Using IT for Distance Learning: Benefits and Challenges for African Learners

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Abstract

Open and distance learning (ODL) offers enormous potential for Africa, where higher education systems face numerous constraints (Gioan, 2007). Yet few studies have addressed ODL in Africa. Against this background, this study aimed to 1) describe the profile of African students enrolled in an ODL program; and 2) gain a deeper understanding of their experience with ODL. We used a mixed-method design, including an online questionnaire (to achieve objective 1) and individual interviews (to achieve objective 2) with two groups of participants: African students enrolled in an ODL program at the time of the study and African students who had completed an ODL program at the time of the study. Results indicate that both groups shared a similar sociological and technological profile and that ODL programs are taken as continuing education courses for purposes of professional development. It appears that the ODL experience resembles that of other students, particularly Western students. Few sociocultural aspects that were specific to Africa were found.

Keywords

ODL, Africa, perceptions, students

Introduction

Open and distance learning (ODL) programs are making a substantial contribution to higher education (Harry, 1999). However, the implementation to date is lagging behind expectations (OECD, 2005). ODL may be defined as an approach that aims to broaden access to education and training by enabling leaners to overcome temporal and spatial obstacles and by providing flexible teaching modes that can be adapted for individuals and groups (UNESCO, 2005). ODL offers enormous potential for Africa in particular. African universities must cope with the triple constraints of expanding enrollment in universities, crippling budget cuts, and a soft labour market (Gioan, 2007, p. vii), which greatly hinder progress. Whereas 26% of the world's population completed a tertiary education program in 2007, only 6% of Africans did so (UNESCO Institute for Statistics, 2009, p. 14). Consequently, ODL is frequently viewed as an effective alternative for delivering higher education in Africa. This type of system allows accommodating more students at lower cost than face-to-face instruction (Brossard & Foko, 2007). In addition, the spatiotemporal flexibility of ODL allows serving a diversified clientele, from first-year university students to working professionals (Gilbert, 2000). Accordingly, ODL could effectively contribute to develop a qualified African work force, which is why it has received special attention in the Action Plan for Higher Education developed by the African Union's (2006) *Seconde décennie de l'éducation pour l'Afrique* (second decade of education in Africa) (2006–2015) and elsewhere. Nevertheless, stumbling blocks to progress include inadequate computer equipment and organization and the failure to consider sociocultural aspects that could hinder the adoption of information and communications technologies (ICT).

Against this background, this article presents some partial results of a three-year (2007–2010) mixed-method study on ODL programs supported by the *Agence universitaire de la Francophonie* (Association of Universities of the Francophonie – AUF). The overall goal of this study was to examine the benefits and challenges of ICT-based ODL programs for the development of African professionals. In this article, we present only some of the results related to two specific objectives: 1) to describe the profile of African students enrolled in an ODL program; and 2) to gain a deeper understanding of their experience with ODL. Before presenting the methods and results, we begin with a conceptual overview of ODL in Africa through the lens of technology adoption.

Conceptual aspects

Our conceptual framework considers the specificity of the African context in the study of ODL compared to the Western context, which has been largely studied. The idea is to highlight the sociocultural aspects of Africa that play a role in the ODL experience. First, we should keep in mind that ICT use is always culturally anchored, and consequently varies across cultures (Mattelart, 1991). A number of models, such as the theory of reasoned action (Ajzen, 1985; Fishbein & Ajzen, 1975) and the technology acceptance model (Davis, 1989) have attempted to explain variations in ICT adoption (or not) by individuals. Davis' theory dominates the literature (Venkatesh & Bala, 2008). It posits two variables in ICT adoption: perceived usefulness and perceived ease of use. These determine the user's intention to use ICT, and ultimately their effective use of ICT. Although this model has been refined with time, it still has some limitations, notably for purposes of our study. First, it is applied mainly to management studies (Kharbeche, 2006), whereas our field is education. Moreover, it is important to note that the above-mentioned ICT adoption models are mainly descriptive. They therefore provide little information about how interventions can effectively foster ICT adoption, even though studies are beginning to address this issue (Venkatesh & Bala, 2008). Finally, ICT adoption models have been developed by Western authors, which raises the question of their validity for African cultures. Thus, beyond the structural and economic factors that clearly hinder ICT adoption in Africa (see Karsenti & Collin, 2010), it is useful to consider the sociocultural factors that may pose obstacles to ICT adoption in Africa. For this purpose, studies generally refer to the work of Hofstede (1980), who identified five main cultural dimensions of countries: power distance, individualism versus collectivism, masculinity versus femininity, uncertainty avoidance, and long-term orientation. These dimensions address general cultural characteristics of populations. However, they do not allow capturing local cultural particularities. For that purpose, Agboton (2006) identified several other dimensions, including knowledge sources, whereby knowledge is attributed more to experience and wisdom passed down from ancestors than to formal education. Oral communication and direct relationships between people, in other words language and communication, are therefore vital in Africa, a continent with many languages but relatively little Web presence. That said, ICT adoption also depends on certain individual aptitudes, such as knowing how to read, write, and understand English.

