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### RESEARCH ARTICLE

#### ADULT EDUCATION PROGRAM IMPLEMENTATION FACTORS AND ADULT LITERACY LEARNING OUTCOMES IN RWANDA A CASE OF GICUMBI DISTRICT

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#### Abstract

The research assessed adult education program implementation factors and adult literacy learning outcomes in Gicumbi District, Rwanda. Specifically, the research identified teaching methods that affect adult literacy learning outcomes in Gicumbi District, Rwanda, established the extent of adult literacy learning outcomes in Gicumbi District, Rwanda and assessed the relationship between adult education program implementation factors and adult literacy learning outcomes in Gicumbi District, Rwanda. The population in this study consisted of 4625 respondents, while their sample size was 368. Sample size determination was done by using Yamane formula. Descriptive survey design was adopted by the researcher as the study wanted to obtain insight for basic information provision in the study area. This study used questionnaire, interview, and observation to gather data. The questionnaire was administered to instructors and learners while the interview was given to District Director of Education, District Education Officer and Sector Education Officers. It used purposive, simple random sampling and stratified methods. The data of the study were analyzed in tables and charts by relying on descriptive statistics. The researcher used statistical tools like means, percentages, standard deviations, correlation coefficients and coefficients as regression models. IBM SPSS Version 21 was used to organize and summarize data with accuracy and finding evidences assurance. Both quantitative and qualitative methodologies were used, including content analysis. Regarding the first objective, results indicate that 74.9% strongly agreed that their instructor puts them in a small group to complete tasks, 64.2% strongly agreed that they take an active role in their learning by setting their own goals, 75.6% strongly agreed that their instructor uses games to increase their motivation, and 88.1% strongly agreed that they act out specific roles to learn different concepts. The implication of this is that the instructors use learner-centered teaching methods in order to improve adult literacy learning outcomes. For the second objective, 86.6% strongly agreed that improved learners' living standards indicate adult literacy learning outcomes; 74.9% strongly agreed that an increased number of small businesses indicates adult literacy learning outcomes; 75.6% strongly agreed that increased digital communication indicates adult literacy

learning outcomes; and 63.2% strongly agreed that improved health practices indicate adult literacy learning outcomes. Results on the effects of teaching methods on adult literacy learning outcomes in public adult literacy centres in Gicumbi District. The study revealed a strong positive relationship between group learning, self-directed learning, and role-playing, as well as between game-based learning and improved learners' living standards, small business growth, and digital communication. The positive correlation was less than 0.05, indicating that adjustments in group learning and self-directed learning positively impacted these factors. The study also found a significant positive correlation between game-based learning and improved learners' living standards, small business growth, and high attractiveness rate. This implied that there is a positive correlation among adult education factors and adult literacy learning outcomes. The Pearson's p value was than 0.05. The researcher recommended that the Ministry of Education should provide robust government, support, clear guidelines, and infrastructure for adult education programs. Rwanda Basic Education Board should involve NGOs and local communities and authorities in monitoring and evaluating the functioning of adult education at grass root level. Gicumbi District should use quality materials, well-trained teachers for improved effectiveness.

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### **Introduction:-**

Lack of education hinders children from income, health and access to opportunities (Anderson,2019). However, there are nearly 773 million illiterate adults in the world (UIS,2023). Nine (9) million English people between the age range of 16 and 65 have difficulty understanding simple written facts or with basic quantitative reasoning. For instance, they could find it difficult to determine how much gas is left in the tank or to completely understand the instructions on an aspirin container. The problem of low skills reduces production of the citizens and employability. It also contributes to equality and social exclusion issues (OECD,2020).

Illiteracy has the impact on the person's ability to totally contribute to the world development. In the US, about 18% of adults lack functional literacy. Compared to other US adults, Hispanics, the elderly, and those serving prison sentences are more likely to have poor literacy rates. Education, social background, learning English as a second language, learning difficulties, and criminal activity are all significant elements that affect the development of literacy. Numerous illiteracy-related causes and effects are interconnected and cyclical. Furthermore, ignorance is passed down from parent to child and increases the likelihood of unemployment and poverty. The best approaches to increase literacy are through adult literacy programs that include individualized training and a well-developed curriculum. The United States will need to work with organizations, public schools, governments, and researchers to prevent and treat illiteracy (Chloe ,2017).

People should strive to acquire the skill of reading since it lowers the likelihood of poverty, improves employability, fosters social inclusion, and promotes health. An individual's capacity to engage with and make a contribution to society is severely restricted if they are illiterate. Many people consider illiteracy to be the lack of ability to read, while literacy is the capacity to read. Functional literacy, another name for low literacy, is equally important. A person who lacks functional literacy can read brief texts and comprehend simple terminology, but he may find it difficult to read and comprehend menus, prescription drugs, news stories, or children's books, among other basic literacy activities. Eighteen per cent (18%) of US adults, or about 57.4 million people, were reported to be functionally illiterate in 2014. Ninety million adult Americans are not even literate (Alyssa, 2017).

There are numerous detrimental effects of illiteracy on people and society. In general, people with poor levels of literacy have lower rates of earning, labor force participation, and reading to their children, all of which may impede the literacy development of their offspring. Because illiteracy can be inherited from parents, it is possible that future generations will experience poverty and unemployment. Illiteracy also has detrimental effects on the community's health, academic performance, crime rate, and rate of economic growth. These detrimental social and economic

effects are estimated to have cost the US \$362.49 billion a year. Higher literacy rates are associated with greater equality, better health, and higher national productivity than lower literacy rates.

