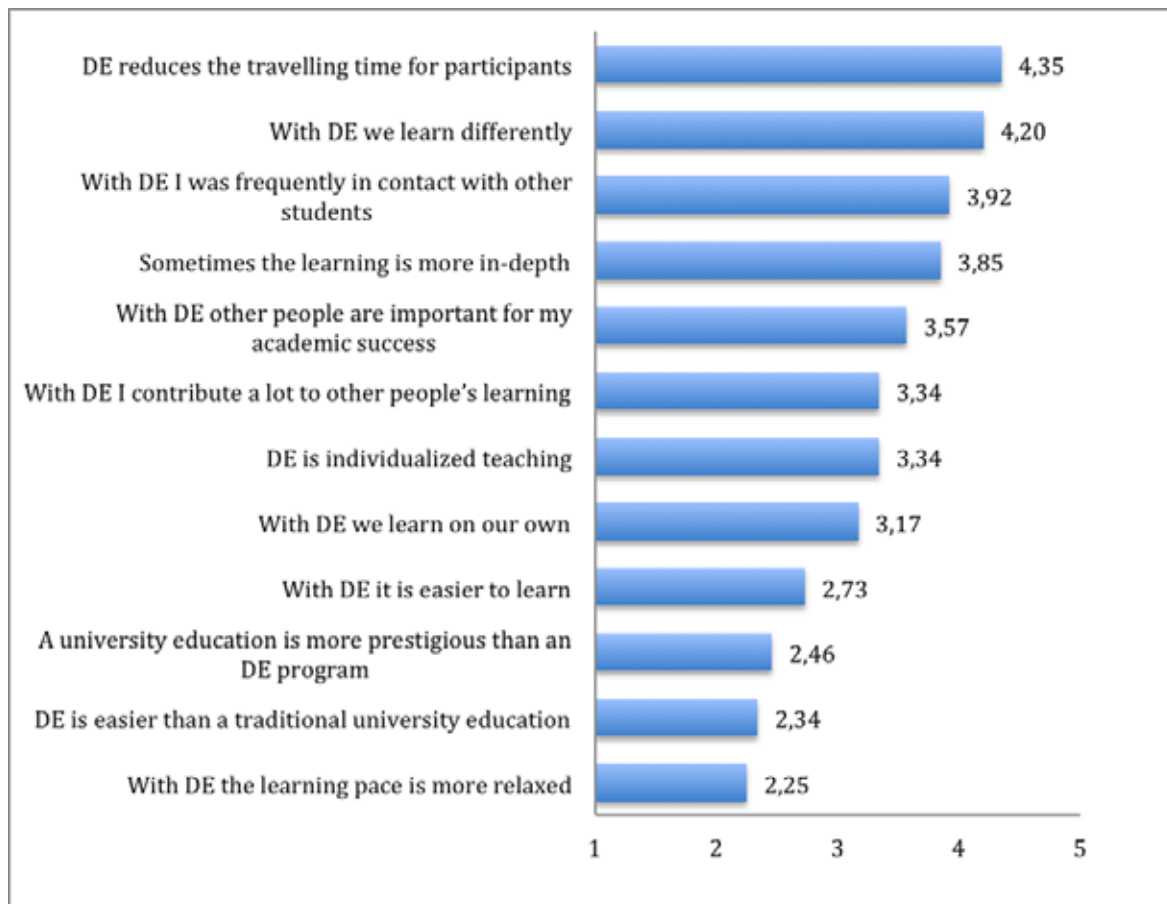
Representation	Value
DE reduces the travelling time for participants	4,35
With DE we learn differently	4,20
With DE I was frequently in contact with other students	3,92
Sometimes the learning is more in-depth	3,85
With DE other people are important for my academic success	3,57
With DE I contribute a lot to other people's learning	3,34
DE is individualized teaching	3,34
With DE we learn on our own	3,17
With DE it is easier to learn	2,73
A university education is more prestigious than an DE program	2,46
DE is easier than a traditional university education	2,34
With DE the learning pace is more relaxed	2,25

Figure 2. Representations of DE programs (2009–2010).

The representation with which most respondents agreed, "DE reduces the travelling time for participants," was the most immediate and widely acknowledged benefit of DE.