With respect to our research objective, the growth of ODL in a developing country has rarely been considered from the perspective of technology adoption theories. Although a reliable empirical database is lacking, these theories nevertheless allow explorations of the sociocultural dimensions at play. Our study aims to contribute to this research stream by pursuing two specific objectives as part

of a broader research program: 1) to describe the profile of African students enrolled in an ODL program; and 2) to gain a deeper understanding of their experience with ODL.

Methods

This study addresses AUF-supported ODL programs, which include about fifty diploma or master's degree programs offered by higher education institutions in Belgium, Burkina-Faso, Cameroon, Canada, France, Senegal, and Tunisia. The AUF encourages African students and professionals to take university or ongoing training courses through ODL while remaining in their country and continuing to work. The ultimate aim is to build a qualified African workforce. Our study therefore targeted African learners who were enrolled in or had completed AUF-supported ODL programs and who were living in an African country while they took the ODL courses. Data were gathered in summer 2009.

More specifically, we used a mixed-method design, as follows: 1) to achieve objective 1, quantitative data were gathered from online questionnaires to develop a sociological and technological profile of the participants; and 2) qualitative data were gathered from individual interviews to achieve objective 2, which was to better understand the ODL experience in Africa.

The online questionnaire was developed to assess specific aspects related to the different objectives of the broader research program. In the present study, we refer only to the sections used to describe the participants' profile. Two groups of participants were approached: African students who were enrolled in an AUF-supported ODL course at the time of the study, and African students who had completed an AUF-supported ODL program at the time of the study. In all, 406 respondents were enrolled in one of these programs and 220 had graduated from one the previous year, for a total of 626 online participants.[1] The questionnaire responses were then subjected to a descriptive statistical analysis to reveal profile trends.

In addition to the questionnaire, we held individual semi-directed telephone interviews (using IP telephony) with 24 participants who had expressed interest when filling out a previously administered survey. When selecting these participants, we ensured proportional sample allocation according to a number of parameters, including age, sex, country of residence, and ODL progress (i.e., at time of interview, participants were either taking an ODL course or had completed an ODL program). Our final sample comprised 10 women and 14 men aged from 23 to 47 years and living in 15 different countries. Twelve participants were taking an ODL course at the time of the interview and 12 others had completed an ODL program. The interview protocol included open-ended questions addressing the different stages involved in taking the ODL program (prior to, during, and after taking the ODL courses). The protocol was tested and improved by two African students who had taken an AUF-supported program. All interview transcripts were coded and analyzed according to a thematic analysis procedure (L'Écuyer, 1990). The themes that emerged from the detailed analysis are presented in the Results section.

1 Results are given only on participants who fully completed the questionnaire.

Results

The results are presented in terms of our two research objectives. The first set of results concerns the profile of African students enrolled in an ODL program and the second set concerns the ODL experience.

Quantitative results: sociological and technological profile of African students enrolled in or recently graduated from an ODL program.

The ODL experience is recounted mainly from the sociocultural perspective of urban dwellers (84.4% of participants) in French-speaking Africa. For instance, 76.8% of the respondents worked for the Regional Office for West and Central Africa (Figure 1), where French was the language of work, although they had occasional exchanges in English and/or Arabic and/or another language (respectively 50%, 12%, and 10% of respondents). Our sample comprised a large majority of men (68.6%) aged 35 years on average. This subsample (> 200) comprised a variety of professionals, the most common being teachers (14%), engineers (11%), doctors (9%), and computer specialists (8%). In addition, 43.4% reported having a second job, indicating a heavy overall workload. The vast majority of respondents had a graduate university degree (master's: 46.5%, DEA: 6.3%; doctorate: 11.9%), and their professional experience ranged from low to medium (53.1% had less than 5 years' experience; 80.3% had less than 10 years' experience).

