



Greener Journal of Educational Research

ISSN: 2276-7789

ICV: 6.05

Submitted: 26/07/2016

Accepted: 30/07/2016

Published: 21/08/2016

DOI: <http://doi.org/10.15580/GJER.2016.5.072716125>

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By

Audi Oluoch
James Sika
Catherine Muhonja Aurah

Research Article (DOI: <http://doi.org/10.15580/GJER.2016.5.072716125>)

Assessment of Achievements in Adult Literacy Programme in Vihiga County, Kenya

***¹Audi Oluoch, ²James Sika and ³Catherine Muhonja Aurah**

¹Kisii University. P.O. Box 547-40601, Bondo, Kenya.

²Department of Education Management and Foundation, Maseno University, Private Bag, Maseno, Kenya.

³Department of Science Education, Masinde Muliro University of Science and Technology, Kenya.
P.O. Box 190-50100, Kakamega, Kenya.

*Corresponding Author's Email: audioluoch@gmail.com

ABSTRACT

Adult Literacy Programme has been providing knowledge and skills to enhance human capital for the solution of various problems in society. The problem in the area of study has however been environmental degradation occasioned by persistent deforestation. The study set out to establish the impact that the planning and implementation of the programme has on enhancing environment development and management in view of the continued environmental degradation in the County.

A conceptual framework based on educational *production function theory* was used to explain the link between the programme and environmental development and management. Using descriptive survey design, the findings revealed that, learners' theoretical understanding and practical application of skills learnt were assessed. The study concluded that, as knowledge and skills acquired were applied, more evaluation needs to be done downstream to ascertain the practical returns to education.

Key words: Adult Literacy Programme, Environment, Achievement, Assessment.

1.0. INTRODUCTION

An evaluation of the achievements in literacy programmes should be done from the angle of problem-solving, which is a goal-directed thinking and action-oriented, especially in situations for which no routine solution procedure is available. Although assessment of literacy achievement has solicited varied opinions from different scholars, it reveals the practical impact of the programme on the improvement of the socio-economic status of the beneficiaries (OECD, 2011). The direct literacy assessment initiatives also support the concept that the measurement of literacy should go beyond the traditional dichotomy of illiterate or literate, where the literacy rate is given in terms of percentages. It should take into account the various functional uses of literacy in social, cultural, economic and environmental terms. Evaluation of the programme can also help in establishing the amount and nature of the returns to education as a consequence of the learners' participation in the programme. This is because education as a value in itself is included in the analysis of returns, especially if there is increased productivity of human resources education (Openjuru, 2004).

Evaluation also establishes the external efficiency of an educational system as it shows the contributions to development that the learners make in the larger community through the utilization of skills they acquired. It also implies direct monitoring to observe a situation and gather sufficient information on the acquisition and use of skills, which according to Gboku and Lekoko (2007), is useful in proving the contribution that the programme makes towards promoting peace, health, poverty alleviation and in enhancing economic success. This is because to be literate is to function effectively and, hence the need to regularly track the trends and to assess the impact of these efforts.

Usability of Acquired knowledge and Skills

The evaluation of the usability of the knowledge and skills acquired by the learners also establishes the actual impact and the tangible returns to education in economic terms. This, as posited by Vaizey (2011) is a good example of

doing cost-benefit analysis to establish the benefits resulting from an investment in an educational programme. This is critical as adult learners invest a lot of their resources to go through the literacy programme, and hence deserve credible and tangible returns. The most noticeable weakness in ALP is however that, the current testing and assessments procedures in the programmes have been directly copied from the primary schooling and involve the administration of examinations and grading of the results on some standard scale. This approach is very inhospitable as it is not clear on what the real competence any particular performance represents (Easton, 2003). It also alienates and reminds adults of the bad memories of the formal school system in which they might have failed and does not represent what the learners are capable of doing in practical terms. What is tested in adult literacy should therefore not be abstract, but should show how the learners practically use the knowledge and skills acquired to alleviate various problems in society.