The next most frequent representation concerns the teaching and learning methods associated with DE, expressed as, "With DE, we learn differently." This underscores that the benefits of DE exceeded the organizational framework, and that the differences with respect to face-to-face education influenced how the participants learned. Some representations concerned the role of other learners in the DE process: "With DE, I was frequently in contact with other students." This is in line with the previous representation, and it appears to indicate that DE was perceived as a collective rather than an individual learning mode. This is confirmed by the statements, "With DE, other people are important for my academic success," and "With DE, I contribute a lot to other people's learning." Moreover, respondents agreed less with the fact that, "With DE, we learn on our own," which reinforces the view of DE as primarily a collective activity.

Finally, a look at the remaining representations ("With DE, it is easier to learn," "A university education is more prestigious than a DE program," "DE is easier than a traditional university education," and "With DE, the learning pace is more relaxed") suggests that the workload and value of a DE program were perceived as more or less equivalent to those of face-to-face education. In other words, DE may offer different teaching and learning methods ("With DE, we learn differently"), but it requires about the same amount of work, and the outcome is a roughly equivalent set of qualifications.

When the expressed opinions were crossed with variables such as gender and age, some shades of difference were revealed in the trends. For example, it appears that men placed more emphasis on collectivity and collaboration in DE, showing higher agreement than women with the statements that addressed these aspects. In contrast, women compared to men tended to perceive DE more as an individual learning mode. For year 2009–2010, younger respondents (30 years or less) compared to older respondents (31 years and older) tended to perceive DE as an individual learning mode, while older respondents perceived that DE had more benefits for their learning.

Another interesting differentiation concerns the organizing university. Respondents who took a DE program delivered by a university in the South had a more collective perception: they agreed significantly more with the statements, "With DE, I was frequently in contact with other students," "With DE, other people are important for my academic success," and "With DE, I contribute a lot to other people's learning." Inversely, respondents who took a DE program delivered by a university in the North had a significantly more individualized perception of DE, expressed as "DE is individualized teaching." Again concerning the organizing university, students enrolled in a northern program gave more weight to the contribution of technologies to their training, in contrast to students enrolled in a southern program.

Concerning participants' preconceptions about DE, two scenarios were identified from the interview analysis:

- Either they had not had preconceptions, that is, they did not have a clear idea of what a DE program was before they experienced it:

  S5: "Before, I didn't know what would happen."

- Or they had erroneous preconceptions:

  S1: "For me, distance learning, well, you're very free; nobody tells you what to do; you can take the courses whenever you want."

We may therefore posit that when students begin a DE program, there is usually a period of adjustment, when they must reassess their initial perceptions in addition to familiarizing themselves with how the DE program works.

Challenges encountered and the degree of satisfaction with DE

In terms of technological challenges, a considerable proportion of the respondents, which varied across the samples, reported that they had to cope with frequent or very frequent power failures, ranging from 30% in 1997–1998 to 18.6% in 2009–2010. Internet crashes were about equally frequent: from 28% in 2008–2009 to 22% for 2009–2010. These are significant disruptions, interfering directly with course progress. Moreover, the students were rarely able to resolve these problems by themselves, given that they were burdened with poor-quality infrastructures throughout the region or even the entire country. Looking at the change in percentages over time, note that these crashes become less frequent. However, given the time span between surveys, we should be cautious in attributing this positive trend to overall improvements in services.

The great majority of respondents were at ease using the latest software applications. In fact, over 80% said that they had few or very few problems using basic programs for word processing, spreadsheets, or presentations. Less than 5% said that they had major problems.

Furthermore, the education platforms, which were almost all the same across the training programs, generally caused no problems. Depending on the study year, from 60 to 80% of users found them easy or very easy to use. Only the more specialized applications, such as Web page design software, posed appreciable difficulty.

As for the computers themselves, from 64% (in 2008–2009) to 73% (in 2009–2010) of respondents felt that their equipment was satisfactory or very satisfactory at work and at home. Of those attending a digital campus, 80% felt that the available equipment was satisfactory or very satisfactory.

