

THE PARADOXICAL POWER OF CONTINUOUS ASSESSMENT LEARNING ACTIVITY NEXUS INDUSTRIAL DEVELOPMENT IN THE CONTEXT OF ZIMBABWEAN EDUCATION SYSTEM 5.0

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Abstract: The present study aimed at exploring the power of Continuous Assessment Learning Activity in connection with industrial development in Zimbabwean education system version 5.0. The education system in Zimbabwe has undergone a transformation in a proposition to industrialise the economy through education as noddled in National Development Strategy for vision 2030 middle income class economy. Thus, the objective of this research was hinged on establishing the industrial skills imposed in learners by CALA a version of curriculum innovation. The study also set an objective of finding evidence of industrial development from CALA and establishing teacher's attitude towards implementation of CALA. The study adopted phenomenological qualitative research study in which systematic sampling was used to select 14 respondents for interviewing over WhatsApp. The study revealed that CALA impose and sharpen research, practical, problems solving and creative skills in learners. As well learners are involved in producing products for sale and developed their entrepreneurship skills. Teacher's attitude showed a negative attitude towards implementation of CALA in schools due to lack of support, poor remuneration and lack of training. The research recommends measure to boost teacher's attitude towards CALA for industrial development.

Keywords: industrialisation, Education 5.0, CALA, practical education

INTRODUCTION

The Zimbabwean education system has undergone a curriculum overhaul. In this case a new educational curriculum was introduced to cater for five needs of the incitement for middle-class economy by 2030 as stated in the National Development Strategy (NDS) towards industrial development through education. The education was made to link education with teaching, research, community services, innovation and industrialisation for problem solving. The education system is premised on the idea of innovating new ideas and solve real-world problem affecting the Zimbabwe's current socio-politico-economic environment. The gist of this type of education is to produce a citizen who is rooted in pragmatic skills for solving spheres of problem arising in our environment.

Thus, the education system has adopted the issue of Continuous Assessment (CA) in the name of Continuous Assessment Learning Activity (CALA). The fundamental role of CALA is hinged on the concept that education must be education with production. It must foster creativity and industrial development through nesting of new ideas at secondary and primary level education. The use of CA in education can be traced back to 1980s in Less Economically Developed Countries (LEDCs). In Tanzania it was introduced in the year 1987 (Byabato & Kisamo, 2014). There are so many countries that has adopted CA in their education system at Secondary and Primary Level. Countries such as Tanzania (Byabato & Kisamo, 2014; Mpapalika, 2013), Ethiopia (Abejehu, 2016), Ghana (Akyeampong, 1997; Boachie, 2016), Nigeria (Atsumbe & Emmanuel, 2012), South Africa (Berg & Shepherd, 2009) etc

has adopted CA copying it from More Economically Developed Countries (MEDCs) and Newly Industrialised Countries (NICs) where NICs has experienced fastest growing economies due to education for industrial development (Zhao, 2021).

As such Zimbabwe has introduced the new curriculum comprising of CALAs at Primary and Secondary Level with the mind of producing education which is able to transform the economy for industrialisation through innovation and creativity. This is guaranteed by establishing and imparting practical skill and develop more Science, Technology and Mathematics Education (STEM), vocational subjects which nurture and cultivate the innovation and industrial skills for development. In each and every Learning Area, there are CALAs in which learners are expected to do. This is done to cultivate, nurture, sharpen and develop skills for innovation and creativity for industrial development in learners.

What is CALA

CALA simply means Continuous Assessment. This is the learning process by which learners are assessed based on what they know and try to sharpen them. The Facilitator (Teacher) identify the talent and skill of learners. This helps the learner to sharpen the dimension of his/her educational domain for creativity, innovation and entrepreneurship which lead to industrial development. The main agenda of CALA in education is to develop and sharpen learner's skills from primary level, grooming them up to tertiary level so that their skills might be tuned and used for industrialisation in a dwindled and poorly industrialised economy. The notion is based on the idea of education with production. Education must produce something which is tangible and contribute to

the development of the economy. As noted earlier, the development of any country's economy is premised on innovation through educational reforms and development. The education itself must create Socrates styles with many questions for probing. These more questions probe for more answers gathered through research and development. Therefore, the education must be grounded on educational research. Thus, CALA in Zimbabwe is made up of CALA type which involve, project, models, research, practical activity, dramatization and demonstration to mention just a few. Every learning area must come up with at least 5 CALAs for every learning area. Thus, each and every learning area must be innovative to scout talents and skills from learners. After identifying the skills, the teacher must scout them, sharpen and develop them in anticipation of innovation of new ideas that could transform and industrialised the Zimbabwean economy in the shortest possible time to come.