The National Adult Literacy Study (NALS) in the USA had also established that, most assessments in adult literacy have mainly included testing the reading, writing, numeracy and cultural literacy skills. These facilitate familiarity with the background knowledge instead of trying to establish whether the learners acquired another form of literacy, especially financial and economic literacies that give skills for involving in socio-economic activities (Rabinowitz, 2013). This generally agrees with Easton (2003) when he said that, what should be evaluated in the programme are the second order effects of educational intervention that is manifested by the learners' achievements downstream. This "downstream" evaluation therefore helps to establish the effects of educational programmes on neighbouring domains of individual and social life such as economic development, environmental development and management, poverty alleviation and cultural integration.

The results of a study conducted in the South Pacific Islands by Pillay also agree that the evaluation of the impact of the programme downstream to establish the application of skills is important in revealing the real effects of adult literacy (Pillay, 1998). This has also been agreed upon by Gboku and Lekoko (2007) when they stated that downstream evaluation is critical because it can easily reveal how the learning opportunities practically contribute to the acquisition of functional knowledge and skills that facilitate the solution of contemporary problems in society such as population pressures, poverty, environmental challenges and disease.

Researches done particularly in Bolivia, Nepal and Nicaragua in South America on the impact of ALP had also shown that, women who participated in the programme had better knowledge in health and were more likely to adapt preventive health measures (Mutua & Sunal, 2004). The impact of these measures is therefore what should be evaluated, not through the written tests, but by watching and observing the real activities that the learners are engaged in. This brings out the outputs, outcomes and impacts of the programme that may be seen through environmental conservation such as small scale farming, agro-forestry and management of small businesses that directly benefit adult learners, and these are what need to be evaluated (Republic of Kenya, 2012).

Evaluation Approaches

Different evaluation approaches have been used in South Africa as well as in Tanzania to assess the impact of adult literacy programme on improving livelihoods and reducing vulnerability to changes in climatic conditions (Paavola, 2008). These approaches have included listening to the stories told by the learners to assess the extent to which they have grasped the concepts and able to produce and recite original stories. The other methods used were organizing and listening to focus-group discussions and taking photographs of the activities that the learners were engaged in and that were helping the learners to develop and manage the environment.

Various studies in adult literacy have also seemed to be inconclusive especially when it comes to the kind of assessment to establish how acquired knowledge and skills are utilized by the learners. Some of the studies have recommended even further studies to establish how learners use the knowledge and skills acquired from adult literacy programme to among others, make use of livelihood opportunities to solve environmental problems (Van der Linden & Rungo, 2006). In Malawi it had been established that the country had been using the economic angle in the assessments by trying to link the functionality of literacy to livelihood activities and business because of the perceived economic gains (Ministry of Women & Children Development, 2008), and these can only be assessed in the community.

In an evaluation done in Uganda, in a process commissioned by the World Bank in 1999, it was established that the literacy programme had equipped the learners with practical knowledge, especially in the areas of agriculture, crop and animal husbandry and handicrafts. The other benefits identified were stronger participation by the learners in governance in their communities in terms of frequency and significance of the roles played and adoption of better health practices. The study recommended further evaluations to establish how the learners applied the knowledge and skills acquired from ALP to alleviate poverty and develop and manage the environment (UNESCO, 2004).

In Vihiga, where the study was conducted, although the assessment of basic literacy skills has been documented, there has been no uniform literacy test for assessing the learners' proficiency in literacy, numeracy as

well as other skills acquired from the programme. There has also been no attempt made to establish the impact of the programme in practical terms in order to show how the programme is beneficial to the individuals and to the society in general in practical terms. Different assessments have been conducted by constructing, administering and scoring different literacy tests given at the sub-County level on the basis of some general guidelines developed at the national level, but customized at the sub-County levels (Directorate of Adult & Continuing Education, 2015). These guidelines, as earlier noted by Carron, Mwiria and Righa (1989), covered only the three dimensions of reading, writing and numeracy, and not the uses into which the knowledge and skills acquired have been put. What should be evaluated are therefore the benefits as seen in practical situations through the activities the learners are engaged in, such as effective environmental management efforts. This is critical because it helps to make end-of-the period judgments about the success or failure of programmes and in drawing lessons on the impact of the programme.

