



Received: 29 February 2016
Accepted: 01 June 2016
Published: 22 June 2016

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Rebecca Maree English, Queensland University of Technology, Australia

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EDUCATIONAL ASSESSMENT & EVALUATION | RESEARCH ARTICLE

The outcome of constructive alignment between open educational services and learners' needs, employability and capabilities development: Heutagogy and transformative migration among underprivileged learners in Rwanda

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Abstract: While teachers play an important role in education and supporting learning, many learners in under-resourced settings are not privileged to have access to teachers. Some of these underprivileged learners deal with the issue by engaging in self-determined and self-directed learning. Their efforts sometimes pay off with access to formal higher education and financial resources they would not access otherwise. This paper reports and discusses data from interviews with two secondary education graduates who hunted and learned on their own notes from the field of *Math-Physique* (Mathematics and Physics), took national exams as non-formal learners and won government sponsorship and student loans that are highly competitive in Rwanda. The informants subsequently completed their undergraduate education in Physics and Applied Mathematics, respectively. One of them was completing his master's degree course in Applied Mathematics at the



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ABOUT THE AUTHOR

Bernard Nkuyubwatsi is a Commonwealth scholar funded by the British Government in his PhD study at the University of Leicester. Bernard engaged in self-determined learning since 1994. Bernard took national exams as a non-formal learner in 2000 to win student loan for his undergraduate education. Although he was denied student loan in 2001, originally with a claim that teacher-trainees would fail university-level education, Bernard emerged to win several international merit-based awards, including the Fulbright and the Commonwealth awards. Bernard is also a member of the Global Open Educational Resources Graduate Network (GO-GN) and the Heutagogy Community of Practice. His research interests include heutagogy/self-determined learning, opening up education, Massive Open Online Courses (MOOCs), Open Educational Resources (OER), open/digital scholarship, transformative research and transformative learning. The current paper contemplates other learners in Rwanda who won student loans and government sponsorship thanks to their self-determined and self-directed learning practices.

PUBLIC INTEREST STATEMENT

This paper presents and discusses practices of learning in absence of teacher's help among Rwandan teacher-trainees and their exceptional accomplishment. The participants learned, on their own, courses that were taught in the field of *Math-Physique* and took national examinations. After their results in the national exams were above the cut-off point for student loans and government sponsorship offered to graduates in the field of *Math-Physique*, these learners gained funds for their undergraduate education that had tactfully been denied to teacher-trainees. This enabled them to undertake their undergraduate education, which they completed in the fields of Physics and Applied Mathematics, respectively. One of the participants was completing a master's degree course in the field of Applied Mathematics. Both learners' subsequent earning increased at least three times more than what they earned prior to the completion of their undergraduate education they accessed, thanks to their learning without teacher's help.

time of the interview. The data revealed decision-making, dedication and perseverance as key attributes of these learners. The informants adopted different strategies vis-à-vis challenges they encountered when they were learning on their own, and none of them surrendered. This study may benefit underprivileged learners as well as educators and institutions that are interested in opening up higher education in under-resourced settings.

Subjects: Assessment; Bullying & Truancy; Educational Change & School Reform; Higher Education; Initial Teacher-training; Mathematics; Newly Qualified Teachers; Teacher-training; Work-based Learning

Keywords: open educational services; learners' needs; employability; capabilities development; self-determined learning; heutagogy; transformative learning; under-resourced settings; self-directed learning

1. Introduction

Despite Article 26 of the United Nations (1948) universal declaration of human rights that champions access to education as a fundamental human right and merit-based provision of higher education, underprivileged learners in Rwanda experience enormous challenges in their attempts to access this level of education. With the launch of the National Examination Council (NEC) in 1998, English as a Foreign Language (EFL) was introduced in national examinations for all secondary education fields. The results in the national exams for secondary education graduation were established as a benchmark for government sponsorship and student loans provision. These exams were made open to both formal and non-formal learners and answer sheets were anonymously marked/graded. All results in the national exams, the cut-off points for government sponsorship and student loans as well as winners of the sponsorship and loans were made public.