Note, however, that some African countries are more heavily represented than others. For example, 21.8% of respondents were from Cameroon, with 10% from Burkina Faso (10 %), 8.4% from Benin, and 8.2% from Senegal. Respondents' marital status fell into two opposing categories: married (54%) and never married (44.7%). In addition, 55.7% had had a child or children, and 57.6% of these were responsible for them.

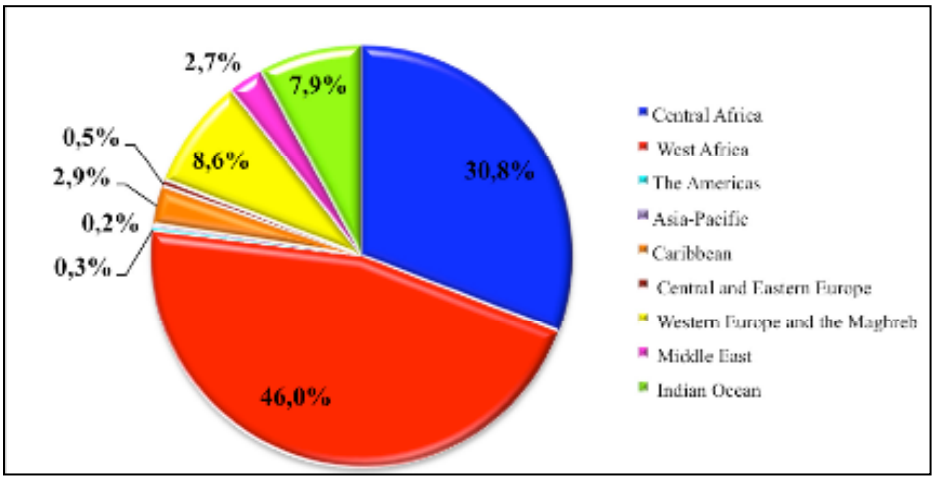

Figure 1. Participants employed by the Regional Office for West and Central Africa (AUF).

In light of the key role that technology plays in ODL, we now present a technological portrait of the participants to complement the above-presented sociological portrait. We note that 72.9% of the participants reported having a computer at home, of which 44% had Internet access. In other words, less than half the respondents had Internet access at home. For 26% of the respondents, a home computer was the second most frequently used method of Internet access, following access at work (32.9%) and ahead of access at AUF's Digital Campus (15.3%). In addition, 30.3% and 19.1% of respondents participated in virtual professional and scientific communities, respectively. These individuals appear to have used technologies as support for their professional growth above and beyond ODL. Note also that 44.6% of respondents reported using Wikipedia frequently or very frequently, followed by MSN Messenger (43.4%) and Skype (28.5%). This means that these respondents used Web sites and applications for informative purposes and synchronous communication. On the other hand, they rarely used social networking on Web 2 sites such as Facebook, YouTube, or blogs (Figure 2).

