



Teacher Educators and Student Teachers' Perceptions on the Implementation of Learner-Centred Pedagogy in Higher Education in Rwanda

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Most of research conducted on Learner-Centered Pedagogy (LCP) in sub-Saharan region recommend further exploration of its implementation. This study sought to look into it with particular interest in learner-centred application at University of Rwandan - College of Education. The study adopted a mixed method approach with a sample size of 278 teacher educators and student

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teachers. The findings revealed teachers' positive perceptions of learner-centred pedagogy with a grand mean of 3.70 and students' moderate perceptions with a mean of 3.01. Likewise, the findings highlighted the implementation of LCP at a moderate level with a mean of 3.23. Results bespeak that LCP was influenced by teachers' heavy workload (Mean: 4.07), limited resources and facilities (Mean: 4.00), students' reluctance to be active participants (Mean: 3.47), insufficient time allocated to lessons (Mean: 3.47), lack of funding (Mean: 3.33) and perceived students' low ability (Mean: 3.17). Coping with any of these challenges will yield effective LCP implementation in higher education.

Keywords: Constructivism; learner-centred pedagogy; student teachers; teacher educators; higher education.

1. INTRODUCTION

Globally, the need to improve the quality of education, especially for teacher education offered in higher learning institution (HLIs), has been driven by the desire for better learning outcomes and educational experiences for all learners [1]. In this vein, UNESCO [2] reasons that Competence - Based curriculum has gained much popularity in many parts of the globe - without exception to Africa, because it involves the paradigmatic shift from teacher-centered and knowledge-centrist teaching to learner-centered and outcome-focused pedagogies. In line with this, learner-centered pedagogy imposes an invaluable role in teaching and learning for many governments particularly in developing countries to ensure that by 2030 they have quality education at all levels. For instance, Rwanda has adopted a competence-based curriculum at primary school level, which is believed to promote the development of various tangible and critical skills [3]. It is equally in the framework of meeting the fourth Sustainable Development Goal [SDG] of ensuring inclusive and quality education for all and promoting lifelong learning at Higher Education level that learner-centred pedagogy is being encouraged [4]. This is particularly the case within University of Rwanda, College of Education, which is responsible for training secondary school teachers for the entire country. For these trainees, being a learner-centered teacher should be the main goal for each [5] to help learners be equipped with knowledge, skills and attitudes necessary to cope with the global current issues [6].

According to UNESCO [7], Competency-based curriculum is more learner-centered and is adapted to students' needs than traditional knowledge-centered education is. Learner-centred pedagogy derives from the constructivist view of learning [8,9]. Within this pedagogical framework, it is assumed that the learner takes a

more active role in the construction of knowledge and places him/her at the centre of the learning process [10]. It has been argued that where teacher preparation in higher education is more closely related to the expected school practice, graduate teachers are more likely to have a great impact on the students they will be teaching [11]. However, there has been debate about the utility of learner-centred pedagogy within many developing countries especially those in sub-Saharan Africa. For instance, Guthrie [12] opines that the promotion of learner-centred pedagogy within former colonies in Africa "should be seen as representing a process of westernization disguised as quality and effective teaching by recognizing that western values are embedded in learner-centred pedagogies". Conversely, previous research noted a number of barriers that hinder the implementation of learner-centred pedagogy [13]. These include without limitation to lack of time and self-efficacy about learner-centred pedagogy, teachers' attitude toward this new method [14]. It has also been argued that lack of funding, limited resources, and large class size inhibit the implementation of learner-centred approaches [15] while, in the same vein, Hester et al. [16] found out that factors such as lack of resources, language and class size inhibit the effective implementation of learner-centred teaching. On the contrary, Guthrie [12] has argued that even with increased funding, as long as the entrenched cultural beliefs that school knowledge is fixed, objective and detached from the learner and that the role of the teacher is to transmit this knowledge, it is inconceivable to implement learner-centred pedagogies. Other authors [17], have extended the list of such challenges of implementing learner-centred education to include lack of teacher educators' willingness to apply it, lack of students' motivation, students' perception of the learning process, teacher educators' and student teachers' heavy workload, lack of appropriate teaching

environment, curriculum and the teaching system.