In Zimbabwe, the idea of CALAs can be traced back to the institutions of higher learning where students' continuous assessment varies from 25% - 30% depending on the institution. Now the question is based on, did that CA yield a positive approach towards economy and industrialisation since its inception? Thus, CALA concept in Primary and Secondary education was borrowed from Higher and Tertiary Education. CALA is prefaced on the idea that every child who goes to school must come up with something that is tangible for economic development. A learner who dropped out of school from grade 7 might have been fully equipped with survival skills at lower grades. That is education must be geared towards industrial development as well as preparing learners with skills for exiting school and preparing others for academic progression.

Objectives of the study

This research study was impinged by three research objectives on the power of CALA and industrialisation in the Zimbabwean context. The research objectives that underpinned the research are;

- Establishing industrial skills imparted and sharpened by the CALAs in learners at school
- Identifying the evidence of the successes of CALA in Innovation and industrial development
- Exploring the attitude of facilitators towards implementation of CALA in Schools

LITERATURE REVIEW

The researcher reviewed literature in which the education and practical skills has witnessed an upsurge in industrial development. According to Zhao (2021) on his research on Modern Technical education in North East China and its influence on industrial development since 1932, the technical and vocational education has positively influenced industrial growth of the region. This industrial growth claim was based on the notion that Zhao (2021) reasoned that in the early 1915, vocational education and apprenticeship approach became an operative successful training model for new technical talents. Its role was to recruit, identify and sharpen new technical talents in the education system. In this context, people who succeed and revealed new talents and skills were promoted and get employment in the same organisation, however, people who failed assessment in the industry were eliminated. This shows the successes of pragmatic education with production. Zhao (2021) noted that an apprenticeship of learners towards

handcraftsmanship and traditional apprenticeship as a tool that has driven even Japan from Agrarian economy to industrial economy due to innovation which resulted in creation of jobs as witnessed by an increase in jobs and rise in demand for technical personnel in the industry (Zhao, 2021).

In short, Zhao (2021) revealed that vocational and apprenticeship education has witnessed a rise in industrial development of the region. The research article built the knowledge that since 2005 on the fall of educational vocational support apprenticeship, this has witnessed a great fall in industrial growth (Zhao, 2021). In an empirical study by Ren et al. (2021) it shows that there is a good relationship between industrial development and vocational education. The study revealed that there is surplus of aptitudes, talents and skilled labour in the industry and this raises the economy (Ren et al., 2021).

The study articulated that education in practical education and apprenticeship match well with industrial developments (Ren et al., 2021), therefore, education has served its purpose as the spark for industrial development. In a related study in Danish Education system by Bjaelde et al. (2017) it was revealed that the use of CA in Higher Educational Institutions has a paramount role of transforming and making education system effective. In simple, the success and efficiency of the education system nexus development is its ability to transform the economy for the better. Education is the only source that illuminates and refract industrial development. The importance of CA was noted in a study by Akramjanovna (2021), that it mallet the practical skills in learners. CA was seen as a driveway to creative thinking which reduce the gap between theory and practice (Akramjanovna, 2021). It was seen as a way of impregnating practical skills for development. A related study in

South African CA system in education by Berg & Shepherd (2009) evolved with the idea that CA system in South Africa is of poor reliability as it has the same content and context with the final examination, at the same time sometimes marks were inflated. This gives a delusional picture on the effectiveness of CA in education system particularly transformation of the economy through industrial development. With the provided literature at hand CA has shown a great deal of achievement in linking education with industrial development but in Newly Industrialised Countries (NICs) like China and in More Economically Developed Countries (MEDCs) like Denmark as provided in literature.