Complexity of evaluating literacy achievements

It has been established that although evaluating adult literacy programmes is quite difficult, researches in Bolivia, Nepal and Nicaragua have also shown that women who participated in the literacy programme have better knowledge in health and are more likely to adapt preventive health measures. These measures are therefore what should be evaluated, not through written tests, but by watching the real activities that the learners are engaged in as this reveals the real competence a particular performance represents in terms of the outputs (Chiba, 1996). This enables the facilitators to respond to the changing needs of the learners. It also helps them to fill their knowledge and skills-gaps and learn from experience by watching the activities that the learners engage in and therefore make necessary adjustments in the curriculum and facilitation strategies.

In South Africa, assessments have been done by listening to the original stories that the learners recite. Other methods have included focus-group discussions, interviews with individuals and group members, observation and taking of photographs of the activities that they involve in the community. This, according to UNESCO-UIL (2007), is used to assess the activities that reflect on their own practice, but this may not give desired results about practical application of acquired skills, hence the need for a more practical assessment strategy.

It should be recognized that, where literacy graduates are only given a proficiency test like in Kenya and Malawi, this type of assessment leaves out the functionality aspect that the programme is supposed to encourage. It is therefore incomplete as the programme is expected to equip the learners with practical knowledge, especially in the areas of agriculture, crop and animal husbandry and handicrafts, which should be assessed (Ministry of Women & Child Development, 2008). Proper literacy assessments should therefore focus basically on checking how the literacy graduates read, write, calculate and foremost, apply the knowledge and skills to solve problems in society. This is especially important because, as the World Bank (2001) contends, it is the sure way of helping to establish the usefulness of literacy as this combines literacy instruction with actual application in the projects identified by the learners to generate income.

The purpose of the study was to establish the impact of the implementation of adult literacy programme on enhancing environmental development and management. The objective that guided the study was to establish how learners' achievements in environmental development and management were assessed.

2.0. RESEARCH DESIGN AND METHODOLOGY

Design

The study was conducted in Vihiga County in Western Kenya where the adult literacy programme has been in existence since 1978. It used descriptive survey design to enable for the generation of qualitative data (Borg & Gall, 2007). The design was also important because it could help in revealing an individual's lived experiences of events in the area of environmental problems and subsequent management (Hunigatu, 2015). It also provides for increased opportunities for getting opinions, attitudes and preferences as well as in-depth and longitudinal explanations. According to Ospina (2004), this design could also allow for the unexpected ideas to be followed into more detail.

Sample

Out of the accessible population of 2,622 adult literacy learners and 18 facilitators, the sample for the study consisted of 784 learners and 15 facilitators. This comprised of 615 females (78%) and 169 males (22%) respectively, and were selected proportionately from all the four sub-Counties, giving a fair representation of both males and females as per the proportion of their participation in the programme. After the listing of all the members of the accessible population, stratified sampling technique, targeting both gender and sub-Counties was used to select the desired

number of respondents from all the sub-Counties to be used in data collection. This was followed by simple random sampling method for every sub-County to select individual learners for the study, hence picking a sample of 30% of the population to give a fairly more accurate result (MaCrr Research, 2015). However, because 3 of the facilitators had already been used to pre-test the instruments, all the remaining 15 were used in the study.

Instrumentation

The study used multiple data collection approaches for qualitative research that included direct interaction with individuals on a one on one basis. The methods therefore included the use of interview schedules, questionnaires, document analysis guide and observation checklist that was also aided by the use of Camera to take pictures of the learners' activities.