The stigma attached to low literacy and learning disabilities (LDs) can often keep people from getting the assistance they require to become literate, which prolongs the problem for the duration of their lives. Many illiterate people keep their lack of literacy a secret from their spouses, kids, coworkers, and employers. Research indicates that fifty-three percent of people with low literacy have never disclosed to their kids that they are illiterate. Low self-esteem and poor mental health can result from shame and inadequacy feelings. These emotions erect an emotional barrier that prevents persons who lack literacy skills from getting assistance in learning to read (Ballard brief, 2017).

Illiteracy is among the biggest issues facing Africa. First and foremost, because one of the most illiterate regions in the world is home to almost 40% of the people over the age of 15.

Poverty, political unrest in most sub-Saharan African states, and negative attitudes about women's education prevented millions of people from getting education. As a result, many African countries have high unemployment rates among active persons. (UNESCO, 2017).

Rwandan Adult Education has the vision of making the society literate through reading, writing and life skills use in order to have peaceful and successful nation and the development of persons, families and communities in general (MINEDUC,2018). Importantly, adult education fosters self-determination and critical thinking of the people. However, no education persons aged 15 and above are two million nine hundred fifty-four thousand seven hundred seventy (2,954,770) in Rwanda and in Gicumbi District illiterate adult people of age 15 and above are sixty-seven thousand nine hundred seven (67,907) including thirty-nine thousand ninety-four (39,094) Females and twenty-eight thousand eight hundred thirteen (28,813) Males (RPHC,2022). Generally, the Rwandan government is committed to eradicate illiteracy in the country. However, illiteracy level of (22.3%) remains high in Rwanda and particularly in Gicumbi District. This percentage of illiterate adults aged 15 years and above in Rwanda justifies that there are teaching methods assumed factors that affect adult literacy learning outcomes but no study has been conducted in Rwanda to explore the effects of teaching methods on Adult Literacy Learning Outcomes. Additionally, according to the Ministry of Education 2022/23 Education Statistical Yearbook, there is a decrease in the number (73 centers) of adult literacy centers from 5,076 centers in 2021/22 to 5,003 centers in 2022/23, in the number of learners in adult literacy centers from 116,028 learners in 2021/22 to 109,196 learners in 2022/23 representing a decrease of 6,832 learners equivalent to 5.8% in both public and private adult literacy centers, in the number of adult literacy learners who completed the program from 123,822 learners in 2020/21 to 93,393 learners in 2021/22 representing 32.5% decrease, and a decrease in the number of instructors from 6,083 instructors to 5,817 instructors representing 4.7% decrease between 2021/22 and 2022/23 (Ministry of Education Statistical Yearbook, 2023). However, Ministry of Education 2022/23 Statistical Yearbook does not systematically point out factors behind the decrease in the number of centers, learners and instructors.

In order to combat illiteracy, adult educators use different teaching methods. Teaching methods quicken the improvement of quality education because the route to learning starts with teaching. According to Namitha (2018), education serves as a beacon that guides humanity toward progress. These days, concepts like education, innovation, and technology are routinely blended to create new definitions of emerging trends (Kapoor and Gusain, 2020). The idea that teaching and learning are incredibly creative processes is widely valued in modern education (Wang, 2022).

Strategies of teaching help students advance academically while inspiring and satisfying them to grow as people and as creative beings (Moqaddam, 2016). According to Kolenikova (2016), the term "teaching method" refers to a teacher's strategy for reaching the desired results in a classroom setting and encompasses the broad pedagogical concepts and management style used during instruction. (Al-Ghasab, 2022). In order to improve instruction and give students a better education, modern teaching methods are also frequently used (Wang, 2022). Thus, this study sought to assess the relationship between adult education program implementation factors and adult literacy learning outcomes in Gicumbi District, Rwanda.

The main objective of this study was to assess the effects of teaching methods on adult literacy learning outcomes in public adult literacy centres in Gicumbi District.

This study was guided by the following specific objectives:

1. To identify teaching methods that affect adult literacy learning outcomes in Gicumbi District, Rwanda
2. To establish the extent of Adult Literacy Learning Outcomes in Gicumbi District, Rwanda
3. To assess the relationship between adult education program implementation factors and Adult Literacy Learning Outcomes in Gicumbi District, Rwanda

### **Literature Review:-**

Effects of teaching methods on Adult Literacy Learning Outcomes are reviewed. The theoretical literature which describes a theory that supports the study under investigation and the empirical literature which describes the effects of teaching methods on Adult Literacy Learning Outcomes are dealt with.

### **Theoretical Literature**

It reviewed the existing theoretical literature. It also described the key terms of the study and reviewed the existing studies on effects of teaching methods on Adult Literacy Learning Outcomes in Rwanda.

### **Overview of Adult Education**

Adults have the right to education like children and youths. The right to education is for all persons irrespective of their ages. One of the education objectives is to holistically develop the personality of human beings and their dignity. Girls, boys, women and men freely and effectively participate in society as a result of education that they have acquired. Education goals are not only attained by Education to Children and Youths. Thus, Education continues throughout life. Adult Education is made of lifelong learning processes that promote the working abilities of persons for personal and societal benefits (UNESCO, 2019).