Concerning assistance for resolving technical problems, about 65% reported that a resource person at the delivering university was frequently or always available. However, in practice, they usually asked for help from another DE staff such as a tutor or professor. Alternatively, 50% of respondents sou-

ght help from a colleague on site or from another student. Problem solving appeared to follow a gradient: the participants' first strategy was individual trial and error, followed by help from peers (students, colleagues, acquaintances), and finally remote help by a professor, technician, or tutor, whom they contacted by phone or via the platform.

In light of these results, it appears that the vast majority of participants enjoyed highly satisfactory learning conditions when it came to the materials and technical assistance. Apart from power blackouts and Internet crashes, which the educators had no way of controlling, there were very few technical problems, and the support provided to resolve them was generally deemed adequate.

Concerning the pedagogical aspects, some were viewed as positive or even very positive, but others were perceived more negatively. Among the positive aspects were the support materials and documentation for the courses, the teaching methods, and the assessments and exams, which were reported as appropriate or very appropriate by a large majority of respondents (over 80% in 2008–2009 and slightly less in 2009–2010). On the other hand, some aspects related to program organization appeared to be considerably less satisfactory. Thus, from 60% (in 2009–2010) to 74% (in 2008–2009) of respondents felt that the learning pace was intense or very intense (the descriptor "too intense" was not offered as a response choice).

In addition, the results on workloads and deadlines for handing in assignments appear to differ considerably among respondents. Regardless of study year, about 34% of respondents felt that the workload was reasonable or less than expected, whereas 62% found it heavy or very heavy. A similar trend was found for assignment deadlines, which from 34 to 37% considered convenient or very convenient (depending on the year), whereas 39% considered them more or less difficult to meet, and 27% considered them difficult or very difficult to meet. On this point, we should mention that time management and work planning are key factors in DE, because they determine the regularity and

intensity of produced work. Accordingly, these aspects featured frequently in the qualitative analysis of the open-ended responses:

> S4: "At first, I didn't know enough about the tools we were working with. […] After a while, everything went well."

However, this first type of familiarization appears to vary across participants, depending on their computer skills and those of their family or acquaintances:

> S10: "It [managing the platform] didn't take long because I had taken some computer training."

The second type of familiarization involved in the DE programs was pedagogical. Aside from learning how to use the technologies, taking a DE course required learning how to use new learning methods, which not all the students were used to:

> G1: "Of course, when it's a machine, sometimes, they're hesitant to talk to a machine or to write with a machine. […] So they're introduced to a new culture. Some of them aren't used to that."

This two-fold familiarization highlights the importance of initiating students into DE functions, both technological and pedagogical, prior to beginning a course:

> G2: "[…] organize a return to university where everybody assembles. You get to know all the people who are going to take the program, and that way you can learn things that you didn't know before, and who you can go to for help."

Concluding with the organizational aspects, the length of the program was generally judged appropriate or very appropriate by about 80% of respondents, and the availability of a resource person for assistance was judged frequent or constant by over 65% of respondents.

The relational aspects of the DE system were generally assessed very positively, in terms of both peer-to-peer communication (over 80% satisfaction) as well as communications with professors

and tutors (about 70% satisfaction). In addition, 89% of respondents in 2008–2009 considered the work atmosphere of the program satisfactory or very satisfactory, with 66% in 2009–2010.

In summary, an overwhelming majority of respondents perceived the pedagogical and relational aspects of the DE program as satisfactory. However, a number of organizational aspects, such as workload, learning pace, and assignment deadlines, appeared to be more problematic, and they taxed some respondents to their limits. These problems would be largely explained by the fact that most of the students were working at the same time, and might even have a second job as well as additional responsibilities (e.g., childcare).

Nevertheless, participants who had taken an introductory course on DE found the DE experience significantly more satisfying in terms of work atmosphere and exchanges with professors and tutors. With the same ranking of aspects, participants who had opportunities to attend synchronous meetings with course instructors appeared to be more satisfied with the relational climate of the program, although they did not show significantly more satisfaction with organizational aspects.

By accounting for certain variables such as gender, age, and some organizational aspects, we were able to deepen our understanding of some of the pedagogical and technical aspects of the programs.

With respect to gender differences, the 2008–2009 and 2009–2010 data converge to indicate that women more than men consistently contacted a resource person to help resolve technical problems. However, no apparent difference emerged between men and women in terms of the technical skills required to follow a DE program.