This openness and associated transparency were welcomed as opportunity by many underprivileged learners who could not access higher education otherwise. These learners hunted notes of secondary education courses and engaged in non-formal self-directed and self-determined learning, with an agenda to enrol in national exams in attempt to score above the cut-off points for student loans. This attitude was catalysed by opening national exams to non-formal learners and recognition of their performance in similar conditions as formal students. Different studies have suggested that such recognition triggers learners' engagement in learning (Lane & Van Dorp, 2011; Mulder, 2015; Yuan & Powell, 2013). Mulder (2015) developed a framework (5COE Model) for opening up education that consists of five components: Open Educational Resources (OER) (1), openness to learners' needs (2), open learning services (3), open teaching efforts (4) and openness to employability and capabilities development (5). Figure 1 illustrates the five components for opening up education.

The NEC's practice of opening national exams to non-formal learners in Rwanda can be mapped across Mulder's (2015) 5COE Model. As Figure 2 indicates, this practice overlapped between three components: openness to learners' need, open learning/educational services and openness to employability and capabilities development. Resources self-determined/self-directed learners engaged with when they were preparing for national exams were not OER and open teaching efforts were not directly available: learners engaged with notes, sometimes borrowed from colleagues, in their preparations for national exams and they did not have access to tutorial support. However, the NEC administered the national exams to non-formal learners along with formal students and all answer sheets were graded under same conditions for both formal students and non-formal learners. This practice constitutes open learning services, also known as open educational services (Mulder, 2015; Mulder & Janssen, 2013; Nkuyubwatsi, 2014a; Ouwehand, 2012), offered to non-formal learners, one of the components in the 5COE Model. The national examination takers who scored above cut-off points were awarded same certificates and student loans regardless of whether the beneficiary was a formal student or a non-formal learner. This benefit aligns with two components in Mulder's (2015)

Figure 1. Five components of open education: 5COE Model (Mulder, 2015).

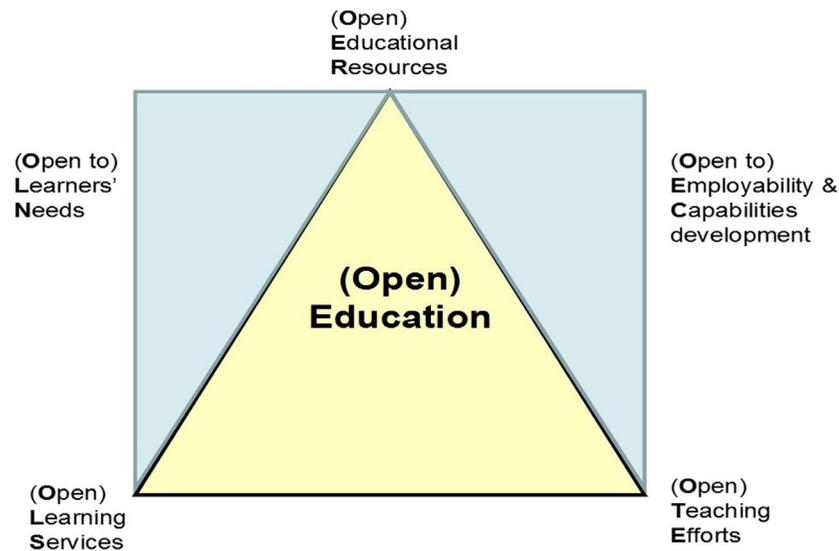
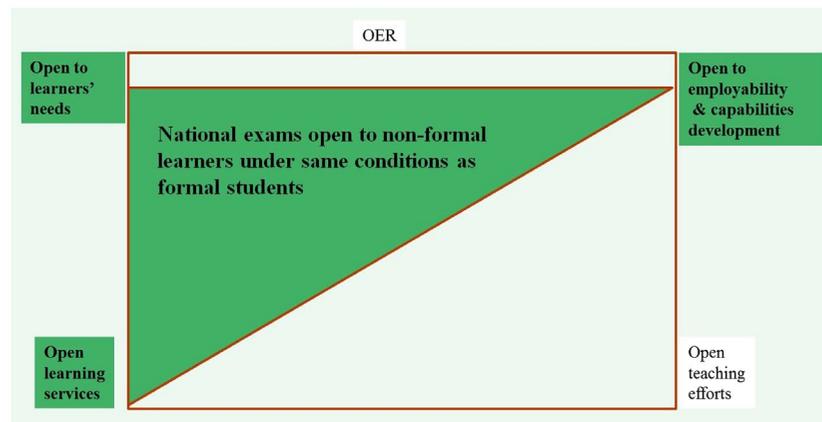


Figure 2. NEC's administration of national exams to both formal students and non-formal learners within the 5COE Model.