However, in South Africa it was noted that CA is of poor reliability and dependability as far as industrial development is concerned. This is because of inflating of marks and testing the same content with the examination. With these inconclusive results of CALA in educational sector in connection with industrial development, the present study examines the relevance of CALA nexus industrial development in the education 5.0 context in Zimbabwe. Again, this study has the objective of articulating and elucidating the practical skills imposed and nurtured in learners through CALA as well as identifying preponderance evidence to substantiate the successfulness of CALA in innovation and industrial development.

METHOD

The study stimulated a phenomenological qualitative research study on exploring the power of CALA in connection with industrial development in Zimbabwean Education 5.0 system. This research method was adopted because of its ability to extract the experiences of participants on the evidence of

CALA nexus industrial development. Participants provided their own experiences in which these experiences were coded and merged into themes. Responses/views from the participants were coded and views with the same meanings were merged to form themes. The population of this study is made up of primary and secondary school teachers in Zimbabwe.

The teachers were chosen because they have vast experiences in implementing CALA and they witness and identify skills needed for industrial development. For this study, 14 participants were sampled using systematic random sampling. Of 14 participants, 7 were from Primary school teachers and other 7 were chosen from secondary school. Participants from primary school teachers were systematically selected from a Primary school WhatsApp group of 254 members. As well, 7 secondary school teachers were systematically selected from a WhatsApp group of 257 members. The researcher seek consent from group members about the topic to be studied and inform group members that the researcher is selecting 7 members at systematic sampling method. From all the numbers for secondary school teachers organised in ascending order the 36th number was chosen to take part in research. For primary school teachers, the 36th number was also chosen to represent the sample. The sample was made up of 9 males and 5 female participants. The WhatsApp group was used because of its accessibility during Covid-19, this limit face to face (physical) implementation and administration of sampling methods. The selected participants were coded P1 up to P14 to protect their identity and maintain confidentiality. Interviews were part of data collection instruments.

The researcher makes up structured interviews in which unstructured interviews were also used to probe answers where

possible. Interviews were conducted using WhatsApp audio calls in which the interviewer informed interviewees to prepare for the interviews. Interviews lasted approximately 45 minutes and due to limited capacity of WhatsApp to record calls, the researcher manually noted responses from respondents and analysed them later. Interviewees were earlier informed that their responses are being recorded on paper and analysed for research purpose only.

RESULTS AND DISCUSSION

The results presented below were presented as per research objective. The results are the views of facilitators who implement the CALA in both Primary and Secondary schools. Their views were presented in themes as per research objectives.

Establishing industrial skills imparted and sharpened by CALA in Learners at primary and secondary schools

In regards to industrial skills sharpened by CALA; the study established five themes that have emerged as views of participants. The study finds out that research skills, problem solving skills, creativity skills, practical skills and entrepreneurial skills are the skills that CALA is preparing and cultivate in learners for industrial development. These skills are essential for industrial revolution and fast track development of industrialisation in Zimbabwe as noted in participant's views. The views and themes of participants were presented in the subtopics below;

Research skills

The study revealed that majority of participants mentioned research skill as a core leitmotif that is developed and sharpened by CALA at all levels. The study identified that participants reasoned that CALA is a practical activity which allows learners to

stimulate the problem that is affecting them at local level. With invention of CALA to them they are forced to study the problem and find the solution. Solutions to real life problems are given through research. It was reasoned by participants that learners conduct interviews to other learners, teachers, parents and other stakeholders they feel can provide clear remedy for the problem that arises. It was identified that this research skill sharpened other generic skills such as data collection, observation, interviewing skills and even recording skills as elucidated in the following excerpt;

'Research is a tool that develops other skills such as data collection, observation, problems solving skills and other skills essential for learner development and application in real world situation' P4

This was also echoed in one of the participants' views who reasoned that

'learner's research skills in CALA help them to develop and acquire vibrant knowledge for solving problem even at university level where research is essential' P11

These skills are essential tools for industrial development. There are so many problems out there for the sake of industrial development. These problems need research and experimental investigation which solve problems of the economy and boost industrial development. This was in tandem with a study by Sinha (2018) who reasoned that research is the main tool for the development of the economy and innovation as seen in Myanmar. This was also supported in a study by Bandaranaike (2018) research skills are work related skills which boost the work development skills for industrialisation as seconded in Bunning (2007).