The effect of age range is seen on the degree of satisfaction with the program. Thus, older learners (40 and up) appeared to be significantly more satisfied with the training, whereas younger learners were less satisfied, and they more frequently reported having technical problems during the program.

It is also interesting to note that when problems arose, respondents enrolled in a southern university more frequently appealed to a tutor or another student. Moreover, they were significantly more satisfied with the workload and reported significantly fewer conflicts with other students and professors. However, they were also significantly less satisfied with the assessment and examination system than students in a northern university. This suggests that for the southern universities, the cultural proximity between students and professors facilitated relational aspects of the training and acted to intensify and enrich relationships with tutors.

Results of the qualitative analysis reveal that, generally speaking, the tutors were perceived to have played a positive role, particularly when they intervened rapidly, comprehensively, and in an individualized manner:

> S1: "Personally, last year, I was greatly helped by two or three of my tutors, who were sympathetic about the problems I had during my training. So I feel that the tutors did an excellent job."

Of course, the tutors could not play such a positive role if they were unavailable. Therefore, participants clearly identified the unavailability of the tutors as the most serious drawback:

> S10: "In my case, my tutor wasn't there for me."

In addition, we may conclude that the tutor's role was perceived positively overall, as long as they were available to coach the students. That said, they usually provided assistance quickly, comprehensively, and in an individualized manner.

Benefits associated with earning a DE diploma

The benefits of earning a DE diploma were investigated in the students who had completed a training program the previous year, that is, in 2008 for the 2008–2009 survey and in 2009 for the 2009–2010 survey.

Regardless of the graduation year, the benefits associated with obtaining a DE diploma were revealed as very significant, particularly in terms of feelings of professional competence (see Figure 3). Thus, in the graduating class of 2008, 75% of respondents agreed that they had greater feelings of professional competence, with over 94% agreement for the class of 2009.

Aside from feelings of professional competence, the impacts on employability and professional development were also appreciated. Thus, around 32% of graduates in 2008 and 45% in 2009 felt that the diploma contributed positively to their professional career, in the form of a promotion or the assignment of additional responsibilities.

Moreover, as shown in Figure 3, 22% of graduates in 2008 agreed that their diploma had contributed to finding a new job which corresponded better to their personal aspirations. For the 2009 graduates, this percentage was much higher, at 53%. Furthermore, about 22% and 25% of graduates in 2008 and 2009, respectively, felt that their diploma gave them opportunities to earn a higher salary.

In addition, respondents associated their diploma with other benefits, including the following:

- The skills they developed through their DE program helped them find a number of solutions to problems at work (95%, for both graduating classes).

- DE was useful for their professional career (85%, for both graduating classes).

- They were satisfied with their progress in developing new competencies (92% for 2008 and 73% for 2009).

- More job opportunities were available to them (72% for 2009).

- Their diploma was recognized in their professional community (74% for 2009).

- They were satisfied with the success they had in their career (73% for 2009).