It is equally important to point out that even in developed countries such as the United States, implementation of learner-centred pedagogy rarely constitutes entire lessons. For example, Guthrie [12] reported a study which compared the use of teacher-centred (lecture-methods) in Nepal and the United states. The study found out that the lecture method took up 40% of lessons in the United and 78% of the lessons in Nepal (Guthrie, 2011, citing Pfau 1980). This suggests that there are other factors which underpin teachers' pedagogical decisions when planning lessons.

2. LEARNER-CENTRED PEDAGOGICAL FRAMEWORK

Generally, learner-centered education has the potential to meet the needs of individual students and better prepare them for a rapidly changing global world [18]. Learner-centred pedagogy is based on the theory of knowledge known as constructivism. The latter posits that knowledge emerges through interactions and experiences among knowers and through the knower's own idea [19]. In this case, knowledge is not external to the knower but rather, the latter is highly instrumental in the process of knowledge generation. Knowledge is created through a process of new information, by interacting with the prior knowledge and experiences of learners and teachers who facilitate knowledge generation and sense-making [20]. Hoover [21] claimed that learners construct new understandings using their current knowledge to mean that the learners' prior knowledge influences their new knowledge. He also noted that learning is an active process in which learners negotiate their understanding in the light of what they experience in the new learning situation.

According to Twomey [22], four principles of constructivism are identified that (1) learning depends on what individuals already know; (2) new ideas occur as individuals adapt and change their old ideas; (3) learning involves inventing ideas rather than mechanically accumulating a series of facts; (4) meaningful learning occurs through rethinking old ideas and coming to new conclusions about new ideas which conflict with our old ideas [22].

Furthermore, constructivism is both an active process and a personal representation of the

world. Within this theory, knowledge is constructed from the experience and is modified through different experiences [23]. The proponents of constructivism argue that learning is represented as a constructive process in which the learner builds an internal illustration of knowledge, a personal interpretation of experience. Taken together, constructivism posits that learning is an active process in which experience has an important role in understanding and grasping the meaning.

Within school systems, quality education is the most predominant mission of higher learning institutions and the use of appropriate teaching strategies may help achieve this end. This is particularly the case of Colleges of Education responsible for teacher training. It is in this respect that Learner-Centred Pedagogy was perceived as one engines for improving the quality of education in Rwanda whereby it was launched in Higher Education Institutions (HEIs) in 2007 with the introduction of modular system. The University of Rwanda, College of Education (previously called, Kigali Institute of Education) was the first to adopt and implement this approach in its programs. However, little is known about how this pedagogical orientation was perceived then and what experiences both teacher educators and student teachers have had over the years since its implementation.

The study sought to find answers to the following research questions:

1. What are the perceptions of teacher educators and student teachers about the LCP at the College of Education/ University of Rwanda?
2. What is the actual implementation of LCP in the College of Education, University of Rwanda?
3. What are the challenges associated with the implementation of LCP in Rwanda higher education?
4. What is the relationship between the challenges associated with the LCP and its actual implementation at the College of Education/ University of Rwanda?

3. RESEARCH CONTEXT

The study was conducted at University of Rwanda, College of Education. The choice of this higher learning institution connected with the fact that it has been the lead institution in introducing and advocating for the implementation of the

Learner-Centred Pedagogy in higher education. More so, the targeted college offers teacher training programmes at undergraduate and postgraduate levels (Diploma, Bachelor, Master and PhD) in the field of Mathematics and Science Education, Humanities and Language Education, Early Childhood Education and Inclusive and Special Needs Education. In 2007, this college introduced the LCP to emphasize the paradigm shift from the teaching to the learning framework in Rwanda higher education. Ever since, teacher educators had some continuing personal development training on this new paradigm so as to improve the quality teaching and learning of pre-service teachers. Last but not the least, the researchers' wish to publish these results is in tandem with UNESCO [6] recommendations that the curriculum for a bachelor's degree should include courses in holistic ways of knowing, more inclusive approaches to human-community interactions, and respect for cultures and knowledge systems.