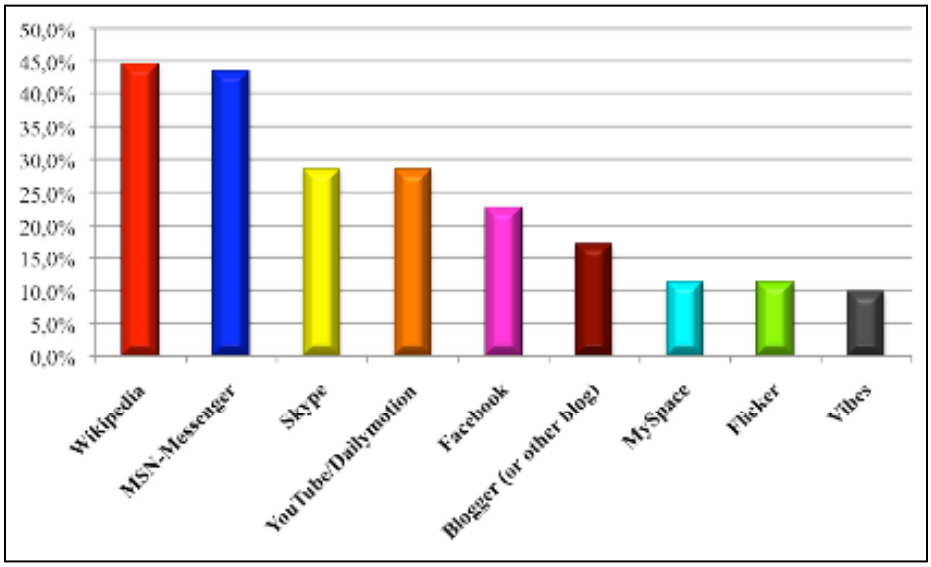

Figure 2. *Use of software and tools (%).*

To summarize the sociological and technological profile of African students enrolled in or graduated from an ODL program, recall that most students had enrolled in the program after earning a university degree, the majority at the graduate or doctoral level. Moreover, about half the respondents enrolled in the program with less than five years of professional experience under their belt, and 80% had less than 10 years' experience. We may therefore posit that the ODL program came into play mainly at the beginning of the career path, and was viewed more as ongoing education or professional development than as initial training.

In addition, the lack of significant differences between the two respondent groups (enrolled in or graduated from an ODL program at time of study) suggests a homogenous profile. Thus, participants who were pursuing or had finished an ODL program showed little difference aside from the progress they had made in their education.

These quantitative results can now be enriched by the qualitative results on the ODL experience.

Qualitative results: the ODL experience

The results are presented in chronological order according to pursuit of the ODL program (before, during, after taking the program). Thus, we begin with aspects surrounding the initial enrollment in an ODL program, followed by pedagogical aspects, and finally the outcomes of the ODL program for the participants.

Enrolling in an ODL program

Enrollment in an ODL program is addressed in terms of the learners' motivations and preconceptions and how they adapted to the teaching methods and technology.

Initial motivations to enroll in an ODL program

By far the greatest motivation was a desire to develop professional competencies. In general, professionals who were already working wanted to continue their training:

> E2[2]: *I'm not looking to get a diploma, just to acquire more skills, more assets, and to improve my curriculum vitae.*

In this perspective, the motivation to embark on an ODL program may be thought of as part of a broader career plan:

> C3: *My ambition* […] *for the future, is to be able to design multimedia resources and interactive CD-ROMs in Arabic for elementary school children.*

However, the participants were not completely disinterested. Most of them wanted to fill in the missing blanks in their education, or to adapt to economic conditions and other circumstances:

In this sense, the motivation to undertake an ODL program was not simply a decision to "add value" to their career profile. They were also trying to improve their earning potential.

Along with professional development, whether for reasons of self-development or economic necessity, employability provided a further motivation:

> C7: *First of all, I wanted to be qualified, to be certified not just to work in my country, but to work in other countries as well. So this would give me more job opportunities.*

Preconceptions of ODL programs

Two main profiles were identified in the participants concerning their preconceptions of ODL programs:

- Some had no preconceptions. In other words, they had no idea what to expect from an ODL program:

  C5: *Before, I didn't how it would go.*

2 Throughout this paper, the letter E refers to participants who were enrolled in an AUF-supported ODL program at time of interview and C refers to those who had completed an AUF-supported program at time of interview.

We might therefore suppose that enrolling in an ODL program requires learners to adjust their initial views, in addition to adapting to the ODL system, as we shall see next.

The familiarization process

Taking an ODL program appears to require a double adaptation. The first is to adapt to the technology:

> E4: *To start with, I didn't know enough about the tools I had to work with.* […] *After a while, everything went o.k.*

This first type of familiarization appears to vary across individuals, however, according to their computer skills and those of the people in their circle:

> E10: *That* [learning how to use the platform] *didn't take too long, because I had some training in computers.*

The second type of familiarization was pedagogical. Aside from adjusting to the technological aspects, taking an ODL course meant dealing with new teaching and learning methods for the first time:

> C1: *Of course, when it involves a machine, sometimes, they are intimidated by talking to a machine or writing on a machine.* […] *It means introducing a new culture. Some people are not used to that.*

