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Assessing school heads' leader innovative behaviours and sustainability of innovations in Gweru rural primary schools, Zimbabwe

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ABSTRACT

This study aimed to assess school heads' innovative leadership behaviours and schools' capacity to innovate and sustain the innovation agenda from the perspective of educators. The study was anchored on a mixed methods design. A sample of fifty educators from ten schools, who had worked for at least two years under the particular school head participated in the study. Schools that provided participants were randomly picked from neighbouring Shurugwi, and Gweru Districts as these two districts were convenient for the researcher who lives in Gweru. A questionnaire was used to generate quantitative data that was presented using a frequency table and descriptive statistics. Qualitative data was generated using semi structured interviews. Findings from the study revealed marked fluctuations in the use of leader innovative behaviours by school heads, suggesting that some leader innovative behaviours were used more often and some were rarely used. It was concluded that school heads' use of innovative behaviours was erratic, inconsistent, pointing to no systematic approach to promote innovation in the schools. Findings of the study also revealed that schools had very limited capacity to push and sustain the innovation agenda as most critical resources needed for this endeavour were not in place in the schools. The innovation culture seems not to have set in most schools that were under study. More school heads training and empowerment was recommended to assist school heads exhibit consistent innovative leader behaviours that will promote and drive innovation in schools.

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INTRODUCTION

Schools are under pressure from ever changing demands from the state, parents, shifting learner needs and expectations. Education institutions in Zimbabwe have responded to these pressures by periodically reviewing their curricular. The latest review, updating the existing curriculum to a Competence Based Curriculum began in October 2014 and was implemented in 2017 for Primary and Secondary schools. The Education 5.0 curriculum for Higher and Tertiary education institutions was incepted in 2020.

Under the Competence Based Curriculum, students are expected to acquire precise measurable descriptions of knowledge, skills, and behaviours called competencies. The competencies should enable the learner to develop critical thinking skills, be creative, innovative and be able to work and live well with other people (Ministry of Primary and Secondary Education, 2015). This mission of education for primary and secondary schools in Zimbabwe dovetails well with that of Higher and tertiary education called Education 5.0; which says Higher and tertiary education must be anchored on a curriculum driven by teaching, research, community engagement, innovation and industrialization (Ministry of Higher and Tertiary Education, Science and technology Development, 2017). The review of both Primary and secondary, and higher and tertiary education curricular put into sharp focus the aspect of innovation in education. In Zimbabwe, learning institutions are no longer seen as centres for teaching and learning only; the institutions are now seen as innovation hubs that should spearhead heritage-based social and national development through producing knowledge that can stimulate the production of new or improved goods and services (Ministry of Higher and Tertiary Education, Science and technology Development, 2017).

Although the impact of innovation on educational management and leadership is appealing, the majority of leadership studies in the past tended to assess leaders' impact on performance or affective outcomes rather than innovation-related outcomes (Janssen,

2000; Jeroen and Zoetermeer, 2003; De Jong and Den Hartog, 2007). However, in the recent past, there has been a change of focus with more and more studies (like the current study) focusing on innovative leadership, (Manea, 2015; Akin, 2016; Bakır, 2016; Niyamabha and Wichitpacharaporn, 2018; Sauphayana, 2021; Ye and Tan, 2022).

The word "innovation" comes from the Latin words '*in*' and '*novare*', meaning "to make something new, to change (Bessant, 2009)." According to Sagir (2017), the term innovation has been defined with terms such as 'novelty', 'discovery' and 'invention'. On the other hand, Robbins et al. (2017) opine that innovation is the ability to channel creativity into useful outcomes. In this study, innovation is seen as the implementation of a new, novel or improved organizational method, process, marketing strategy, product or service in the school organization that will result in improved school outcomes and satisfaction.

Types of Innovation in education

Whilst innovation has been seen as the mainstay of industry, recent developments in the competitive global world have seen innovation being a concern in the public sector and education in particular. Organisation for Economic Cooperation and Development (OECD)-Eurostat (2005), Oslo Manual identified four types of innovation that may apply to education as:

Product innovation: is the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. In education, this may be a relatively simple improvement like making adjustments to current traditional assessment criteria to improved methods compliant with the Competence Based Curriculum.

Process innovation: is the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software. An example can be the migration from face-to-face teaching to blended and online teaching and administration processes particularly during the COVID-19 pandemic.

Marketing innovation: is the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion, or pricing. In the recent past, school have gone digital in terms of marketing their educational products. Online courses were redesigned and repackaged to be user friendly to students separated by distance and cultural diversity.

Organisational innovation: is the implementation of a new organisational method in the school's business practices, workplace organisation or external relations. For example, teachers can now work from home delivering online lessons and parents can pay fees and communicate with the school from the comfort of their homes, a development linked to the outbreak of COVID-19. Such a radical migration from the traditional organisational arrangement to the digital one may be seen as organizational innovation.