3.1 Methodology

The study used both qualitative and quantitative methods to interpret the data in light of Creswell [24]. The use of this mixed-method approach enabled the investigators to draw on all possibilities and provided a broader perspective to the study [25]. The qualitative approach was mainly used to manage analysis of secondary sources which could not be done by only the use of quantitative method.

To measure the perceptions of teacher educators and student teachers, the researchers constructed various items which covered the important aspects or indicators of LCP. A Likert scale questionnaire was developed. In order to improve the questionnaire instrument, the researchers conducted a pilot on 10 participants out of the target population as used in Nsengimana et al. [26]. The reliability of the instrument was calculated basing on Chronbach's alpha coefficient and the calculations gave $\alpha = 0.74$ for the questionnaire given to students and 0.83 for the questionnaire given to teacher educators. The values obtained indicate that the instrument used was reliable. According to Hamdan-Mansoura et al. [27], a research instrument is reliable if the calculation of Cronbach's alpha gives a value > 0.6 . Finally, questionnaire items were constructed and respondents had to choose options corresponding to their perceptual levels from the five that were stated in the light of Likert scale.

The population of this study comprised of academic staff members and second year diploma student teachers at the College of Education, University of Rwanda. Of the 1007 eligible members, a sample size of 278 respondents was targeted based on Morgan's [28] table indicating the right sample size for research population. In this regards, 30 teacher educators and 248 student teachers were selected to participate in this study. The data collection procedures involved administration of questionnaire to the student teachers and the teaching staff members. Interviews with the Dean of school and Heads of the Departments were conducted rightly.

3.2 Data Analysis

Analysis of data was done by calculating frequencies, mean values and standard deviations among items using SPSS. In addition, quantitative approaches concerned the use of Pearson's Correlation Coefficient (r) to ascertain whether there exist a relationship between the proposed challenges and the perceived implementation of LCP at College of Education. Data were analysed using descriptive statistics in order to have accurate insights of teacher educators and student teachers about LCP, its perceived implementation and challenges encountered.

Analysis was conducted in light of the research questions. The grand mean was calculated to find the mean range of perceptions based on Likert Scale. According to Seabrook [29], when the mean falls between 1.00-1.800, the range level is very low and stands for the answer option of strong disagreement; when it falls between 1.71-2.60 the range level is low and stands for the answer option of disagreement; when the mean falls between 2.61-3.40 the range level is very moderate and stands for the answer option of neutrality; when the mean falls between 3.41-4.20 the range level is high and stands for the answer option of agreement while when it falls between the mean 4.21- 5.00 the range is very high and stands for the answer option of strong agreement. The research question related to the challenges associated with the implementation of LCP in Rwanda higher education was answered by calculating the Pearson's Correlation Coefficient. The latter helped to check the level of interplay between the challenges encountered by teacher educators and the implementation of the LCP. Data from interview were tape recorded and then thematically analysed in accordance with the research objectives and questions.

4. RESULTS AND DISCUSSION

4.1 Respondents' Perceptions of LCP in Higher Education

Based on the Likert scale interval analytical approach used in the study, teacher educators were positive about LCP in general with a grand mean of 3.70 and a standard deviation of 0.94. This grand mean was within the range 3.41 - 4.20, which is considered to be high. However, on certain items, teacher educators expressed perceptions which were moderate. The majority of those teacher educators were ambivalent when they were asked to state if LCP was conducive to their subject areas. The mean obtained on this element was 3.27 which is lower than the moderate interval of 2.61-3.40. The teacher educators were also non-committal in relation to whether they perceived that they had enough knowledge and skills about LCP. On this aspect, the teacher educators demonstrated a moderate perception with a mean score of 3.37.