For a variety of reasons, adults may (re)enter the workforce to gain lost or ignored education at primary or secondary level, acquire foundational skills, develop new vocational skills and abilities to adjust to shifting job market conditions or alter careers in order to achieve ongoing professional development, continuing education for leisure personal growth and complete participation in social life and independent processes. Adult Education allows persons to enjoy human rights. Adult Education is crucial. Its benefits include helping individuals escape poverty, acquiring the knowledge and skills required to engage in society, and promoting active citizenship but many countries underfund it less than 3% of their national education budget (UNESCO, 2020)

Adult Education is a crucial element of education system that help people improve their lives in quality manner through abilities development, qualifications improvement and people's new direction turning (UNESCO, 2020). According to the Rwanda Adult Education Policy, adult learners who are illiterate and have never attended or left school are provided with a basic education. He or she receives adult basic education that covers more than just reading and writing skills; it also includes the behaviors and practical and theoretical knowledge needed for adapting to new situations and actively participating in social, economic, and political life. (MINEDUC, 2018).

### **Adult education program implementation factors and adult literacy learning outcomes**

Trending teaching methods are advantageous to teaching and learning process. Learners can enhance their cognitive thinking skills by using contemporary instructional approaches. These kinds of instruction improve profound learning. The students are able to ponder deeply and endlessly about any subject. Thanks to innovative teaching strategies and cutting-edge technology, students can achieve academic excellence (Vijayalakshmi, 2019). Students learn any material quickly and flawlessly because of the innovative learning patterns created by the new teaching methodology. The students can learn a great deal about a subject. The attractiveness of presentations is enhanced by modern information technology (Ahmad and Awan, 2020). As a result, both teachers and students acquire application-based skills using modern teaching methodologies. The learning process involves active participation from both the teacher and the student (Ahmad and Awan, 2020). The teacher tries to reinforce students' abilities in listening, speaking, reading, writing, argumentation, comparison, analysis, construction, and creativity. The content is presented based on these issues (Moqaddam, 2016; Akbari, 2010). These modern teaching methods primarily focus on the learner and his interests and capabilities. Critical soft skills are emphasized in modern teaching approaches, which are also activity-based and foster highly engaged learning environments. These flexible teaching strategies offer options for a variety of learners with disabilities and learning preferences.

### **Theoretical Framework**

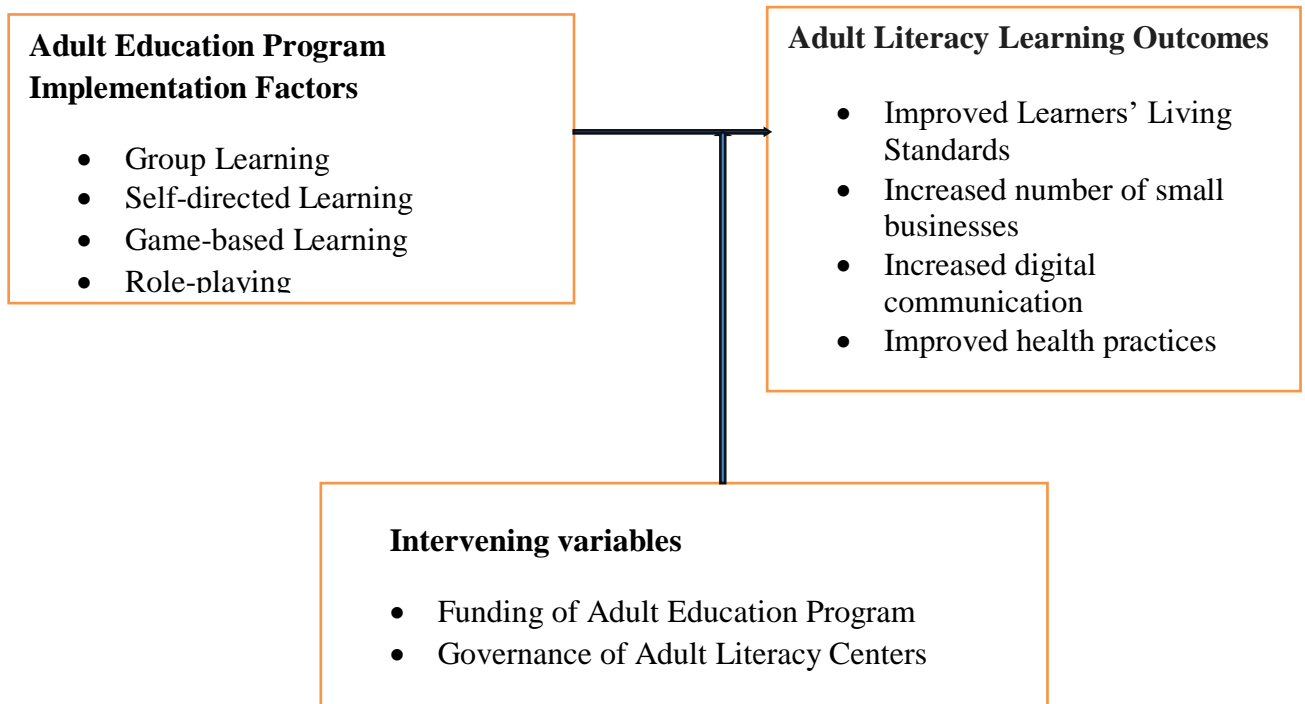
This study was guided by Adult Learning Theory by Malcom Knowles.