This double adjustment underscores the need to introduce learners to the ODL system, in terms of both technology and teaching methods, before they begin a course:

> C2: *The AUF Centre organizes a return to the university, and everybody attends. You get to know all the people who are going to take the training, so you can find out how things work and meet people that can help you.*
>
> E4: *It's true that the people in charge help us a lot, so we can get used to the computer.*

Pedagogical aspects of ODL programs

Now that we have looked at the dynamics at play when participants enroll in an ODL program, we may proceed to the pedagogical aspects. We identified some of the demands of ODL programs, the mutual collaboration that learners appear to develop, the role of the tutor, and the fluctuating motivation of learners.

Demanding programs

Pedagogically, ODL programs appear to impose heavy demands on students in terms of the volume and pace of work:

> E5: *You have to work hard, do a lot of work.*

The demands of ODL programs are combined with other demands, such as professional and family obligations, which are difficult to reconcile:

> E5: *There's my job, there's my home life, and there's my social life. Well, it's not easy.*

This difficult balance becomes even more difficult when the ODL program includes synchronous teaching modes, which compel learners to drop everything else and attend the course:

> C10: *It's not easy to be there, for the live chats or when the professor gives a live session.*

We might assume that the constraints imposed on learners by synchronous teaching modes are similar to the temporal constraints imposed by face-to-face instruction. Paradoxically, therefore, learners were confronted with the very same temporal constraints they had attempted to avoid by enrolling in an ODL program rather than a face-to-face program. It is therefore possible that synchronous teaching modes, albeit useful in some ways, might deprive learners of the greatest benefit of ODL, namely temporal flexibility.

The difficult balance of family, job, and education means that sacrifices have to be made, especially in social and family life:

> E1: *I have made sacrifices with my children. When I'm home on the weekend, I have to rest from work, and it's the children who miss out.*

The participants reported on a number of personal attributes that are required to meet the demands of an ODL program:

- Regular attendance:

  C4: *I advised him* [a learner recently enrolled in an ODL program] *to devote a maximum amount of time, and to take the ODL program as seriously as a classroom program.*

- Organization, especially time management:

  E1: *It is indispensable to be organized.*

- Motivation and perseverance:

  E1: *If you're motivated to do it, you can succeed. If not, I wouldn't advise anyone to sign up for this kind of training.*

Outcomes of ODL programs

The outcomes of ODL programs were expressed mainly in terms of the professional benefits for the participants. The two main outcomes corresponded point-by-point to the learners' motivations to enroll in an ODL program (see *Enrolling in an ODL program*), suggesting that the programs adequately met the learners' expectations. The outcomes included

- Benefits for the development of professional competencies:

  E5: *In any case, it enabled me to develop some skills.*

- Greater employability:

C2: *The profs get me involved in a lot of different things, simply because they feel that I have more to offer, because of these skills, which I acquired by taking this training.*

E6: *I now have skills that make me more competitive professionally.*

Greater employability translates into concrete professional advancement for some:

E4: *I've even been asked to take jobs.*

Another benefit of ODL programs, although less often reported, was the development of human resources who could serve African countries:

C4: *This could contribute to African development, in the education field.*

In light of the benefits drawn, all the participants expressed their highly positive appreciation of the ODL programs:

E10: *Overall, I appreciated it. For my part, it was a rewarding experience.*

C7: *I'm very proud of the training that I took, and I have no regrets. I'm very happy about the training because of what it gave me.*

Discussion and conclusions

This mixed-method study had two objectives: 1) to describe the profile of African students enrolled in an ODL program; and 2) to gain a deeper understanding of their experience with ODL. With respect to the first objective, we learned that most African students in our sample were men, with an average age of 35 years and living in a French-speaking urban area (84.4% of participants). Moreover, the vast majority of respondents had a graduate or doctoral university degree, with relatively little or medium professional experience. This suggests that they took ODL courses for purposes of continuing education and professional growth. With respect to the ODL experience, the results, which were obtained in Africa, showed no significant sociocultural aspects that are specific to Africa (see the section on Conceptual aspects). In fact, the African experience does not appear to differ substantially from that of other students, particularly Western students, who have been largely studied in the literature. Thus, the participants present a rather adept technological profile, suggesting that most of them had adopted technologies, at least in part, before embarking on the ODL program. The adoption of ICT prior to taking an ODL course needs to be further explored, which explains why we did not consider the ICT adoption process in this sample.