Problem solving skills

The study established that problem solving skill was mentioned among the major themes that are imposed and sharpened by CALA at all levels for industrial development. Participants declared that CALA is a problem on its own which needs a solution as nodded in the following excerpt;

'...the CALA that we give to learners are real life problems and the background shows the magnitude of the problems... learners are supposed to give meaningful solution to solve the problem' P7

In this view CALA is the right channel towards the end of economic problem and problem of industrialisation. Learners are given real life problem to rectify and try to find real lasting solution to solve it. This largely develop and sharpen their skill for industrialisation and economic building in future. This train their minds to independently team up and find a lasting solution to real life problem. The real aim of CALA is to find out the skills, develop and perfect it to create talented educators for development and creativity. Its aim is to create a 'learning factory' (Kipper et al., 2021) where industrial talents are hatched and evolve in reviving the economy of the country as witnessed in China and Japan (Akramjanovna, 2021; Baco & Elihami, 2021; Sinha, 2018; Zhao, 2021). This create pro-active and problem solving skills (Kipper et al., 2021) needed for industrialising the economy from agrarian economy to industrial economy.

Entrepreneurial skills

The study finds out that teachers noted a positive keyhole of CALA in scouting and

developing the industrial skills through identifying and indoctrinating business and entrepreneurial skills in learners. Learners in commercial subjects like Accounting, Commerce, Business Studies, Business Enterprise Skills and Economics are identifying essential skills like entrepreneurial skills. Practical subjects like Wood Technology, Agriculture, Textile Technology, Building Technology and vocational courses like Block and Brick laying and Horticulture are witnessing a sharp rise in developing products that are sellable to the community. It was identified that learners identify problems at their local level and produce products that are scarce and sell them at cheaper price to the community as explained in the excerpt below;

'Learners are selling their agricultural produces like tomatoes, green vegetables, beans and eggs to the community' P1

These practical skills merged with business skills like keeping records, identifying scarcity and market the products, groom learners for potential industrialisation. Therefore, these CALA problems create learners who are wide visionary and suitable to transform the industry in future as it sharpens, inculcate and redefine their talent skills for industrial development through hybrid of entrepreneurship skills with practical skills. This was seconded in a study by Sharma (2021) who postulated that balanced industrial development is achieved through entrepreneurship. This resonated in a Indian review by Ghare & Nehru (2021) who summoned that entrepreneurship skills pave way for industrial development. This was also in tandem with the study by Sonita et al. (2021) that universities are producing quality human resources with entrepreneurial skills needed for industrial development and

industrialisation. Therefore, the education system is heading towards a best solution for industrialisation by inculcating industrial skills at lower level and vehemently perfected at tertiary level for the refinement of the skills for development. As this was supported in different countries towards industrialisation of the economy as noted in China, India, Neymar, Japan and Islamic states mentioned above.

Practical skills

Respondents established that mainly the CALA they give to learners are practical-based CALAs. This means learners are getting practical engagements which help them to abridge theory into practice. Teachers reasoned that some practical engagements such as value addition of groundnuts to peanut butter, fruits to jam and juice is a pure sign of practical activity that led to industrialisation. The research established that facilitators are giving practical engagements such as deforestation in which learners find a lasting solution by afforesting and this leads to production of raw materials to furniture and building industries.

'In Geography we are giving them CALA with practical activity like gully filling afforestation ... this indirectly bear and inform them with industrial skills since the fully grown tree can be used in construction, paper and furniture industry' P14.

The gap between education and industry is reduced through introduction of practical activities (Nyemba et al., 2021). The emphasis on teaching and facilitating these practical skills sharpen and develop them for industrial development as reasoned by (Kakati, 2021). This was also supported in a Ghanaian study by Donani et al. (2021) who put it clear that education is the enabling

factor that link practical skill with industrialisation in economy. The gist of CALA in education largely enables the economy to grow faster if hastened properly without compromising it. This was witnessed in China as vocational colleges were largely imparting practical skills to develop learner talents for industrialisation (Aaltonen et al., 2013; Akramjanovna, 2021; Baco & Elihami, 2021; Bandaranaike, 2018; Bunning, 2007; Ren et al., 2021; Zhao, 2021) which in turn resulted in ballooning of North Eastern China's economy (Zhao, 2021).