Malcolm Knowles, an American educator, first presented the idea of Adult Learning Theory in 1968. Adults require their instructors to point out the rationale for learning before diving into the adult education courses. During the learning process, they prefer to take time to learn independently in accordance with their own pace so that they acquire knowledge, skills, values and attitudes holistically. Unlike the learning of children and youths, adults come to classes with a lot of experiences that adult literacy instructors have to take into consideration in the whole process of teaching and learning. Intentionally, adults learn with the mind of solving problems encountered in their families, communities and work-related places. Therefore, adult literacy instructors have to provide learners' activities that promote problem solving skills. Undoubtedly, adults are intrinsically motivated. Thus, the instructors are not highly required to be upset with the use of extrinsic motivation items to them. Adult Learning Theory is more than simply a theory; it's a revolutionary force that could completely alter the way we think about adult education. It acknowledges that learning is a lifelong process that changes, adapts, and takes on new aspects as we get older (NEIT,2021). Adult learning theory is relevant to this study of assessing the effects of teaching methods on adult literacy learning outcomes because the desired learning outcomes result from the ability of adult literacy instructors in using appropriate teaching methods (UNISA,2019).

### Conceptual Framework

The conceptual framework relates the independent variables: Adult Education Program Implementation Factors: Group Learning, Self-directed Learning, Game-based Learning, role-playing to the dependent variables: Improved Learners' Living Standards, Increased number of small businesses, Increased digital communication and Improved health practices. In addition, the researcher brought in the intervening variables that are Funding of Adult Education Program and Governance of Adult Literacy Centers.

### Independent variable Dependent variable



### Research Methodology:-

#### Research design

In conducting this research, the researcher used a descriptive survey design, which is referred to as a method of collecting data that involves conducting interviews with a sample of people or giving them questionnaires (Orodho, 2004). This approach is helpful for learning about people's beliefs, behaviours, attitudes, and some aspects of education or society issues (Tromp & Komb, 2002).

Thus, the researcher used a descriptive survey design in order to seek information from adult literacy learners, adult literacy instructors, the district director of education, the district education officer in charge of nursery, primary, and adult literacy, and sector education officers on adult education program implementation factors and adult literacy learning outcomes in Gicumbi District, Rwanda. The independent variable of this study is adult education program implementation factors, whereas the dependent variable is the adult literacy learning outcomes.

### Target population

The units for which the survey's findings are meant to be generalized are described by the target population (Orodho, 2004). One (1) district director of education, one (1) district education officer in charge of nursery, primary education, and adult literacy, twenty-one (21) sector education officers, three hundred eighty-five (385) adult literacy instructors, and three thousand eight hundred sixty-one (3861) adult literacy learners as its target population. The total population was four thousand six hundred twenty-five (4625) respondents.

### Sample Design

Sample Design comprised of sample size determination and sampling techniques.

### Sample size determination

The researcher used the Yamane formula to determine sample size (Yamane, 2015). The sample size was 368 from a population of 4625 using the Yamane formula. According to Yamane (2015), the sample size formula is as follows:  $n = \frac{N}{1+N(e^2)}$  where  $n$  represent sample size,  $N$  represent target population of the study,  $e$  is the expected degree of precisions where  $e=1-P$  and  $P$  is 0.95 then  $e=1-0.95$ ,  $e=0.05$

$$n = \frac{4625}{1 + 4625(0.05^2)} = 368$$

**Table 3.1:-** Target Population and Sample Size.

Respondents	Population of research	Sample size of research
DDE	1	1
DEO	1	1
SEO	21	21
Adult Literacy Instructors	385	38
Adult Literacy Learners	3861	307
Total	4625	368

**Source:** Researcher Calculation, (2024)

### Sampling techniques

Gicumbi District was selected by using the purposive sampling technique because it is among the top six districts with the highest number of illiterate adults aged 15 and above in Rwanda. The adult literacy centres were purposefully selected because they are public adult literacy centers. The DDE and DEO in charge of nursery, primary, and adult literacy and SEOs were purposefully selected because their centres were included in a sample, and they are responsible for education administrative duties, provision of resources, and overseeing the adult education program implementation in the center. They form key informant of the study. Adult literacy instructors were selected through simple random sampling. Simple random sampling was also used to select adult literacy learners, where all individuals were given a chance of being selected as a member of the sample.

## Research Findings and Discussions:-

### Demographic Characteristics of Respondents

This research gathered data on gender profile, age group, education level, teaching experience in adult literacy learning outcomes in Rwanda.

### Gender of Respondents

Respondent's gender profile was very important in investigating the adult education program implementation factors and adult literacy learning outcomes in Rwanda.

**Table 4.1:-** Gender Profile of Respondents.

	Adult Learners		Literacy Instructors		DDE		DEO		SEO	
	N	%	N	%	N	%	N	%	N	%
Male	166	54.07%	21	55.26	1	100.0	1	100.0	17	80.95
Female	141	45.02	17	44.73	0	0.0	0	0.0	4	13.15
<b>Total</b>	<b>307</b>	<b>100.0</b>	<b>38</b>	<b>100.0</b>	<b>1</b>	<b>100.0</b>	<b>1</b>	<b>100.0</b>	<b>21</b>	<b>100.0</b>

**Source:** Primary Data (2024)

Information given in 4.1: 54.07% of adult literacy learners who participated in this study are male, while 45.02% are female; 55.26% of adult literacy instructors who participated in this study are male, while 44.73% are female. In this regard, 80.95% of SEO were male while 13.15% were female, 100.0% of DDE was male, and 100.0% of DEO was male. This justified that the researcher included both male and female in the study. In schools, where more female students are now enrolled in classes, there is both gender parity and female freedom. Maladies International Policy Research Institute looked into how different teaching strategies affected the learning outcomes for adult literacy (Gilmour, 2020).