The perceptions of students about LCP were moderate in general. The findings indicated an average (grand mean) of 3.01 (moderate ranged from 2.61-3.40). The standard deviation calculated was 1.22 which is greater than the standard deviation of teacher educators (.94). The standard deviations indicate that students' views were more scattered than those of their educators. The general perception means score for teacher educators as shown earlier was high with a mean of 3.70 and moderate for students with a mean of 3.01. These results indicate that both teacher educators and students had a positive perception towards LCP [30]. Table 1 shows the opinions of teacher educators and students on different statements proposed to measure their perceptions on LCP in higher education.

From Table 1, teacher educators and students had some similar perceptions on certain aspects of LCP but diverged on some other aspects. First, the majority of teacher educators and students accepted that LCP requires them to work hard; that it does not allow teacher educators to provide a great amount of content, and that teacher educators as well as students find LCP too much time consuming. The rate of

agreement on this statement was respectively 80% and 56.4%. Teacher educators and students differed on three aspects in their perceptions towards LCP. Firstly, the majority of teacher educators were interested in the coverage of the planned content (93.3%) while a big number of students said that their teacher educators were not interested in covering the content planned in the module (49.2% of disagreement against 40.3% of agreement). In addition, the standard deviation of the answers given by teacher educators on this statement was smaller than the standard deviation obtained from the answers given by students (.71 against 1.38). Both standard deviations show that teacher educators were more coherent in their answers than students.

Following closely, teacher educators accepted that LCP was not conducive in their subject areas (63.7% of agreement against 36.7% of disagreement) while the majority of students did not accept this statement (49.8% of agreement against 37.5% of disagreement). The situation shows that teacher educators' perceptions towards LCP were not good on this aspect. They tried to find explanations in the subjects they taught. Such a situation is convergent with [14] research finding not supporting the equal use of the LCP across all subjects.

Thirdly, teacher educators and students did not agree that LCP required the materials that were not available for the school department. The majority of teacher educators (73.3%) agreed with the statement while only 37.5% of students supported this idea. The findings of this study indicated that limited resources and facilities was one of the challenges encountered by teacher educators in applying LCP (86.7% of agreement against 13.3% of disagreement). The responses given by students on this statement (49.2% of disagreement against 37.5% of agreement) can be explained by their evolving status, having access to critical information around LCP. Teacher educators are aware of the availability or absence of such materials in their respective departments. However, this is not a reason for not applying the LCP in their lessons. In the absence of real objects, improvisation could be a viable solution [31].

Table 1. Perceptions of teacher educators and students on LCP

Items	Category	Mean	SD	N	Agreement		Disagreement		Undecided	
					N %	N %	N %	N %	N %	
Teacher educators are interested in covering the content planned in the module description.	T	4.10	.71	30	28	93.3	2	6.7	0	0
	S	2.83	1.38	248	100	40.3	122	49.2	26	10.5
LCP is not conducive in the taught subject areas	T	3.27	1.41	30	19	63.3	11	36.7	0	0
	S	2.79	1.29	248	93	37.5	121	49.8	34	13.7
LCP requires teacher educators and learners to work hard.	T	3.83	.87	30	24	80	4	13.3	2	6.7
	S	3.40	1.18	248	140	56.4	76	30.7	32	12.9
LCP does not allow the teacher to provide a great amount of content	T	3.73	1.04	30	23	76.7	7	23.3	0	0
	S	3.18	1.21	248	119	47.9	95	38.4	34	13.7
LCP is too time consuming.	T	4.03	.80	30	27	90	3	10	0	0
	S	3.35	1.25	248	144	58.0	71	26.7	33	13.3
LCP requires the materials that are not available at the school department	T	3.73	1.14	30	22	73.3	8	26.7	0	0
	S	2.84	1.23	248	93	37.5	122	49.2	33	13.3
In LCP students are passive and not always responsible	T	3.77	.97	30	24	80	6	20	0	0
	S	2.39	1.39	248	153	61.7	77	31.0	18	7.3
LCP is rewarding	T	3.73	.74	30	23	76.7	3	10	4	13.3
	S	2.98	1.07	248	87	35.0	95	38.3	66	26.7
Teacher educators have enough knowledge and skills about learner centred instruction	T	3.37	.89	30	17	56.7	7	23.3	6	20
	S	3.23	1.07	248	104	41.9	69	27.9	75	30.2
Teacher educators demonstrate willingness to implement LCP	S	3.02	1.15	248	101	40.7	91	36.7	56	22.6
	T	3.47	.90	30	20	66.7	7	23.3	3	10