- They were satisfied with their progress in achieving career goals (74% for 2008).
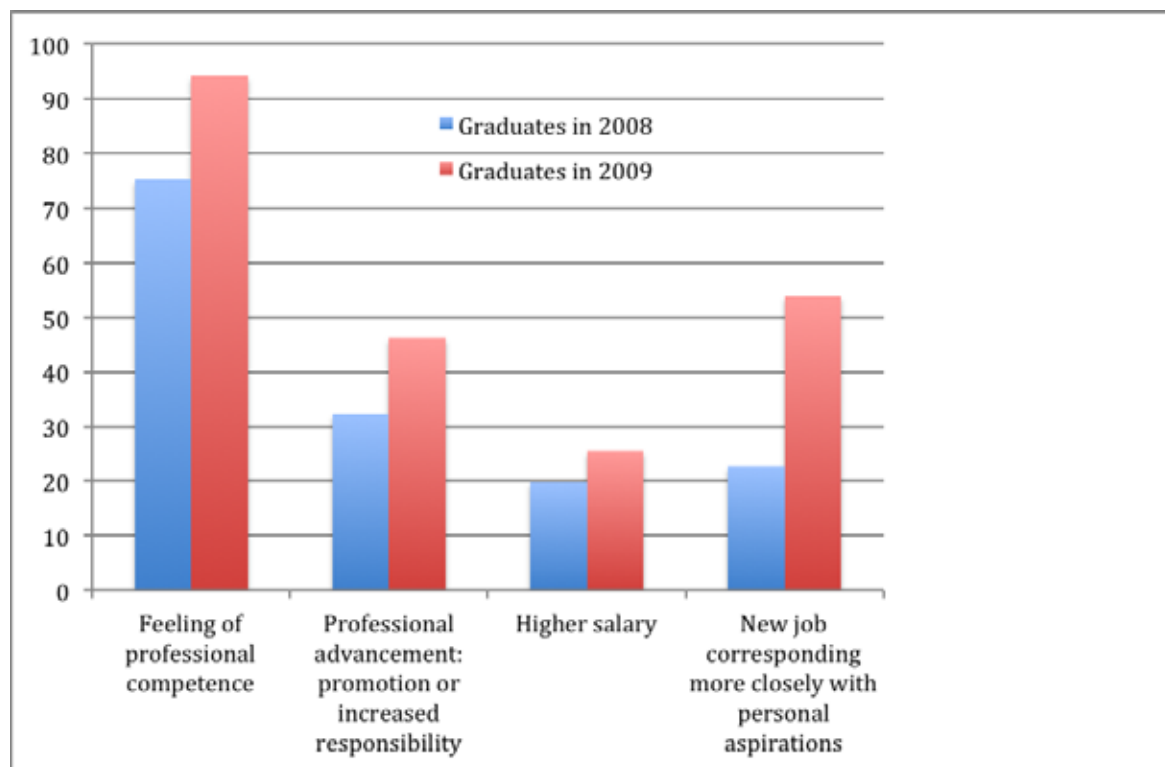
Figure 3. Benefits associated with earning a DE diploma.

The results of the qualitative analysis reveal that the benefits of the DE programs were felt mainly in terms of professional outcomes. The two main benefits corresponded point by point with participants' motivations to enroll in the program (see section on "Participants' motivations to enroll in a DE program"), which suggests that DE programs can respond adequately to learners' expectations. The positive outcomes included:

- Benefits for the development of professional competencies:

  S5: "In any case, it enabled me to developed competencies."

- Increased employability:

G2: "The profs got me involved in a lot of things, because quite simply, they felt that I had more skills, and those skills, I acquired them through those courses."

Increased employability, translated concretely into job promotions:

S4: "I'm still getting offers, job offers that people give me."

Another benefit of DE, although less often reported, was its contribution to the development of a qualified workforce that could serve African countries:

G2: "I realized that this should be an irreversible process, so African countries can improve the quality of their workforces without fear of the brain drain."

Given the benefits it provided, participants overwhelmingly reported a highly positive view of DE:

> S10: "On the whole, I appreciated it. For me, it was a rewarding experience."

In summary, it appears that the greatest benefits of the training were associated with feelings of professional competence, along with considerable benefits in terms of career progress, including additional skills, higher salaries, and greater professional recognition.

Furthermore, the high agreement with the item addressing willingness to continue DE training (76% for 2008 and 73% for 2009) indicates strong intentions among the graduates to acquire more qualifications. In view of the overall positive views expressed about DE in the questionnaire responses, we could assume that the training programs had a positive effect on these intentions.

Conclusion

We conclude by recalling that distance education (DE) proffers two main benefits for Africa. First, it provides a low-cost way to ease the congestion in African universities, which are struggling to accommodate excessive numbers of students in inadequate facilities. Thus, online courses can broaden the education offer without the construction of new national academic networks and institutions. Furthermore, because it does not require students to travel abroad, distance education can facilitate the reinvestment of graduates' skills into their own communities. They can thereby contribute to the development of a qualified workforce attuned to local and regional needs. However, the current state of technological development in African countries casts doubt on the possibility of fully realizing the potential of distance education at this time.

In relation to the research objectives, we underscore some overall trends in order to provide a broad overview of the training programs, and we identify certain findings that could be useful for guiding future policy decisions.