Based on these results, we suggest that ODL programs not only hold promise for Africa's future, they have already fulfilled that promise to some extent. To advance in this direction, it would be useful to facilitate learner adjustment to ODL programs. This could include proactive information sessions prior to enrollment, covering the meaning and mechanisms of ODL, the expected demands, the types of teaching methods, and technological aspects such as platforms and software. With respect to administration, it would also be helpful to work with the countries concerned to obtain official recognition of ODL qualifications and to raise awareness of these qualifications in labour markets.

References

Agboton, J. (2006). L'impact des réalités socioculturelles locales sur l'appropriation de l'Internet en Afrique subsaharienne. In C. Ammi (Ed.), *Innovations technologiques: aspects culturels et mondialisation* (pp. 129-148). Paris: Lavoisier.

Ajzen, I. (1985). From intentions to actions: a theory of planned behavior. In J. Kulh & J. Beckman (Eds.), *Action-control: from cognition to behaviour* (pp. 11-39). Heildelberg: Springer.

Brossard, M., & Foko, B. (2007). *Coûts et financement de l'enseignement supérieur en Afrique francophone*. Washington, DC: World Bank. Retrieved from http://siteresources.worldbank.org/EDUCATION/Resources/278200-1121703274255/1439264-1187286466499/Couts_et_Financement.pdf

Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behaviour: An introduction to theory and research*. Don Mills, ON: Addison-Wesley.

Gilbert, W. A. (2000). *Retention in distance education telecourses and perceptions of faculty contact: A comparison of traditional and nontraditional community college students* (Unpublished doctoral thesis). Florida State University, Tallahassee, Florida.

Gioan, P.-A. (2007). *Enseignement supérieur en Afrique francophone. Quels leviers pour des politiques financièrement soutenables?* (Document de travail de la Banque mondiale no. 103). Washington, DC: World Bank. Retrieved from http://siteresources.worldbank.org/EDUCATION/Resources/278200-1099079877269/547664-1099079956815/AFTHD_WPS103.pdf.

Harry, K. (1999). *Higher education through open and distance learning: World review of distance education and open learning* (Vol. 1). London: Routledge/Commonwealth of Learning.

Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. London: Sage Publications.

Karsenti, T., & Collin, S. (2010). Les formations ouvertes à distance (FOAD) : quelle contribution au développement de professionnels qualifiés en Afrique? *Questions vives, recherches en éducation, 7*(14), 71-88.

Kharbeche, T. (2006). L'impact des facteurs socioculturels dans l'adoption des TIC en Afrique du Nord : état de l'art et enjeux. In C. Ammi (Ed.), *Innovations technologiques : aspects culturels et mondialisation* (pp. 75-90). Paris: Lavoisier.

L'Écuyer, R. (1990). *Méthodologie de l'analyse développementale du contenu. Méthode GPS et concept de soi.* Québec, QC: Presses de l'Université du Québec.

Mattelart, A. (1991). *La communication-monde : histoire des idées et des stratégies*. Paris: La découverte.

OECD. (2005). *E-learning in tertiary education: Policy brief*. Retrieved from http://www.oecd.org/dataoecd/55/25/35961132.pdf

UNESCO. (2005). *L'enseignement à distance*. Retrieved from http://www.unesco.org/bpi/pdf/memobpi38_distancelearning_fr.pdf

UNESCO Institute for Statistics. (2009). *Global education digest 2009: Comparing education statistics across the world.* Montréal, QC: UNESCO-UIS. Retrieved from http://www.uis.unesco.org/Library/Documents/ged09-en.pdf

Union africaine. (2006). *Seconde décennie de l'éducation pour l'Afrique, Plan d'action (2006-2015)*. Retrieved from http://www.adea-comed.org/IMG/pdf/deuxieme_decennie_education_pour_afrique_plan_daction.pdf

Venkatesh, V., & Bala, H. (2008). Technology Acceptance Model 3 and a research agenda on interventions. *Decisions sciences, 39*(2), 273-315. doi:10.1111/j.1540-5915.2008.00191.x

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