5COE Model: openness to learners' needs (1) and openness to employability and capabilities development (2).

2. First-hand experience with self-directed/self-determined learning in Rwanda

Grown up in a rural district of Rwanda in which no household had access to electric power, my personal learning experience has been a transformative migration that expanded across different learning modes: formal face-to-face learning, non-formal self-directed and self-determined learning based on reading materials, non-formal self-determined learning via radio and online and distance learning (Nkuyubwatsi, 2014b, 2014c). While my comprehensive learning experience cannot practically be covered in this paper, it is worth having a brief look at my transformative migration from non-formal self-directed and self-determined learning to formal higher education.

My self-directed and self-determined learning started in 1994 when all schools were closed due to the nightmare Rwanda experienced (The war and genocide that claimed lives of around a million Rwandans). I was in my third year of secondary education, in the field of teacher-training. Due to under-skilling in Rwanda, primary-level teachers and many other professionals were trained for their

respective professions during their secondary education. I was being trained to teach in a *franco-phone* primary school: in my primary education, I had only learned French as a Foreign Language. In my secondary education, French was the language of instruction. EFL was introduced in the second year of my secondary education and was officially limited to only two hours per week. Due to the shortage of EFL teachers at the time, there were no EFL classes for many semesters.

However, I could see the political influence of English: key figures in the new regime had emerged in countries that use English, either as a native language or as a language of instruction. Most of new leaders could not speak French, and I expected that English could eventually dethrone French as a primary foreign language in Rwanda. I engaged in learning English language on my own from the time the 1994 atrocities slowed down. I read extensively English language resources I came across with, noted and memorised new vocabulary and mocked conversational scenarios in an isolated wood. To apply my learning into real-life conversation, I sought a conversational partner, another secondary education student who had interest in learning EFL. We met a few hours a week to support each other in our ambitious learning of a foreign language that was not used and was not expected to be used in our remote learning setting. When the schools reopened, I had achieved an outstanding level in English language proficiency when compared to my classmates.

My engagement in EFL self-determined learning paid off three years after my completion of secondary education. The reforms introduced by the NEC, including the requirement to take EFL national examination, motivated me to prepare for national exams as a non-formal learner. With a monthly salary of about £25, I could not afford higher education without student loan. To get student loan, I had to learn on my own, take national exams within the newly established transparent system and score above the cut-off point for the loan. This time, I had access to a few EFL books and a dictionary that I had purchased on approximately £3. In addition, I had bought a radio at the cost of about £3.27, from my little salary. I had also to buy radio batteries at the cost of about 14p every two weeks. I listened regularly to the British Broadcasting Corporation and eventually the Voice of America which were broadcasting on Frequency Modulation. I took open EFL courses that were offered by the two radio broadcasting organisations, and I took this radio learning opportunity seriously. I had to schedule my daily activities to ensure I do not miss any broadcast session of the open EFL radio courses and this self-discipline was maintained on a regular basis. This self-determined learning was also transferred in learning all others courses I had to take national exams in.

I took national exams as a non-formal learner (known as *private candidate* or *candidat libre* in Rwanda) in the field of teacher-training in late 2000. The results were made public in early 2001 and my performance was above the cut-off point for student loans and government sponsorship that had been offered to teacher-trainees during the two previous years. More interestingly, EFL which I had formally learned least, but in which I had invested most in my self-determined learning was the course in which I scored the highest in the national exams: a solid A.

Regardless of their performance, all teacher-trainees who had taken national exams in 2000 were denied student loans and government sponsorship in 2001 (Nkuyubwatsi, 2014b). Originally, a senior official in Rwanda's Ministry of Education claimed that teacher-trainees and other secondary education graduates from "professional fields" were prepared for their respective professions, not for academic studies. He alleged that these graduates would fail academic courses taught in higher education, which could lead to the waste of limited funds for student loans and government sponsorship. This fallacy led to the denial of student loans to the targeted groups in 2001.