Creativity and handcraftsmanship

The present study revealed that CALA at all level impart and develop handcraftsmanship skills and creativity. Real CALA problem invokes learners with the sense of creating solutions to problems associated with the community. Learners in Art and Design were seen to produce good pottery and wood artifacts that show the handcraftsmanship in learners. In coming up with solution learners invoke their five senses which link them to solution that solve problem. In solving real life problems creativity and industrialisation mind is being developed. This was supported by Akramjanovna (2021) who connotes that education creates creativity which unite theory and practice in education. This pave way for industrial development as new ideas of handcraftsmanship manifest through creativity of traditional and cultural artifacts (Aaltonen et al., 2013; Zhao, 2021) for selling and this boost industrial development.

Evidence of the successes of CALA nexus innovation and industrialisation

The study established that two themes has emerged in supporting the successes of CALA nexus innovation and industrialisation. Products from practical

subjects and entrepreneurship are the themes that has emerged in this research.

Products from practical subjects a product of industrialisation

The study indicated that CALAs in practical and tech-vocational subjects like Wood Technology, Agriculture, Art and Design produces are producing tangible and preponderance evidence to substantiate the strong link between CALA and industrialisation. CALAs are a strong tool for the bridging of learner's capacity to transform industries and turn the country to industrial hub. It was noted in this research that participants mentioned that learners through CALA and practical activities are producing agricultural produces like vegetables, fruits, chickens, eggs and meat that is sold to the communities. These products are being used as source of raw material for industries. Thus, existence of CALA in primary and secondary school is largely correlated to industrial development as learners are actively involved in production of goods that enable easy transition of agrarian societies to industrial economy. This was also supported by one of the participants who reasoned that

'Learners are producing chairs and port stands that we can sell for the benefit of the school' P7.

This show learner's active involvement in activities that highly engage in industrialisation. These practical activities develop knowledge, talents and wits about industrialisation as they link theoretical education into reality and practical (Aaltonen et al., 2013; Akramjanovna, 2021; Bandaranaike, 2018; Kipper et al., 2021; Murenzi et al., 2021; Sinha, 2018; Zhao, 2021).

Entrepreneurship in Schools

It has emerged that participants are noticing an increasing number of learners coming up with ideas of establishing tuckshops in school to fulfil the demands of CALAs in commercial subjects and other practical subjects. It was reported by participants that majority of learners are selling their agricultural produces like chicken, eggs, vegetables, fruits, onions etc. This has been necessitated by the rise and demands of CALA in schools. The research revealed that both boarding schools and day schools are actively involved in subjects like agriculture in which learners accomplish their tasks and sell the products which develop and widen school coffers. This actively involve learners in participating in entrepreneurship activities which boost their knowledge and skills in business environment (Kakati, 2021; Nyemba et al., 2021; Sonita et al., 2021) and preparing them for industrial development.

Teacher's attitudes towards CALA implementation in schools for industrial development

Majority of teachers depicted a negative attitude towards implementation of CALA for industrial development. Three themes emerged as common responses cited by participants as the main feature that drag and drain their power towards implementation of CALA.

Poor teacher motivation

Poor motivation was cited by majority of teachers who reasoned that poor motivation is draining their energy and efforts in implementing the CALA.

'This has increased teacher's workload but monetary rewards like salary are still very low and teachers are poor' P6

'...teachers are being poorly remunerated yet CALA which increase our work is being heaped to us without proper knowledge' P14

'They need to restore our salary value as teachers first and we happily implement this CALA thing' P11

Teachers are heavily burdened by this CALA, on top of that research established that majority of teachers cited salary as the major stumbling block that affect negatively on the success of CALA implementation. They mentioned that they are poorly remunerated in the region and their salary is below the poverty datum line which negatively affect their executions of duties. It was revealed that majority of teachers signalled that they are doing side hustles (side business) to supplement their salaries. These side hustles have largely taken teacher's role and time to properly implement CALAs. The research also established that teachers were intermittently going to strike and this has negatively influenced the proper implantation of CALA as sinuated in the following excerpt

'These CALAs are good but teachers are going to strike time and again because of poor salaries ... this is the reason why some teachers are doing CALA for learner in return for money...' P6

The poor motivation of teachers is taking back the power of CALA in developing the industrial spheres of the country. This was witnessed in studies by Atsumbe & Emmanuel (2012) and Hayford (2007) that teachers are not well remunerated to motivate them to do CA. As noted, in the findings of this study, some teachers are doing CALA for learner. This means learners are not gaining anything in terms of development and this creates learners who are

largely educated but lack practical skills to link their education with development of the industrial community. This produce learners with passes in both ordinary and advanced level but lack skills in solving economic and industrial woes of the country as currently experienced.