#### Age of Respondents

It is very important to provide information related to age category of respondents as depicted in.

**Table 4.2:-** Age Group of Respondents.

Age of Respondents	Frequency	Percentage
25-30 Years	108	29.42
31-35 Years	114	31.06
36-40 Years	87	23.7
41 years and above	58	15.8
<b>Total</b>	<b>367</b>	<b>100.0</b>

**Source:** Primary Data (2024)

As reflected in Table 4. 2, 29.42% respondents are between 25-30 years of age, 31.06% of respondents are between 31- and 35-years' age, 23.7 % of respondents who were involved in the study process were between 36 and 40 years and finally 15.8 of respondents who were involved in the study process were above 41 years, this means that age characteristics was balanced in this study. The study's conclusions aligned with those of Robinson (2018), who assessed how adult education program implementation factors and adult literacy learning outcomes. The bulk of respondents, the researcher observed, were in the 17–20 age range. The presence of adult respondents allowed the researcher to obtain valuable data.

#### Education Qualification of Respondents

It was necessary to assess the highest level of qualification attained by respondents from primary, advanced level, bachelor's degree, master degree to doctoral degree.

**Table 4.3:-** Education Attainment of respondent.

	Adult Instructors		Literacy Learners		DDE		DEO		SEO	
	N	%	N	%	N	%	N	%	N	%

	N	%	N	%	N	%	N	%	N	%
Primary	-	-	307	100.0	-	-	-	-	-	-
Advanced Level	34	89.47	-	-	-	-	-	-	-	-
Bachelors	4	10.52	-	-	-	-	1	100.0	21	100.0
Masters	-	-	-	-	1	100.0	-	-	-	-
PhD	-	-	-	-	0	0	-	-	-	-
<b>Total</b>	<b>38</b>	<b>100.0</b>	<b>307</b>	<b>100.0</b>	<b>1</b>	<b>100.0</b>	<b>1</b>	<b>100.0</b>	<b>21</b>	<b>100.0</b>

**Source:** Primary Data (2024)

Information presented in Table 4.1.3, 10.52% Adult Literacy Instructors were studying in Bachelor's degree, 89.47% are studying in advanced level and 100 % had primary level of education. For the case of DDE, 100% hold master's degree, 100% of DEO Hold Bachelor. Finally, 100.0 % SEO hold bachelor's degree. Gilmour (2020) reveals factors affecting adult literacy program implementation in Murang'a East District, including age, gender, and motivation. Factors include free primary education, inadequate facilities, lack of motivation, and funding. Further research is needed to improve adult literacy.

#### **Distribution by Work Experience**

Learning/teaching experiences for research participants is categorized by < one year, one and three years, four and six years and more six years. Data is shown in Table 4.4.

**Table 4. 4:-** Work Experience of Respondents.

	Adult Literacy Instructors		DDE		DEO		SEO	
Years	N	%	N	%	N	%	N	%
<5	5	13.15	-	-	-	-	10	47.6
5 <10	15	39.47	1	100.0	1	100.0	11	52.3
>10	18	47.36	-	-	-	-	-	-
<b>Total</b>	<b>38</b>	<b>100.0</b>	<b>15</b>	<b>100.0</b>	<b>1</b>	<b>100.0</b>	<b>21</b>	<b>100.0</b>

**Source:** Primary Data (2024)

Data in Table 4.4, 13.15% Adult Literacy Instructors have under five years of experience, 39.47% Adult Literacy Instructors taught between five and 10 years while only 47.36% have above 10 years of experience. In a group of DDEs, 100.0% have between 5 and 10 years of experience, DEOs 100 % had between five and 10 years of working experience and For SEOs 47.6% had five years old while 52.3% between 5 and 10 years. This implies that the majority of respondents had enough work experience in functioning and organization of adult

education. Thus, provided data were backed by respondents' work experience that involve mastering adult education program implementation factors and adult literacy learning outcomes.

### Presentation of findings

The study examines data collected in line with the research goals and dependent variables. The research collected qualitative and quantitative data from 367 respondents, identified teaching methods used by instructors in public adult literacy centres in Gicumbi District, established the extent of adult literacy learning outcomes in public adult literacy centres in Gicumbi District, and assessed the effects of teaching methods on adult literacy learning outcomes in public adult literacy centres in Gicumbi District.

### Teaching methods used by instructors in public adult literacy centers in Gicumbi District

The research identified teaching methods used by instructors in public adult literacy centres in Gicumbi District in Rwanda. The following tables show how the participants responded to the following statements.

**Table 4.5:-** Adult Literacy Learners Perception on Teaching Methods Used by Instructors in Public Adult Literacy Centres in Gicumbi District in Rwanda.