The claim was criticised for its discrimination against teacher-trainees and other marginalised secondary education graduates. This led to a new tactic: high performers from the marginalised fields of secondary education would be awarded student loans after two years in job. Yet, the denial of student loans was maintained in 2001, even for teacher-trainees who had scored high in the national exams and had been teaching for more than two years that were required. In 2001, I had already been teaching for three years. I sought my employment certificate and presented it, along

with other application documents, to an official who was in charge of higher education in the Ministry of Education (where all decisions related to exclusion of teacher-trainees were made). After noting that I had already been teaching for more than two years, the official in the Ministry of Education sent me to an institute of education, but refused to provide a written referral. An admission officer at the institute of education looked at my application documents but refused to accept them. He stated that two years I had worked as a teacher before taking national exams as a non-formal learner were not valid. I had to wait for another year, till October 2002, when the then National University of Rwanda (NUR) admitted a few teacher-trainees after the cut-off point was raised.

After being admitted at the NUR and awarded student loan and government sponsorship, I took and passed an EFL proficiency/placement test. This led to exoneration/exemption of a year-long EFL programme because my EFL proficiency was evaluated to be equal to or above the level expected from students who completed the programme. This enabled me to save one year in my learning with NUR: I completed my undergraduate education within four years from the initial admission at the university rather than five years that would have been required if I had not passed the EFL proficiency/placement test.

In 2003, the cut-off point for student loans to teacher-trainees was hiked further to make it almost three times higher than the cut-off point for student loans offered to secondary education graduates in the field of *Math-Physique*. Teachers and teacher-trainees were aware of the game around the rise of the cut-off point for student loans and government sponsorship offered to graduates in this field. Primary education full-time teachers started with a monthly salary of approximately £23 and many of them worked several months (sometimes years) without being paid. Teachers' salaries which were not paid by the end of a year were classified as arrears and many of these overdue salaries have not been paid up to now. An attempt to complain about these salaries sometimes led to bullying and threat of dismissal from job by local leaders. I personally had first-hand experience with this working environment, and still have overdue salaries as arrears that had never been calculated for payment, despite several attempts to seek related services between 2001 and 2006.

Some teacher-trainees borrowed and learned, on their own, notes of courses that were taught in other fields of secondary education study and retook national exams in fields that had lower cut-off points for student loans and government sponsorship for undergraduate education. A few of them were awarded student loans and government sponsorship after scoring above the cut-off points. The current paper focuses on two teacher-trainees who took national examinations in the field of *Math-Physique* to win student loans and government sponsorship. Before moving to the methods section, however, it is worth surveying briefly self-determined learning across the literature.

3. Self-determined learning

Also referred to as *Heutagogy*, self-determined learning is a learning approach that positions the learner at the centre of his/her educational transformation. Heutagogy/self-determined learning seems to have been introduced in academic literature by Hase and Kenyon (2001). According to Anderson (2010, p. 33), this new perspective denounces the dependency on the teacher promoted by pedagogy and andragogy and advocates the learner's capacity development. Learners' capacity can be developed as learners use a diversity of resources to solve problems that matter in their lives. Anderson (ibid) also argues that both online and offline resources can contribute to this learner's empowerment.

According to Canning (2010), students can empower themselves by taking the control over their own learning and developing their own learning philosophy. Guàrdia, Maina, and Sangrà (2013) outline best learning practices through which learners can be empowered. Those practices include, but are not limited to, self-regulation, self-pace and self-assessment, the practices that tend towards giving the learners the autonomy and control of their own learning. Nkuyubwatsi (2015) and Nkuyubwatsi, Ndayishimiye, Ntirenganya, and Umwungerimwiza (2015) highlight that self-determined learners exhibit special characteristics in their practices and attitudes. Those characteristics

include, but are not limited to, dedication, perseverance, prioritisation of learning and saying “no” to disempowering comments. Such learners see failure as a learning opportunity and work harder to achieve their vision, regardless of external perception of their goals as unachievable. Indeed, these attributes justify why some teacher-trainees in Rwanda did not surrender despite the disempowering claims from their top senior leader.

4. Method

The study is designed as a narrative study (Creswell, 2013). According to Creswell (ibid), a narrative study focuses on one or two individuals and gather data through the collection of their stories (p. 7). The current study is based on interview data from two learners who, during their secondary education, had been trained to teach at primary education level in Rwanda. After the cut-off point for student loans and government sponsorship awarded to teacher-trainees was hiked to about three times higher than the cut-off point for student loans and government sponsorship awarded to graduates in the field of *Math-Physique*, these learners borrowed notes from the latter field graduates. They learned the notes, mostly on their own, and took national examinations to win student loans for their undergraduate education.