Piloting

To enhance the credibility and integrity of the findings, the instruments used were made to pass the validity and reliability test. This included pre-testing of the instruments. This also involved leaving out those already used in pre-testing during the actual study in order to avoid contaminating the study.

i) Validity

As both qualitative and quantitative data paradigms try to find the truth, the design incorporated methodological strategies to ensure trustworthiness, plausibility and credibility of the findings as recommended by Noble and Smith (2015). Ensuring validity helped in guiding against personal biases that could have influenced the findings during the data collection. Meticulous record keeping and establishment of similarities and differences across accounts to ensure that different perspectives were represented, including rich verbatim descriptions of participants' accounts to support the findings also ensured validity of the data. There was also respondent validation where the respondents were used to comment on the interview transcript and whether the final themes and concepts created adequately and accurately reflected the phenomena being investigated. As recommended by Bashir, Tanveer and Azeem (2008), there was also triangulation where two or more data sources, methods, investigators and approaches to data collection and analysis in the study of a single phenomenon were used and then the congruence among them validated. Further validity was ensured when the instruments were given to the experts for subjective assessments on the content and construct validity. This involved checking on the relevance and presentation of the content, the clarity and appropriateness of the questions in relation to the topics (Leung, 2015). Pre-testing of the instruments also provided an opportunity to check whether the items in the instruments were credible and believable from the participants' perspective as they were the only ones who could legitimately judge the credibility of the results (Trochim, 2006).

ii) Reliability

The consistency, dependability, stability and repeatability of the informants' accounts as well as the investigator's ability to collect and record information accurately were assured by pre-testing the instruments. There was also constant follow-up to ensure that the instruments consistently yielded the same data using the same methods on the same or comparable subjects over repeated periods. For reliability, there were different data collection methods like observation, interviews, questionnaire used to ensure that the findings were consistent within the analytical procedures. This proved the dependability and confirmability of the information obtained (Trochim, 2006). Reliability was further ensured through daily de-briefing meetings with the data collectors to share the lessons learnt and to give feedback and make adjustments in the instruments whenever it was necessary.

Data Analysis

The process of data analysis involved transparent, rigorous assembling and reconstructing the data in a meaningful fashion while remaining focused to the participants' accounts (Noble & Smith, 2013). The data was systematically searched and analyzed in order to provide a proper description of the phenomena. Although qualitative data analysis is inductive and focuses on meaning, the analysis mainly involved interpretive approaches that included interpretive phenomenological analysis and grounded theory as well as the use of frameworks or matrices such as matrice approach and thematic analysis (Noble & Smith, 2015). The data was therefore systematically searched and analyzed in order to provide illuminating description of the phenomena.

The information was therefore organized, transcribed and categorized from the emerging themes for ease of familiarization. The information was then coded by the use of numerical and textual codes to identify specific pieces of data which corresponded to different themes. This led to various patterns and specific themes emerging to form thematic frameworks. In the interpretation of data, patterns that emerged were searched and associations established between them. This led to the establishment of concepts and fair explanation of the results. According to Taylor-Powell and Renner (2005), this process allows for patterns and relationships between variables to be established, thus showing the effects and interactions between adult literacy programme and environmental management.

3.0. RESULTS AND DISCUSSION

Assessment is the measurement of learning achievement, which is critical to making the judgment about the quality and worthiness of educational programmes. It helps the stakeholders to keep track of the rates and levels in which the knowledge and skills learnt are utilized in various contexts to solve problems in society. When the study sought to establish the influence of the programme on environmental management, it tried to establish how the learning achievements were assessed in the adult literacy programme. The results obtained established that a lot of assessment was done in the field as shown below.

Table 1: How assessment of achievement is done in the programme

In the Community				In the Class			
Home visits	Interviews	Observations	None	Question and Answer	Written tests	Checking exercise books	Giving assignments
380 (53.3%)	48 (6.7%)	190 (26.6%)	95 (13.3%)	319 (44.7%)	272 (38.1%)	24 (3.4%)	98 (13.8%)

The results showed that, assessments in the adult literacy programme were being done both in class and in the community. It was being done in the community through home visits, where 53.3% of the facilitators followed the learners at home, in the environments in which they lived to check the extent to which they practically applied the knowledge and skills acquired from the programme. This is where the learners were expected to show proof of the application of knowledge and skills acquired from the programme. For the 13.3% of the learners who had never been assessed at home in their communities, their achievements and application of acquired skills could not therefore be ascertained. This may also be true for the 6.7% of the learners who were assessed in the community by mere interviews.