Statements	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	Std
	N	%	N	%	N	%	N	%	N	%		
My instructor puts me in a small group to complete tasks	0	0.0	0	0.0	36	11.7	38	12.4	233	75.9	1.37	.800
I take an active role in my learning by setting my own goals	0	0.0	0	0.0	38	12.4	72	23.5	197	64.2	1.22	.635
My instructor uses games to increase my motivation	0	0.0	0	0.0	0	0.0	75	24.4	234	75.6	1.23	.643
I act out specific roles to learn different concepts	0	0.0	0	0.0	0	0.0	36	11.7	271	88.3	1.48	.867

**Source:** Primary Data (2024)

Results in Table 4.5 evidenced responses on teachers' perceptions of teaching methods used by instructors in public adult literacy centers in Gicumbi District. Accordingly, 233 (74.9%) strongly agreed that their instructor puts them in a small group to complete tasks, 197 (64.2%) strongly agreed that they take an active role in their learning by setting their own goals, 234 (75.6%) strongly agreed that their instructor uses games to increase their motivation, and 271 (88.1%) strongly agreed that they act out specific roles to learn different concepts. In general, the study found that 74.9% of students preferred their instructors to group them, 64.2% actively set goals, 75.6% used games to boost motivation, and 88.1% performed specific roles to learn concepts. (Lore, 2018) The study investigates teacher professionalization in adult literacy education by examining research, past experiences, and state certification criteria. It discovered that the argument over professionalization is hampered by underlying attitudes about adult education, such as adults' entitlement to education, state responsibility, teacher role, training efficacy, and relevant information. According to the study, enhancing the quality of adult literacy instruction needs collaboration among practitioners, researchers, and policymakers.

**Table 4.6:-** Adult Literacy Instructors Perceptions Toward Teaching Methods Used by Instructors in Public Adult Literacy Centres in Gicumbi District, Rwanda.

Statements	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	Std
	N	%	N	%	N	%	N	%	N	%		
I put my learners in small groups to complete tasks	0	0.0	0	0.0	3	8.1	4	10.8	30	81.1	1.41	.858
My learners take	1	2.7	2	5.4	4	10.8	4	10.8	26	70.3	1.23	.653

active roles in their learning by setting their own goals													
I use games to increase motivation of my learners	0	0.0	1	2.7	2	5.4	7	18.09	27	73.0	1.32	.724	
My learners act out specific roles to learn different concepts	0	0.0	1	2.7	3	8.1	9	24.3	24	64.9	1.54	.939	

Source: Primary Data (2024)

Data presented in Table 4.6, 30 (81.1%) strongly agreed that they put their learners in small groups to complete tasks, 26 (70.3%) strongly agreed that their learners take active roles in their learning by setting their own goals, 27 (73.0%) strongly agreed that they use games to increase motivation of their learners, and 24 (64.9%) strongly agreed that their learners act out specific roles to learn different concepts.

**Adult literacy learning outcomes in public adult literacy centres**

This study evaluated adult literacy learning outcomes in public adult literacy centres in Gicumbi District.

**Table 4.7:-**Adult literacy learners Perception of Adult Literacy Learning Outcomes in Public Adult Literacy Centres in Gicumbi District.

Statements	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	Std
	N	%	N	%	N	%	N	%	N	%		
	Improved learners' living standards indicates adult literacy learning outcomes	1	0.3	2	0.7	2	0.7	36	11.7	266		
Increased number of small businesses indicates adult literacy learning outcomes	0	0.0	3	1.0	36	11.7	38	12.4	230	74.9	1.23	.653
Increased digital communication indicates adult literacy learning outcomes	0	0.0	1	0.3	0	0.3	73	23.8	232	75.6	1.32	.724
Improved health practices indicate adult literacy learning outcomes	1	0.3	2	0.7	38	12.4	72	23.5	367	63.2	1.54	.939

Source: Primary Data (2024)

Information depicted in Table 4.7, 266 (86.6 %) strongly agreed that Improved learners' living standards indicates adult literacy learning outcomes, 230 (74.9%) strongly agreed that Increased number of small businesses indicates adult literacy learning outcomes, 232(75.6 %) strongly agreed that increased digital communication indicates adult literacy learning outcomes, 367(63.2 %) strongly agreed that Improved health practices indicate adult literacy learning outcomes. The study found that improved living standards, increased small businesses, increased digital communication, and improved health practices significantly impact adult literacy learning outcomes. According to Mphale (2021), A qualitative research of adult literacy education in the United States discovered that engagement in education leads to increased employment and wages, improves ongoing education, and lowers welfare dependence. However, the overall influence on welfare dependence is unclear. The paper proposes a national outcome reporting

system, longitudinal evaluation, and systematic funding for state and local outcome studies to assess adult literacy outcomes.

**Table 4.8:-** Adult Literacy Instructors’ perception on Adult Literacy Learning Outcomes in public adult literacy centers in Gicumbi District.