Lack of training and professional development in CALA implementation

Lack of training was established as an important theme that negatively influence teacher's attitude towards CALA implementation. Participants argued that they have been trained only for 3 days on CALA implementation and assessment. It was revealed that from both trainers and trainee no one was having a tangible definition of what CALA is. Participants mentioned that trainers were having insufficient knowledge of how to implement CALA they were stressing that it's still new to them. Teachers need proper training of CALA as witnessed in a study by Atsumbe & Emmanuel (2012); Hayford (2007) that lack of training lower their capacity to implement it (Akyeampong, 1997; Mpapalika, 2013). This was supported in the following excerpt

'Cala is a new concept to everyone ... if you ask trainers, they say the issue is coming from top administration in the Ministry' P8

'CALA implementation is constantly changing in schools and from the top hierarchy and circulars are coming with the signature "interpretation of this CALA circular rests with the undersigned" ... this allows the administration to change goal post whenever they feel they want to change assessment without teacher's input' P9 and P13

Teachers were largely demoralised by constant change in interpretation of the CALA circular form Ministry of primary and Secondary Education. Respondents reasoned that only top hierarchy is able to interpret the circulars. This gives teachers a torrid time to interpret and implement CALA. The marking and documents needed in successes of the implementation of CALA constantly changes which demoralise teacher's already fragile morale in the implementation of CALA. This largely destabilise the strong core and spirit of education 5.0 for industrialisation and innovation.

Lack of financial support from administration

The study finds out that lack of financial support from schools' administration is interrupting the implementation of CALA in schools. Administration is failing to provide finance to buy resources such as textbooks and consumables for research and executions of other CALA types. For example, respondents reasoned that, learners have to write all questionnaires to be administered to about the students by hand. This clearly signifies the lack of administration support for the implementation of CALA. One of the participants pointed out that admin is advocating for zero-cost CALA, this was in tandem with a study by Atsumbe & Emmanuel (2012); Hayford (2007) that lack of support is an inhibitive barrier to success implementation of CA. However, a study in Tanzania by Byabato & Kisamo (2014) reasoned that teachers show no knowledge of in-depth skills and idea about training therefore, revoking the framework is the best option. In this case, it is true that zero-cost CALA to the school creates a zero-cost economy. Lack of financing from administration creates a very simple CALA which is not capable of producing anything

tangible for industrialisation as noted in Participants' views.

CONCLUSION

The study established and conclude that Continuous Assessment and Learning Activities (CALA) plays an important role in developing and sharpening industrial skills such as research skills, entrepreneurship skills, creativity and handcraftsmanship skills, practical skills and problems solving skills which link theory to practice as far as industrial development is concerned. The study also established that there more and clear evidence to substantiate the success of CALA in innovation and industrialisation. Schools through CALA are producing agricultural products that they sell and improve school coffers and this inculcate entrepreneurship skills which is the key enabler to industrialisation. Besides, the enormous benefits of CALA mentioned in the findings of this study, the study finds a negative attitude of teachers towards the implementation of CALA in schools. Negative attitudes were mentioned to be largely connotated to poor motivation of teachers in schools, lack of training and lack of administrative support for CALAs in schools. in regard to the findings of the study, the researcher recommends that teachers should be remunerated to effectively implement the CALA for industrialisation and development. This highly reduce their side business to supplement their income as noted in the study. Administration must be highly involved in CALA through financing learner projects. A high-risk financial involvement in CALA produces a more profitable knowledge and talents for industrialisation. Lastly, sufficient training and knowledge about CALA must be largely invested in teacher in order to boost their morale and acquire a permanent knowledge

base in teachers to implement CALA in schools. If these recommendations were to be addressed, teachers' motivation coupled with the successes of CALA will develop a fast-growing economy in connection with education 5.0 system.

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