In the class, the most dominant methods of assessment were found to be oral question and answer (44.7%) and giving written tests (38.1%). These were also important in assessing the extent to which the learners had acquired the theoretical understanding of the subject matter before going to the field to apply the acquired knowledge and skills in everyday life. That assessment that was also done downstream at the community level showed that evaluation was being properly done, as that is where action is, and the effects of the programme, as it impacted, could be seen. The assessments done in the class and those done downstream in the community were therefore aimed at testing different things. While the assessments done in class were aimed at ascertaining the level of theoretical understanding of the subject matter, those done downstream in the community were aimed at confirming the extent to which the acquired knowledge and skills were used in everyday life to solve contemporary problems in society such as attempting to develop and manage the environment.

It should be recognized that, as evaluation is done both through home visits and observations in the community, this shows that the facilitators in the programme were able to establish that the skills acquired were being used back at the learners' homes. This is downstream evaluation, according to Easton (2003), and reveals how the beneficiaries manifest the new levels of literacy and technical skills in solving problems in their daily lives. The OECD (2011) had also recommended that any assessment in an adult literacy programme should target the acquisition and how it is used to function better in society. The most frequent methods of assessment in the community such as home visits (53.3%) and observations (26.6%) is further proof of the dominant method used in

facilitating adult learning. This method, *andragogy* is premised on the concept of that recognizes the learners' prior experience, motivation, readiness to learn, orientation to learning and utilization of acquired knowledge and skills.

The idea of following the learners in their communities is therefore part of the learning process because during the visit, the facilitator continues to provide further advisory to the learners with the intention of helping them to make necessary adjustments in their activities, to conform to what was learnt in class (Findsen & Formosa, 2011).

That assessment done both in class and the community was critical because, if assessment was to be done only in class, there could never be any paucity of hard evidence of learning that has taken place. This is because examinations, as those done in class such as question and answer, written tests or giving assignments, rarely produce evidence of what learners can actually do in practical situations (Jacob & Lefgren, 2004). The facilitators therefore had to visit and observe learners' performances in such areas as tendering the tree nurseries, goat keeping, and poultry, making of fireless cookers, horticulture, knitting and table banking, among others in the community. This was important in helping to establish the level of application of knowledge and skills acquired from the programme. As opined by Easton (2003), this was also a means of ensuring accountability as well as providing regular feedback to decision-makers about the course of programme implementation and to generate insight about how to improve programme effectiveness.

Assessment of the literacy programme in the community to observe how the learners use the knowledge and skills acquired is key. Unlike in the case of pure academic programmes, it creates opportunities for learners to showcase and improves their skills in various occupations (Wagner, 2008). This was confirmed by what one learner said at Emmakhwenje that: *"as a learner, I am trying to use what I learnt to increase my knowledge so that I may plant trees around my shamba to conserve the environment. I am therefore trying to do everything in a better way as you can see from my tree nursery.* Another learner at Kapsotik Centre in Hamisi sub-County said that: *Literacy has been opening the eyes and minds of people who for a long time have been isolated. Someone who knows how to read and write does not need help to read and solve certain problems in society. As you can see, I am now able to read and write letters to my children on my own without asking others to do it for me".* The confirmation of the use of the skills acquired was also exhibited by a learner of Kima CDC Adult Centre who said that: *As you can see, I am using the skills I got from the centre to buy and sell baskets. This has helped to change my life and I am now shining in my life".* The learners are therefore able to assess their own levels of accomplishment.

Assessment of the achievements in the adult literacy programme was established to be fairly difficult. This was because it entailed critically checking the extent to which the learners apply the knowledge and skills that they have acquired as a consequence of their participation. This is because the programmes are taken on the basis of need to use the skills in order to solve problems in society. However, although individual and public resources go to education, in this case the literacy programme, there is always great difficulty in the measurement of returns as the effects are not easy to assess or quantify because, as posited by Vaizey (2011), the measurement of labour and capital in education and effects may be quite difficult as most of the inputs are not raw materials, but living parts of the education process. *Production function* in education may therefore produce intangible effects that cannot easily be quantified, but can be observed through the activities in which the beneficiaries are involved, or through the neighbourhood effects.