Key: (T = Teacher educators; S = Student)

Table 2. Teacher educators' and students' Views on the LCP implementation

Items	Category	Number	Agreement		Disagreement		Undecided	
			N	%	N	%	N	%
Teacher facilitates students to get knowledge rather than serve as a transmitter of knowledge.	S	248	28	93.3	2	6.7	0	0
	T	30	111	44.7	120	48.4	17	6.9
Teacher educators keep classroom arrangement so well organized that it eases the students' interaction.	S	248	8	26.6	11	36.6	11	36.6
	T	30	126	50.8	91	36.7	31	12.5
Teacher educators tolerate errors and consider them as a natural part of the learning process.	S	248	22	73.4	4	13.3	4	13.3
	T	30	105	42.3	115	46.4	28	11.3
Teacher educators give opportunity to students to identify their needs.	S	248	7	23.3	21	70	2	6.7
	T	30	116	46.8	103	41.5	29	11.7
Teacher educators let each student work at his/her own pace.	S	248	2	6.7	23	76.6	5	16.7
	T	30	112	45.2	109	43.9	27	10.9
Teacher educators use methods that require higher order thinking.	S	248	8	26.6	5	16.7	17	56.7
	T	30	121	48.8	99	39.9	28	11.3
Teacher educators use practical work as predominant method of evaluating students.	S	248	9	30	16	53.3	5	16.7
	T	30	127	51.2	98	39.5	23	9.3
Teacher educators adjust instructional objectives to match with every student's abilities and needs.	S	248	10	33.3	5	16.7	15	50
	T	30	123	49.6	92	37.1	33	13.3
Teacher educators help students identify their own problem that need to be solved.	S	248	9	31.0	13	44.8	7	24.2
	T	30	144	58.5	64	26	38	15.5
The students are passive, they only study the content prepared in their course handouts.	S	248	25	83.3	5	16.7	0	0
	T	30	97	39.3	129	52.2	21	8.5

Students were asked whether their teacher educators demonstrated a willingness to implement LCP. Students accepted the statement with a moderate percentage (40.7% of agreement against 36.7% of disagreement). The rate of abstention at this statement is 22.6%. As for the teacher educators, a greater number of 66.7% self-reported affirming that they are willing to implement the new approach with a little abstention of 10%.

4.2 Perceived Implementation Level of LCP in Higher Education

The second objective of this study was to explore how LCP was embraced and implemented in higher education. The findings indicate in general that LCP was implemented at a moderate level that is, grand mean of 3.23 (with a standard deviation of 0.81) and 3.22 (with a standard deviation of 1.23) respectively for teacher educators and students.

The teacher educators and students varied in the views about implementation of some aspects of LCP. Table 2 indicates the teacher educators' and the students' agreement and disagreement on various aspects. Teacher educators and students shared a common understanding of a good implementation of LCP in 19 items. Even though the general level of implementation of LCP was moderate (as shown by the grand mean) for both teacher educators and students, findings indicated three items which were considered low and two items which were considered very high by teacher educators. First, it was found that teacher educators did not organize individual conference to facilitate students identify their needs. The mean calculated on this item was 2.47 and it is considered low with reference to Likert Scale intervals presented above in the methodology. The calculation of frequencies and percentages for this item indicated that the majority of teacher educators did not agree with this statement at 70%.