Prior to conducting this study, I sought ethical approval from the University of Leicester’s Institute of Learning Innovation’s research ethics office (Ethical Application Ref: bn30-f6c6). Ethical approval was issued on 04 July 2014. I also sought written and signed informed consent from informants after being granted ethical approval and before starting interview sessions. Mobile phone interviews were conducted with the informants who participated from remote areas in Rwanda. An interview protocol which was written, first in English, then translated into Kinyarwanda, was used. The protocol had many of Creswell’s (2014, p. 194) interview protocol components: it had a heading that indicated the date of interview as well as the researcher and informant. It also had questions that include an icebreaker, main interview questions and a closing or thank you statement. I left some blank space between questions in which I recorded responses.

I followed Cohen, Manion, and Morrison’s (2011) recommendations on conducting interview: prior to the interview session, participants were informed of the nature and purpose of the interview as well as the likely duration of the interview session. In addition, I sought permission from the participants to have their responses recorded. The interview session was recorded using the phone loud speaker tool and *sound recorder*: computer software that records sounds. Then, I transcribed the recording and translated the extracts of the transcript that were of interest to English. The authenticity of the translation of both the interview protocol and transcript extracts was verified by experts in both English and Kinyarwanda.

5. Findings

The two informants grew up in socio-economically disadvantaged families that could not afford to pay their tuition fee at university level. Both informants borrowed notes and exercises from secondary education graduates in the field of *Math-Physique* and relied on these notes and exercises as learning content. The exercises included samples of national examinations administered in previous years which students had copied by hand. As illustrated in Table 1, some of the subjects taught in the field of *Math-Physique* were also taught to teacher-trainees but with fewer hours per week. Since secondary education curricula in Rwanda underwent consistent changes, the data in Table 1 reflect the curricula in the years in which the learners featured in the current study took national exams.

Comments that assumed that learning conditions from which these learners emerged and resulting accomplishment were hypothetical emerged in the past. In this particular study, the two informants expressed their willingness to voluntarily share their credentials for the purpose of verifying authenticity.

Table 1. Weekly frequencies of class sessions: Teacher-training vs. Math-Physique

Courses	Teacher-training (h)	Math-Physique
Maths	3	7 h
Physics	2	7 h
Chemistry	2	5 or 7 h (depending on the year in which the informant took national exams)
Biology	2	2 or 7 h (depending on the year in which the informant took national exams)
Geography	2	2 h
English	2	2 h
Educational psychology and teaching methods	3	NA
French	3	NA
History	2	NA

5.1. Case 1

Shyaka (pseudonym) is a secondary education Physics teacher at a 12-year basic education school. His current salary is five times more than what he was paid before attending university education. His school got connected to electric power about five years ago. The school has 12 desktop computers: 2 in the staffroom and 10 in a computer lab. The school also has 200 small laptops donated in the *One Laptop Per Child* project for the development of computer literacy among primary-education-level pupils and 1 printer. A photocopier machine and scanner are available in a nearby commercial centre that is located in a 20-min walking distance.

Shyaka completed his secondary education as a primary-education-level teacher-trainee in the 2003/2004 school year. In his final year of secondary education, he was already planning to learn courses taught in the field of *Math-Physique* and take national exams as a non-formal learner in this field to get student loan. Although he was trained to be a primary education teacher, he got hired as a secondary education teacher right after graduation from secondary education because this level of education also had a shortage of adequately trained teachers. The school he was working for had no access to electric power, but it had access to a generator that was switched on for two to three hours every evening for students to revise their classes. Radio, a landline phone and mobile phones owned by some teachers and school leaders were the most advanced technologies at the school and its surrounding setting.

Shyaka had to retake the national exams three times to be able to score above the cut-off point for student loans awarded to students who completed their secondary education in the field of *Math-Physique*: 2006, 2007 and 2008. In total, it took him five years of non-formal learning of courses that were taught in the field of *Math-Physique* to score above this cut-off point. He sometimes sought mentorship support from friends who had lent him notes but oftentimes, this support was not available because these mentors were away for their undergraduate education. When he could not understand some sections in the notes, he skipped them and reserved them for university holidays when his mentors could be available.