As established by Van der Kamp (1996) in his study in adult literacy in the Netherlands, the underlying purpose of evaluation in adult literacy is to get a sense of actual capabilities that the learners have acquired through their study. This was confirmed by the results of the study that established the need to give preference to a more friendly downstream evaluation in which the uses to which the knowledge acquired is put is established. What is tested in the programme should therefore not be abstract, but be practical to confirm the application of skills in the community. This was especially important as evaluation of achievement at the community level revealed the actual returns to education as a consequence of the learners' participation. This is important because education as a value in itself is always included in the analysis of returns which should be seen through increased productivity of human capital that according to Openjuru (2004), is vital for improving the living standards. It should however be recognized that evaluating adult literacy programmes is fairly very difficult. This difficulty is mainly due to the overly ambitious and vague objectives and goals of the programmes, which is made worse by the complexity of the learners and their varied needs and abilities. The other difficulty in evaluating literacy as had been posited by Torres (2003) arises from the lack of clear indicators and baseline on which the measurements of the gains are to be based. Despite these difficulties, evaluation of the usability of the skills acquired by the learners in the community is what can easily be used to establish the returns to education in economic terms. This can however be possible only when the learners are involved in tangible economic activities as a consequence of their participation in the programme to produce tangible resultant outcomes. In *production function* theory of education, it should be recognized that the evaluation of inputs is only economically meaningful when compared with resultant outcomes which are however especially difficult to enumerate.

Although assessment of a programme can be done by conducting a Cost-Benefit Analysis (CBA), this may especially be difficult in adult literacy programme. This is because in the field of education and training, the price

mechanism in CBA does not perform and it is hard to take account of all costs and benefits resulting from an investment in education. The resultant outcomes of education, according to Knowles (2002) should be seen in terms of enhanced growth that makes it easier for adults to adapt to internal and external changes, and not in monetary or quantifiable terms. According to the problems faced in Vihiga, these may include positive self-concept, creativity, and greater tolerance and involving in definite attempts aimed at sustainably conserving and managing the environment. This is because adult learning is for the immediacy of application of knowledge and skills, and this is what should be evaluated in the community but, which is impossible to measure using CBA.

As established by the study, the adult literacy programme has a lot to do with generation of resources in the community as it is linked with immediate productive activities of the learners by potentially increasing the skills of labour. This is because during the evaluation of achievement, it was established to have equipped the learners with skills to involve in economically productive activities like involving in income-generating activities in such areas as afforestation and soil and water conservation among others. Downstream evaluation also enables the facilitators to connect the motives for learning and the original expectations of the participants to the activities that they involve in as a consequence of their participation. According to Brady (2007), this is important because literacy is no longer seen as a simple skill or competency, but as a process of using the skill acquired for specific social purpose. It had also been established that it provides learning opportunities that contribute to functional knowledge, skills and practices (Oluoch & Othun, 2008). Archer and Nottingham (1996) also posit that, evaluation of literacy should always emphasize the creative and active involvement of the participant in specific activities in their lives that are geared towards solving individual problem, or a problem affecting the society such as environmental problems.

4.0. CONCLUSION

From the study, it can be concluded that, the fact that the facilitators evaluated the programme downstream showed that they were able to establish how the skills acquired were practically being used in the community. The kind of assessment used is therefore linked to immediate productivity of learners as a consequence of their participation in the programme. The two dominant methods of assessment in the community that were home visits (53.3%) and observation (26.6%) were proof enough that the dominant methods of facilitation was through experiential learning which is important in andragogy.

5.0. RECOMMENDATIONS

Those conducting evaluation on adult literacy programmes should always put emphasis on the creative and active involvement of learners in specific activities downstream in their various community set-ups. These should be activities geared towards solving problems affecting individuals and society in general and these include environmental degradation. It is also recommended that more emphasis be put on occupation-education link to ensure practical application of skills. More evaluation also needs to be done downstream to ascertain the practical returns to education.

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Cite this Article: Oluoch A, Sika J and Aurah CM (2016). Assessment of Achievements in Adult Literacy Programme in Vihiga County, Kenya. *Greener Journal of Educational Research*, 6(5): 194-201, <http://doi.org/10.15580/GJER.2016.5.072716125>