Why innovation in education

In the business world, a company needs to keep up with competition by periodically introducing new or improved products and services. It must improve on its production efficiency and marketing management in order to remain relevant and attractive to its customers. Education used not to operate within competitive markets and did not have incentives to innovate as businesses (OECD, 2016). However, among other things, globalisation, state and stakeholder accountability pressures are forcing education to innovate and maximize the value of public investment in education. Innovation could stimulate efficiency resulting in improved educational output, outcomes and the quality of education provision, resulting in significant welfare gains for society and the national economy. Also, findings from several countries have shown a strong positive correlation between increases in innovation and better educational management and leadership (Antypas, 2021; Sauphayana, 2021,). As such, it is the researcher's submission that the secret to successful leadership in Zimbabwean schools and schools elsewhere facing a similar situation, lies behind school heads who are innovative and are supportive of teachers' innovative behaviours.

Whilst innovation has been a subject in industry and commerce, its migration to the education sector requires that management and leadership in education pay special attention to innovation and innovative leader behaviours that promote change and innovation. Leader innovative behaviours have received attention in many studies. For example, in a study by Sağir (2017), it was established that school heads use leader innovative behaviours in most of their interaction with educators. In another study by Khaola and Oni (2020) it was found that the school head's leadership style influences educators' innovative work behaviours. Research also established that School heads' innovative behaviours are closely related to employee creativity and individual innovative behaviour (De Jong and Den Hartog, 2007; OECD, 2016). All the studies reviewed foreground the centrality of the school head in influencing educators'

attitude towards innovation. However, in Zimbabwe, little is known about school heads' capacity and readiness to lead and promote innovation through displaying appropriate leader innovative behaviours. In this study, the researcher assessed school heads' leader innovative behaviours from the perspective of educators.

Leader innovative behaviours are seen as behaviours directed towards the initiation and application (within a work role, group or organization) of new and useful ideas, processes, products or procedures (De Jong and Hartog, 2007; Yuan and Marquardt, 2015). In this study innovative behaviours are seen as all individual actions directed at the generation, introduction and application of innovations in a school. Such behaviours also include the creation of innovative cultures and creativity among educators. School heads' innovative behaviours have been identified in the literature on innovation in general and education in particular (Bakir, 2016; Bessant, 2009; Daft, 2015; OECD, 2016; Sagir, 2017; Robbins et al., 2017; Robbins and Judge, 2017). The most common innovative behaviours identified from the literature which school heads may display to stimulate innovative behaviours in educators are;

- Innovative leadership: Visionary, Role model, who supports innovation in action as well as in words.

The head makes innovation an explicit core value of the school

- The head provides tools, equipment and resources and training to support innovation
- The school head supports and recognizes staff for taking initiative and risks.
- Staff are encouraged to engage in forms of inquiry/research to investigate and extend their practice.
- Staff are encouraged to have open minds about doing things differently.
- The head sees problems and mistakes as opportunities for learning.
- Students are actively engaged in inquiry.
- Leaders help the teachers they guide to embrace change, take risks, and foster creativity in their classrooms.
- The head support parental engagement initiatives and community partnerships that stimulate creative ideas about curriculum and learning experiences.

Apart from assessing school heads' leader innovative behaviours, the study also assessed schools' capacity to sustain innovations. "Sustainability refers to the process of integrating the innovation intervention's core aspects in organizational routines, which are adaptive to ongoing work, with maintenance or continuation of improved results (Prenger et al., 2022)." On the other hand, Fix et al. (2021) see innovation sustainability in education as a process of institutionalization of the innovation such that it spreads over the school organization. Whilst many innovations inter the education sector often, most schools struggle to sustain such innovations. Most innovations are visible at the early stages of inception and they quickly fizzle out in no time. Lack of commitment to an innovation is cited as one reason behind poor sustainability of innovations (Fix et al., 2021). Educator buy-in and the school heads' leadership are some of the factors that influence sustainability of innovation (Prenger et al., 2022). School culture and structures were identified as some of the determinants of sustainability of educational innovations by Bakir (2016).

The study assessed the extent to which leader innovative behaviours were being elicited by school heads in their leadership endeavours as well as their schools' capacity to push and sustain the innovation agenda. Assessing Innovation in Education is a pioneering attempt to provide indicators for the Zimbabwe education system's readiness and capacity to implement an innovation driven curricular. The results of the study will inform educational policy formulation and implementation and the practice of education in general.