Shyaka started his undergraduate education in the field of Physics at the NUR (this university was merged with all other public higher education institutions in Rwanda to form the University of Rwanda: the only public higher education institution in the country since September 2013) in 2010. He graduated with a bachelor's degree in Physics in 2013. In the first and second years of his undergraduate education, he had to spend extra time on catching up with different concepts that were taught in the secondary education field of *Math-Physique* which were foundational to

undergraduate courses in Physics. He highlighted that he was aware of his lack of formal education background in the field of *Math-Physique* which he considered as a low point he had to deal with by investing extra time. After his undergraduate education, he became a Physics teacher in a secondary school. He argues that transformation comes from hard work and everything is achievable as long as the pathway to it is known and open.

5.2. Case 2

Shema (pseudonym) is a secondary education Maths teacher. His school is not connected to electric power, but it has a generator which is switched on for about 2 h in the evening for students to revise their classes. The school also has eight computers which are used in evening hours when students are revising their classes because that is only when the generator is switched on for the sake of saving fuel. The Internet can only be accessed at the school via a modem. The nearest Internet cafe is in about a 45-min bus trip. However, buses depart only early morning to return evening.

Shema took his national exams as a non-formal learner in the field of *Math-Physique* in 2004. At the time, he was a primary school teacher and his school did not have access to electric power. He had completed his secondary education as a teacher-trainee in 2002. It took him one year to prepare for the national exams as a non-formal learner in the field of *Math-Physique*. He borrowed notes from students who had completed their secondary education in the fields of *Math-Physique* and learned the notes on his own. He had neither teacher nor mentor to help him with the content understanding.

In his national exam preparation, Shema also had difficulties in understanding some sections of different courses. Unlike Shyaka who skipped the sections and exercises till his mentors came back for university holidays, Shema took breaks and came back to the difficult sections and exercises with full and fresh energy. He gave up his after-work resting hours and weekends to prepare for his national exams.

He won the student loan on first attempt which enabled him to start his undergraduate education in Applied Mathematics at Kigali Institute of Science and Technology (this institution also became part of the University of Rwanda since September 2013) in 2006. In his first year, he also had to spend extra time on catching up to the level of his classmates who had completed their secondary education in *Math-Physique*. Shema completed his undergraduate education with distinction in 2010. This enabled him to win another student loan for his master's degree he has already completed in Applied Mathematics at the University of Rwanda. However, due to the student loan crisis in Rwanda (Nkuyubwatsi et al., 2015), this student loan ended up being cancelled. Consequently, Shema had to find an alternative way of defraying the debt that could have been paid by the cancelled student loan and this delayed the release of his results in the master's degree course he completed.

His current salary is three times higher than what he was paid before attending university education. After completing his master's degree, he was planning to seek admission and funds for doctoral studies. He argues that own talent should be used at the fullest potential, and this is often inhibited by imitation.

6. Discussion

While different studies conducted on self-determined learning/heutagogy focused on learning that occurs in e-learning networks (Blaschke, 2012; Hase, 2009), this study discusses self-determined learning practices that occurred as a solitary journey undertaken to gain the right to formal higher education. This journey was undertaken in a setting where e-learning technologies were not deployed. Despite their location in a remote setting that had no access to electric power, the two informants engaged in self-determined learning in quest for student loans for their undergraduate education. They did not surrender despite the learning environment that was charged with social disempowerment (Lane, 2009; Lane & Van Dorp, 2011).

The two informants' self-determined learning was catalysed by the perceived possibility to enhance their capabilities and improve their employability. Once they have taken national exams in the new field of *Math-Physique* and scored above the cut-off point for student loans, the loan was guaranteed, through similar conditions as formal students. Yuan and Powell (2013) argue that future economic benefits as well as development of personal and professional identity are among major factors of motivation to learn. Since the informants could see economic benefit and professional and personal development if their performance in the national exams were above the cut-off point for student loans, they took responsibility as key agents in their own transformation through learning (Canning & Callan, 2010; Hase & Kenyon, 2007). The informants' decision to learn, on their own, courses that were taught in the field they had not been trained in during their secondary education and the subsequent dedication and perseverance led to outstanding accomplishment. They ended up scoring above the cut-off point for student loans, and this happened without dependency upon teachers (Anderson, 2010).