Secondly, 'letting each student work at his/her own pace' was another item where they had different views. Teacher educators did not agree with the statement at 76.6%. The Mean calculated at this statement indicates a level of its implementation which is 2.13, the mean

considered low with reference to Likert scale intervals presented in the methodology). Thirdly, teacher educators did not accept that they encouraged their students to construct/build their own handout based on the feedback from group discussions and their own research (83.3% of disagreement against 13.3% of agreement). The mean calculated at this statement is 2.13 and was considered low with reference to Likert scale intervals presented in the methodology).

The findings indicated that both teacher educators and students converge on two items. All teacher educators (100%) posit that teacher educators set the module objectives at the beginning of a semester and stuck to them (Mean: 4.60) and that teacher educators encouraged students to ask questions (Mean: 4.30). The students' agreement was 79.9% and 63.7% respectively. In short, the results of the study revealed that LCP was not satisfactorily applied in the College of Education of University of Rwanda. Boyer [32] and Machemer and Crawford [10] highlighted that the effective implementation of the LCP requires that the learner to be assigned the role of an active player in the construction of knowledge and be placed at the centre of the learning process. However, as the results from the present study indicate, some aspects and principles of LCP were not satisfactorily perceived at University of Rwanda - College of Education.

4.3 Perceived Challenges Associated with Implementation of LCP

The findings indicated that 12 issues were highlighted by teacher educators as the major challenges they encountered when applying LCP as presented in Table 3.

As indicated in Table 3, teacher educators reported twelve major challenges that thwarted the implementation of LCP, ranging from teacher's heavy workload (Mean: 4.07), limited resources and facilities (Mean: 4.00) to students' reluctance to be active participants (Mean: 3.47), insufficient time allocated to the lessons (Mean: 3.47), lack of funding (Mean: 3.33) and perceived students' low ability (Mean: 3.17). The challenges have been previously reported [33,34,14]. This shows that these were not only isolated to Rwanda.

Table 3. Challenges in applying LCP by order of importance

Challenges	Mean	SD	Agreement (%)
Teacher’s lack of time due to heavy workload	4.07	.69	93.3
Limited resources and facilities	4.00	.91	86.7
Big class size	3.90	.99	80
Students’ negative attitudes towards LCP	3.80	1.06	73.4
Lack of conducive learning environment	3.60	1.13	70
Assessment requirements	3.53	.97	73.4
Students’ complaint about LCP related challenging activities	3.53	.90	66.7
Students’ prior learning style	3.53	.97	66.7
Students’ reluctance to be active participants	3.47	.81	66.7
Insufficient time allocated to the lessons	3.47	1.19	63.3
Lack of funding	3.33	.99	56.7
Students’ low ability	3.17	.91	50

Table 4. Correlation between LCP and its related challenges

Correlations		Mean of statements of implementation of LCP	Mean of statements of challenges on implementation of LCP
Mean of statements of implementation of LCP	Pearson Correlation	1	-.590**
	Sig. (2-tailed)		.006
	N	30	20
Mean of statements of challenges on implementation of LCP	Pearson Correlation	-.590**	1
	Sig. (2-tailed)	.006	
	N	20	20

** Correlation is significant at the 0.01 level (2-tailed)

4.4 Relationship of the Perceived Challenges and Implementation of LCP

To assess the relationship that existed between the LCP and the challenges encountered by teacher educators in its implementation, it was necessary to calculate the Pearson’s Correlation Coefficient between both variables (LCP and challenges encountered by teacher educators). Results are presented in Table 4.

Table 4 indicates the Pearson Product Moment Correlation Coefficient results for the relationship between LCP implementation and challenges encountered by teacher educators in its implementation. According to Taylor [35], labeling systems exist to roughly categorize r values where correlation coefficients (in absolute value) which are ≤ 0.35 are generally considered to represent low or weak correlations, 0.36 to 0.67 modest or moderate correlations, and 0.68 to 1.0 strong or high correlations with r coefficients ≥ 0.90 very high correlations. Table 4 indicates a moderate negative correlation (r = -

.59) between LCP and challenges encountered by teacher educators in its implementation. Negative values according to Taylor [35] indicate that as variable x increases, variable y decreases. This means that as the challenges encountered by teacher educators increase, the level of implementation of LCP decreases.