METHODOLOGY

Inspired by the pragmatist philosophical paradigm, which holds no allegiance to a particular set of rules or theories but rather suggests that different tools may be useful in different research contexts (Saunders et al.,, 2007; Leavy, 2017), this study adopted a Mixed Methods Design. The mixed methods design involves the use of both quantitative and qualitative data in a single research project. Leavy (2017) sees the mixed methods design as broad encompassing five design approaches namely Exploratory sequential, Convergent, or concurrent, Qualitative nested in Quantitative and Quantitative nested in Qualitative. In this study the concurrent design was used. In the concurrent design, data collection with both qualitative and quantitative methods is carried out simultaneously and analysed. The two data sets are then cross-validated. Using a qualitative or a quantitative approach on its own will not give a full understanding of the phenomenon being investigated since only one world view will inform the study. Mixing methods in this study gave a richer and more reliable, broader, rounded and deeper understanding

of the research phenomenon than a single approach could have yielded (Cohen et al., 2018).

The researcher collected quantitative data about school heads' innovative behaviours using a questionnaire administered to fifty educator participants selected from ten schools randomly selected in Gweru and Shurugwi districts of the Midlands province of Zimbabwe. Ten participants purposefully selected participated in semi-structured interviews to shed light on schools' capacity to implement and sustain the innovation agenda. By choosing the above mentioned districts, the researcher had some convenience since he stays in Gweru. Participants who had stayed at their current station for a minimum of two years with the same school head participated in the study. These were deemed to have experienced the school head's innovative behaviours enough to be able to accurately report on them. A frequency table was used to present quantitative data. The data was analysed using totals and percentages. Data from interviews was put in categories, coded and emerging themes were identified. Consent to participate in the study was sought and participants were free to terminate their participation at any stage of the research process. Only pseudonyms were used in the study in order to protect the identity and privacy of participants. The researcher made appointments and visited each school, distributed questionnaires, conducted interviews and collected the questionnaires soon after they were completed. This way, he was able to reach the target of having fifty questionnaires completed and ten participants interviewed. Resources permitting, the study could have covered more districts in many provinces to possibly enhance external validity and minimize sampling error. As such a more extensive study building on this exploratory study is planned for the future.

RESULTS AND DISCUSSION

The data in table 1 that follows is from a ten-item questionnaire assessing school heads' use of leader innovation behaviours in their day to day interaction with educators. The questionnaire was answered by fifty educators.

Table 1. School heads' use of leader innovative behaviours

Titles	Never	Sometimes	Always
1. The head makes innovation an explicit core value of your school	6	28	16
2. Provides tools, equipment and resources and training to support innovation	11	33	6
3. The head encourages students to actively engaged in inquiry	31	13	6
4. Staff encouraged engaging in forms of inquiry to investigate and extend their practice.	11	26	13
5. The head is Innovative, Visionary, Role model, who supports innovation in action as well as in words.	9	25	16
6. Problems and mistakes are seen as opportunities for learning.	13	23	14
7. The Head guides teachers to embrace change, take risks, and foster creativity in their classrooms.	3	25	22
8. Parental engagement initiatives and community partnerships are also important approaches for the School Head	3	30	17
9. Staff are encouraged to have open minds and do things differently.	6	17	27
10. The head supports free communication among teachers and also departments	6	21	23
Total	99 19.8%	241 48.2%	160 32%

According to Table 1, 19.8% of the participants said their school heads never display any innovative behaviours in their interaction with staff members. The majority of participants, 48.2% said their school heads sometimes exhibit leader innovative behaviours in their interaction with staff members. This may suggest that, whilst the majority of school heads use innovative behaviours to stimulate innovation among teachers, their use of these behaviours is not consistent. Also, quite a significant number, 32% said their school heads always exhibited leader innovative behaviours in their interactions with staff members. It may therefore be concluded from the data that 80.2% of the participants were in agreement that one way or the other, school heads used innovative behaviours in their leadership. This finding is similar to a finding by Sağir (2017). In his study, it was established that school heads use leadership innovative behaviours in most of their interaction with educators.

The 19.8% who said school heads do not display leader innovative behaviours represent a relatively big percentage worth noting. It may be inferred from this statistic that there are some schools (19.8%) where the campaign to innovate has not yet taken root. Among other things, this may be as a result of the concerned school heads' leadership styles or resistance to change attitude. As noted in a study by Khaola and Oni (2020) school heads' leadership style influence educators' innovative work behaviours. School heads who are not innovation pro-active in their leadership may hinder innovations in their schools.

Also, of note is question three on the table/graph where the 'never use leader innovative behaviours to encourage enquiry among students', response is a very high (62%) as compared to all the other questions. Whilst bold strides have been made to promote the innovation discourse in schools, this result suggests that the campaign has as of now targeted educators, and learners who should be the prime beneficiaries of the innovation agenda are yet to benefit from the campaign to innovate in schools. As such, it may be argued that successful innovation cultures can only be built by adopting a holistic and comprehensive approach to innovation that leaves no one behind. This is supported by Barkir (2016) who said school culture and structures were some of the key determinants of sustainability of educational innovations.