According to Blaschke (2012), self-determined learning/heutagogy tends to be rejected in academia due to many reasons including the reluctance to relinquish some powers to learners. This rejection may be based on misunderstanding of the concept of self-determined learning/heutagogy and its relation to pedagogy. Self-determined learning is often enabled by pedagogical artefacts such as content developed by teachers and services provided by teachers. In the current study, services such as invigilation of non-formal learners in national exams and marking their answer sheets were provided. When such services are offered to open learners, they are often referred to as open educational services (Nkuyubwatsi, 2014a; Ouwehand, 2012) or open learning services (Mulder, 2015; Mulder & Janssen, 2013). These services and the content produced by teachers such as notes the two informants borrowed from friends are clustered among pedagogical resources/assets (Nkuyubwatsi, 2015; Nkuyubwatsi et al., 2015).

Self-directed/self-determined learning of the two informants was also triggered by an effective use of political resources (Nkuyubwatsi, 2015; Nkuyubwatsi et al., 2015): the policy/decisions/regulations related to opening national exams to both formal students and non-formal learners (1), anonymous grading/marking of answer sheets (2), awarding student loans and government sponsorship based on performance in national exams (3) and releasing publicly the results in the exams, the cut-off points for student loans and beneficiaries of the loans (4). Although the latter decision may not have been received positively by low performers and those who like privacy, it reassured underprivileged learners that once they have performed high in national exams, they would not be replaced by privileged under-performers. This malpractice was alleged to have permeated university education in previous years. The allegations of discriminations based on socio-economic, ethnic and regional backgrounds seem to be accurate when considering the increase in underprivileged students, those from rural areas and low-income families across the country, and a more geographically distributed population in higher education institutions that followed the 1998 reform.

The accomplishment of the two informants also seems to demonstrate that assessment of non-formal learning for credit/qualification and related benefits may be more powerful than the release of educational resources without any attached value for learners. Different studies have revealed that the release of OER has not led to adoption of these resources (Conole, 2012, 2013; Ehlers, 2011; Glennie, Harley, & Butcher, 2012; Lane, 2010; McAndrew, Farrow, Law, & Elliott-Cirigottis, 2012; Ouwehand, 2012; Woert, 2012). This lack of adoption of OER has probably been caused by the lack of incentives to use these resources. Assessment of learning accomplishment of users of these resources for credit may be a powerful incentive for learners' adoption of the resources. Lane and Van Dorp (2011) highlight that adult learners want to have their informal learning converted into formal credits, certificates and qualifications. Although the resources of courses taught in the field of *Math-Physique* were not provided to the two informants during their formal education, provision of student loans and the resulting undergraduate education qualification constituted a powerful value that motivated them to hunt the resources. Hence, assessment of non-formal learners' accomplishment for credit, qualification and related benefits seems to be a strong enabler of self-determined learning.

7. Conclusion

The reforms introduced by the Rwanda NEC since 1998 triggered self-directed and self-determined learning practices among underprivileged learners. Despite the 2001 attempt to exclude teacher-trainees from beneficiaries of student loans and government sponsorship for undergraduate education, some of secondary education graduates in the field of teacher-training did not surrender their desire to learn and reach the highest level. In this study, an epic migration of two teacher-trainees who sought and learned on their own notes of courses that were taught in the field of *Math-Physique* was discussed. Both learners took, as non-formal learners, national exams administered to formal students in the field of *Math-Physique*. After scoring above the cut-off point for student loans and government sponsorship offered to graduates in this field, the two learners enjoyed the same privileges as formal students: they gained funds for their undergraduate education that had been denied to teacher-trainees. After the completion of their undergraduate education, their earning increased multiple times. This study provides insights into empowering underprivileged learners who are dedicated and want to persevere in their transformative migration through self-directed and self-determined learning. The study may inspire practices that open up higher education to underprivileged learners, especially those in under-resourced countries.

Acknowledgement

I am profoundly grateful to the informants for their exceptional cooperation: informants had to walk relatively long distances to print out the informed consent form and scan the completed and signed copies so that they email back the scanned copies. I highly appreciate their generous offer of their precious time and efforts to enable the conduct of this study within institutional research ethics standards.

Funding

The authors received no direct funding for this research.

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Citation information

Cite this article as: The outcome of constructive alignment between open educational services and learners' needs, employability and capabilities development: Heutagogy and transformative migration among underprivileged learners in Rwanda, Bernard Nkuyubwatsi, *Cogent Education* (2016), 3: 1198522.

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