Statements	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Mean	Std
	N	%	N	%	N	%	N	%	N	%		
Improved learners' living standards indicates adult literacy learning outcomes	0	0.0	0	0.0	0	0.0	5	13.2	33	86.8	1.40	.792
Increased number of small businesses indicates adult literacy learning outcomes	0	0.0	0	0.0	4	10.5	5	13.2	29	76.3	1.29	.689
Increased digital communication indicates adult literacy learning outcomes	0	0.0	0	0.0	0	0.0	8	21.1	30	78.9	1.32	.700
Improved health practices indicate adult literacy learning outcomes	0	0.0	0	0.0	4	10.5	10	26.3	24	63.2	1.48	.856

Source: Primary Data (2024)

Results presented in Table 4.8, 86.8% strongly agreed that improved learners' living standards indicate adult literacy learning outcomes; 76.3% strongly agreed that an increased number of small businesses indicates adult literacy learning outcomes; 78.9% strongly agreed that increased digital communication indicates adult literacy learning outcomes; and 63.2% strongly agreed that improved health practices indicate adult literacy learning outcomes. The study found that improved living standards, increased small businesses, digital communication, and improved health practices significantly impact adult literacy learning outcomes. The majority of project-based learning is based on "real" projects, assuring relevance and boosting motivation (Mckenna, et. al., 2018). Gamification of education is a technique for raising engagement that involves fusing gaming aspects into a learning setting (Dichev and Dicheva, 2017).

**The effects of teaching methods on adult literacy learning outcomes in public adult literacy centers in Gicumbi District**

**Table 4.9:-** Correlation between teaching methods on Adult Literacy Learning Outcomes.

		Group Learning	Self-directed Learning	Game-based Learning	Improved Learners' Living Standards	Increased number of small businesses	Increased digital communication
Group Learning	Pearson Correlation	1					
	Sig. (1-tailed)						
	N	367					
Self-directed Learning	Pearson Correlation	.704**	1				
	Sig. (1-tailed)	.000					
	N	367	367				
Game-based Learning	Pearson Correlation	.488**	.693**	1			
	Sig. (1-tailed)	.000	.000				
	N	367	367	367			

Improved Learners' Living Standards	Pearson Correlation	.496**	.716**	.493**	1		
	Sig. (1-tailed)	.000	.000	.000			
	N	367	367	367	367		
Increased number of small businesses	Pearson Correlation	.803**	.601**	.446**	.414**	1	
	Sig. (1-tailed)	.000	.000	.000	.000		
	N	367	367	367	367	367	
Increased digital communication	Pearson Correlation	.261**	.433**	.612**	.245**	.367**	1
	Sig. (1-tailed)	.000	.000	.000	.000	.000	
	N	367	367	367	367	367	367

\*\*Correlation is significant at 0.01 level (2-tailed).  
\*Correlation is significant at 0.05 level (2-tailed)

Source: Primary Data (2024)

Findings from Table 4.9 indicated A strong relationship was established between group learning and improved learners' living standards (r =.496\*\*, p-value = 0.000), an increased number of small businesses (.601\*\*, p-value = 0.000), and increased digital communication (.433\*\*, p-value = 0.000). The connection is positively connected since the p-value was less than 0.05, explaining that adjustments in group learning affect improved learners' living standards, an increased number of small businesses, and group learning, and vice versa.

For self-directed learning and improved learners' living standards (r =.716\*\*, p-value = 0.000), an increased number of small businesses (.803\*\*, p-value = 0.000), and increased digital communication (.261\*\*, p-value = 0.000). The association is positively related because the p-value was less than 0.05, explaining that adjustments in self-directed learning affect improved learners' living standards, an increased number of small businesses, group learning, and vice versa.

There is a significant correlation found between game-based learning and improved learners' living standards (r =.493\*\*, p-value = 0.000), an increased number of small businesses (.612\*\*, p-value = 0.000), and having a high attractiveness rate (.261\*\*, p-value = 0.000). Because the p-value was below 0.05, this means the connection is positive, demonstrating that the modification of game-based learning affects improved learners' living standards, increased the number of small businesses, and group learning, and vice versa. Based on World Development Indicators, 807 million adults (13.7%) were illiterate worldwide in 2018; two-thirds of these individuals were women (Stromquist, 2016). Illiteracy is defined as the inability to read and write a basic statement concerning one's daily life. The percentage of adults in Sub-Saharan Africa who do not possess these essential abilities is significantly higher—34.3%, or 164.2 million. The proportion of persons who cannot read and write a basic sentence has decreased both nationally and internationally. But while the population grew from 164.2 million in 2000 to 211.4 million in 2018, the share fell from 43.3% to 34.3% in Sub-Saharan Africa.

Table 4.10:- Regression Coefficients between independent variable and Improved Learners' Living Standards.

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta	t		Lower Bound	Upper Bound
1 (Constant)	.827	.134		6.163	.000	.562	.69.5
Group Learning	.016	.050	.564	-.316	.006	-.114	.083
Self-directed Learning	.942	.080	.732	11.816	.000	.785	1.099
Game-based Learning	-.007	.051	.457	-.131	.001	-.106	.093

- a Dependent Variable: Improved Learners’ Living Standards
  - b Predictors: (Constant), Game-based Learning, Group Learning, Self-directed Learning
- Source: Primary data (2024)

Findings in Table 4.10 from respondents of this study presented that the regression equation is  $(y = ax + b + \epsilon)$  thus y: dependent variable as Improved Learners’ Living Standards, x: independent variable as Game-based Learning, Group Learning, Self-directed Learning) thus  $y = (\text{Beta}) x + .827 + \epsilon$ . The above table 4.10 shows that group learning was statistically significant to improved learners’ living standards (B =.564, p-value =.006), self-directed learning was statistically significant to improved learners’ living standards (B =.732, p-value =.000), and game-based learning is significant affecting improved learners’ living standards (B =.457, p-value =.001). The result of the regression analysis indicated that there are significant differences between independent variables with improved learners’ living standards.