In the participants' sociological profile, we found that the three successive samples of participants who were enrolled in or had completed a DE program were fairly homogenous in terms of gender and age as well as marital, family, and sociocultural status. The same may be said in term of their jobs and years of professional experience. Consequently, there were few differences among the cohorts between students who were taking courses and graduates, aside from program progress (ongoing versus completed). There is no question that the sociological portrait that emerges was strongly influenced by the universities' selection criteria, which favored equity for women and candidates younger than 40 years old. That said, the average participant profile is a man about 35 year old on average, living and working in an urban, French-speaking region of Africa, with a university degree in education at the bachelor's, master's, or doctoral level, and currently working. Accordingly, the DE programs would have been undertaken mainly in the first half of the participants' professional careers, with the purpose of continuing education beyond initial training.

With respect to the technological profile, we note first of all that the participants enrolled in a DE program in 2009–2010 appeared to be better equipped technologically than those surveyed in 2008–2009. As mentioned above, we noted an overall improvement in the available equipment (i.e., computer and Internet access) from the first to the third study year. We also found differences in the technological profile in terms of age and professional experience. Thus, when participants' age is accounted for in the analysis of the technological profile, some interesting differences emerge, although they fluctuate with the study year.

Certain particularly discriminatory age-related factors then came to light. For instance, younger respondents had fewer problems with the computers compared to older respondents. One possible explanation for this is that younger respondents had more opportunities to practice their technology

skills than older respondents, who were therefore less experienced in these matters, probably due to recent technological innovations at the universities and in professional and personal lives. Other noticeable age-related differences were observed in the degree of satisfaction with the relational aspects of the training, where older participants were more satisfied, and in satisfaction with the training requirements, which older participants perceived more negatively.

Aside from the job- and age-related variables, which appear to be closely associated, some interesting gender differences were uncovered, notably in technical and relational aspects. Although no appreciable difference was found between study years in men's and women's technical skills, women more frequently asked a resource person for help to resolve technical problems.

Generally speaking, the technical problems involving the DE Web platforms were most often resolved using strategies that would be considered informal: asking for help from other students, more experienced colleagues, peers, or family members. For example, one student said, "My little sister is an engineer, and she helps me too." All three surveys showed that this was a routine and frequent strategy.

The results also show that men perceived the collective aspects of DE more positively than women, who perceived it more as an individual learning mode.

These differences in appreciation of the collective versus individual aspects of DE were also seen between students in programs delivered by northern versus southern universities. Thus, respondents enrolled in a northern program had a more individualized perception of DE, whereas respondents enrolled in a southern program placed less emphasis on the role of technologies in their learning.

In terms of the benefits obtained from a DE program, the results show overwhelmingly positive perceptions by all participants. Although the graduates in year 2008 reported a certain shortfall

between the benefits for their professional development and the tangible benefits for their professional advancement, the graduates of 2009 appeared to have a more positive appreciation of the tangible impacts of DE on their job status. However, we should emphasize that the benefits derived from the DE programs were not the same for all participants. For instance, men experienced greater feelings of competence, as did respondents who had taken an OLD program delivered by a university in the South. In addition, younger and less experienced respondents reported a greater salary impact.

Finally, it is worth noting that 87% of respondents remained in their country of residence once they had obtained their diploma. The motivations to enroll in a DE program therefore appear to be more for purposes of social and professional advancement at home than for migrating to a richer country. In addition, the hope to pursue one's studies at a university in the North seems to be a secondary reason, overshadowed by motivations such as personal development and professional advancement. In light of the opinions expressed, it would seem that the decision to take a DE program over a face-to-face program comes into play only after the decision was made to advance one's professional career.

From the results reported here on three successive cohorts, comprising a total of 2,416 individuals who followed a DE program, we may reasonably conclude that the programs as delivered were perceived highly positively by the vast majority of participants, who derived considerable and diversified benefits for their personal and professional development.

In conclusion, we may add that, even though the workload and tight deadlines sometimes taxed the limits of the participants, who had to contend with jobs at the same time, the great majority retained a positive perspective of this form of education delivery, as expressed by their general satisfaction.

Notes

[1]   All programs were offered by the Agence universitaire de la francophonie / Association of Universities of the Francophonie (AUF), a global network of French-speaking universities which includes l'Université de Montréal.

[2]   Rated 1 = "completely disagree," 5 = "completely agree."

[3]   Throughout this text, the letter S refers to participants who were enrolled in a DE program at the time of the interview (i.e., students), and the letter G refers to participants who had graduated from a DE program at the time of the interview (i.e., graduates).

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