Researchers tried to calculate the Coefficient of Determination (r^2) because it helps to get an idea of how accurate any prediction [36]. Findings indicated $r^2 = .34$. This means that 34% of implementation of LCP is directly associated with the challenges explained in this study. Research deduced that the factors highlighted in this study influenced the implementation of LCP at a percentage of 34% only. This means that there exists other intervening variables that influence the implementation of LCP. O’Neill and McMahon [17] indicated that there are other obstacles that impede the effective implementation of the learner- centred pedagogy such as unavailability of library spaces, laboratories, and computers.

5. CONCLUSION

The present study explored teacher educators' and students' perceptions of LCP and challenges associated to it. Results indicate that the general perceptions means scores for teacher educators was high with a mean of 3.70 while the students expressed moderate perceptions with a mean of 3.01. With perception mean score of 3.35 for both groups, this study indicated that generally, the teacher educators and the students at the University of Rwanda, College of Education perceived the LCP as a positive approach [30]. This is unsurprising given the numerous efforts to promote LCP in many developing countries through many initiatives [12,15,37] so that students can have control over their learning guided by the teacher, generally motivating them to play an active role in their learning [5].

The findings also indicated that LCP was perceived to be implemented at a moderate level. This level is moderate with a grand mean of 3.23 (with a standard deviation of 0.81) and a grand mean of 3.22 (with a standard deviation of 1.23) respectively for teacher educators and students. In other words, the results revealed that the LCP was perceived to be unsatisfactorily applied in the College of Education of University of Rwanda although it was also revealed that both teacher educators and students had high positive perceptions. Furthermore, several barriers were associated with the perceived use of the LCP. The most highlighted challenges included: teacher's heavy workload, limited resources and facilities, large class size, assessment requirements, students' prior learning style, students' reluctance to be active participants. Previous studies have identified similar challenges [12]. In addition, Guthrie [12] also highlighted the influence of revelatory epistemology which may be linked to students' reluctance to be active participants.

Further, the study indicated that there was a moderate negative correlation ($r = -.59$) between LCP and challenges encountered by teacher educators in its implementation. It was noted that the factors highlighted in this study influenced the implementation of LCP at a percentage of 34% only. This is because there existed other variables influencing implementation of LCP that were not tackled in this study. As society's attitudes play a prominent role in implementing appropriate learning methods, [38], there are implications to consider based on findings in this study. While LCP is positively considered at policy level, there are perceptual, cultural and

contextual factors which should be considered when adopting it to ensure that implementation is more realistic.

As a mixed methods study of this type is instructive, future studies could examine whether the dualism of perception and real classroom practice is meaningfully interrogated. This is important because people's perceptions of pedagogical innovations may not always and easily be translated into practice. It could be also important to consider how teacher educators and student teachers creatively adapt elements of LCP in a more culturally relevant and responsive fashion within the Rwandan context. Taken all in all, it is important to comply with UNESCO [6] that there must be enhancement for the articulation between the curriculum and the latent social and environmental issues of our time, both locally and globally. Put another way, it is time for Higher Education Institutions (HEIs) to make sustainability and SDG literacy a core requisite for all faculty members and students. Not withstanding the presented results obtained at the end of 2016 and beginning of 2017, related studies could be carried out to investigate changes implemented at the University of Rwanda ever since. Such changes could be explored in a cross sectional or longitudinal study to bridge some gaps in this research.

CONSENT AND ETHICAL APPROVAL

Ethical considerations were adhered during the recruitment and administration of the questionnaire. Student participants were assured that their participation in the study was not going to have any bearing on their studies. They were assured that it was their right to participate in the study if they wished and would be contributing to a better understanding of pedagogical aspirations and realities related to learner-centred education.

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COMPETING INTERESTS

Authors have declared that no competing interests exist with respect to this research authorship, its publication or the like.

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