**Table 4.11:-** Regression Coefficients between independent variable and Increased number of small businesses.

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta	t		Lower Bound	Upper Bound
1 (Constant)	.791	.114		6.907	.000	.565	.887
Group Learning	.791	.046	.752	17.302	.000	.701	.881
Self-directed Learning	.045	.073	.733	.623	.000	.698	.189
Game-based Learning	.061	.046	.656	1.313	.000	.730	.152

- a Dependent Variable: Increased number of small businesses
  - b Predictors: (Constant), Game-based Learning, Group Learning, Self-directed Learning
- Source: Primary data (2024)

From Table 4.11, respondents of this study presented that the regression equation is  $(y = ax + b + \epsilon)$ , thus y: dependent variable as increased number of small businesses, x: independent variable as game-based learning, group learning, self-directed learning, thus  $y = (\text{Beta}) x + .791 + \epsilon$ . Despite, there is 95% confidence that the implementing school feeding program can influence an increased number of small businesses, somewhere between 56.5% and 88.7%. The above table shows that group learning was statistically significant to an increased number of small businesses (B =.752, p-value =.000), self-directed learning was statistically significant to an increased number of small businesses (B =.733, p-value =.000), and game-based learning is significant to an increased number of small businesses (B =.656, p-value =.000). The result of the regression analysis indicated that there are significant differences between independent variables with an increased number of small businesses.

**Table 4.12:-** Regression analyses between Independent Variable and Increased digital communication.

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta	t		Lower Bound	Upper Bound
1 (Constant)	.471	.097		4.859	.000	.554	.662
Group Learning	-.116	.076	-.088	-1.531	.000	-.264	.033
Self-directed Learning	.138	.120	.080	1.149	.001	-.098	.375
Game-based Learning	.805	.076	.599	10.530	.000	.654	.955

- a. Dependent Variable: Increased digital communication
- b. Predictors: (Constant), Game-based Learning, Group Learning, Self-directed Learning

**Source:** Primary data (2024)

From Table 4.12, respondents of this study presented that the regression equation is  $(y = ax + b + \epsilon)$ , thus y: dependent variable as increased digital communication, x: independent variable as game-based learning, group learning, and self-directed learning, thus  $y = (\text{Beta}) x + .471 + \epsilon$ . Despite, there is 95% confidence that the implementing school feeding program can influence increased digital communication, somewhere between 55.4% and 66.2%. The above table shows that group learning was statistically significant to increased digital communication ( $B = -.088$ ,  $p\text{-value} = .000$ ), self-directed learning was statistically significant to increased digital communication ( $B = -.080$ ,  $p\text{-value} = .001$ ), and game-based learning is significant to increased digital communication ( $B = .599$ ,  $p\text{-value} = .000$ ). The result of the regression analysis indicated that there are significant differences between independent variables with increased digital communication.

## **Conclusions and Recommendations:-**

### **Conclusions:-**

Reconsidering findings from this present research, it concludes: According to the first research question, the study revealed that group learning, self-directed learning, game-based learning, and role-playing indicate teaching methods that affect adult literacy learning outcomes in Gicumbi District, Rwanda.

For the second research question, the researcher revealed that improved learners' living standards, an increased number of small businesses, increased digital communication, and improved health practices indicate the adult literacy learning outcomes in Gicumbi District, Rwanda.

Results from three research question revealed that the correlation and regression results established the existence of a positive correlation among adult education program implementation factors and adult literacy learning outcomes in Rwanda, where the Pearson's p-value and significance were justified by p-values less than 0.05, and the research results evidenced a positive correlation between teaching methods and adult literacy learning outcomes.

### **Recommendations:-**

Reviewing closing remarks using the study results and material, pointed out that the author sought to give a few recommendations for the study.

First, the researcher recommended that the Ministry of Education should provide robust government support, clear guidelines and infrastructures for adult education programs. Strong government support and policies are essential for the success of adult education programs. This includes allocating sufficient resources, establishing clear guidelines and regulations, and providing necessary infrastructure and facilities for adult education.

Second, Rwanda Basic Education Board should involve non-governmental organizations and local communities and authorities in monitoring and evaluating the functioning of adult education. Involving them in the planning and implementation of adult education programs is crucial. This can help ensure that the programs are tailored to the specific needs and interests of the target population.

Third, Gicumbi District should use prioritize the use of quality of teaching and learning materials, well-trained teachers, accessibility, flexibility, continuous assessment and collaboration between stakeholders because they play a significant role in the success of adult education programs. It is essential to provide well-trained teachers and access to relevant and engaging learning materials that cater to the diverse needs of adult learners.

Fourth, District Director of Education should make adult education programs accessible and flexible to accommodate the diverse needs and schedules of adult learners. This can include offering classes at convenient locations, providing online or distance learning options, and offering flexible scheduling options.

Fifth, District Education Officer should promote continuous assessment and evaluation of adult education programs because it is essential to monitor their effectiveness and make necessary improvements. This can help to identify areas for improvement and ensure that the programs are meeting the desired learning outcomes.

Sixth, Sector Education Inspectors should strengthen collaboration and partnerships between various stakeholders, such as government agencies, non-profit organizations, and private sector entities. This can help leverage resources and expertise to improve the effectiveness of adult education programs.

### Suggestions for further Studies:-

The report urges more investigation into the following areas: Factors influencing the implementation of adult education literacy curriculum in Rwanda

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