Interview data

Ten interviewees were asked about the availability of time, budgets and infrastructure that may capacitate schools to push the innovation agenda effectively. Below are some typical responses captured in the interviews.

Time for working on innovations

Quest: Is there time set aside for innovation activities?

There is no special time dedicated to innovation activities here. Our timetables have largely remained the same, save for changes that were made to accommodate new subjects that were brought in by the Competence Based Curriculum (Participant 4).

Quest: So how do you work on your innovations?

Innovation is talked about but there is little happening on the ground. Innovation activities need a lot of time in most cases. However, it looks like our timetable is full already (Participant 4).

Quest: How much time is set aside for innovation activities?

There is no time for that. We are in classrooms teaching from 0800 to 1300. From 1400 to 1600 we are doing sports or we are in classrooms again for study (Participant 7).

The generality of participants as represented by the quoted typical responses above, claimed that innovation activities did not have a slot on the school-wide timetables. This makes innovation susceptible to rhetoric and theorisation, threatening its sustainability in schools.

Innovation budget

Quest: How much money is set aside to finance innovation activities?

At this school I haven't heard of such a budget. However, it is a known fact that the school is always operating in the red. Few parents pay school fees and its hardly enough even to buy chalk or to affiliate so that we participate in sporting competitions with other schools (Participant 10). Our School is privileged in terms of finances because the church running the school has many sources of revenue. Innovation is encouraged here and there but I haven't head of an innovation budget at this school (Participant 2).

The data about time and budgets points to deficiencies in terms of commitment to supporting innovation initiatives. Without a dedicated budget and time to work on new innovations, it will be very difficult if not impossible to initiate innovations or sustain them. In line with this finding, Fix et al., (2021) noted that lack of commitment by relevant stakeholders hinder sustainability of educational innovations.

Support infrastructure

Quest: If someone comes up with an innovation idea, they may want a room, a lab, a shed or a piece of

land where they may experiment with their idea. What infrastructure is available here that may be used for this purpose?

The infrastructure that we have is what was used with the old curriculum. Nothing more was added or converted to a new purpose in line with the updated curriculum. In terms of buildings we actually have a shortage. If you happen to have an innovation idea that you want to work on, you have to first improvise working space (Participant 1).

Our school is big. We have buildings and a lot of space. We have a big lab, a hot culture garden and a farm. However, the issue of dedicating any one of these to innovation activities will be a new idea at this school. Of course if you ask for permission to use the infrastructure I don't think you will be denied. However, you may need the support of a horticulture specialist. These are not yet deployed in our schools. A challenge with our lab and labs in other schools around us is the lack of lab technicians and lab chemicals (Participant 5).

The school does not have more than enough buildings. Since innovation in schools is now mandatory I think any part of the school grounds and other infrastructure can be used for that purpose. However, I do not remember anyone making a request or being denied a request (Participant 8).

The data suggests there is a business-as-usual culture in schools that militates against new innovations and their sustainability. Whilst school heads are talking about innovation, it looks like the culture of innovation is yet to set in their schools. The old structures that did not promote innovation and its sustainability are yet to be disbanded. Similar findings were made by Bakir (2016) who found that some school cultures and the nature of structures in education may hinder innovation sustainability.

Innovation incentives

Quest: What incentives are there for educators and learners who innovate?

Schools used to compete (science exhibition competitions) *showcasing innovations and models at cluster and district level but this quickly lost steam due to shortage of funding. Whilst a thank you is Ok, people expect something tangible and worth the effort (Participant 3).*

The head will thank you and acknowledge your effort particularly at big school functions. However, we expect more than this (Participant 9).

At our school non-monetary incentives were once given but people complained that it was too little. Even learners showed their disapproval. I think that is why innovation competitions that we had soon after the launch of the updated curriculum are dying a natural dearth (Participant 1).

Findings from the data suggest that educators lack the zeal to participate in innovation activities because they are not motivated enough. The finding supports that of Prenger et al., (2022) who established that educator buy-in and the school heads' leadership are some of the factors that may hinder sustainability of innovations in schools.

A striking pattern coming out of all interview data about schools' sustainable capacity and readiness to innovate is that schools are challenged in this area. The availability of science exhibition competitions that may motivate and capacitate schools to push the innovation agenda effectively was found to be seriously lacking in all the schools that took part in the study. Efforts were made in a very few schools but this effort proved to be unsustainable. For example, participants mentioned the science exhibition competitions that are dying a natural death and the innovation incentives that waned and eventually disappeared. Lack of sustainable incentive schemes militated against the sustainability of innovation initiatives in the schools.

CONCLUSION AND RECOMMENDATIONS

From results of the study, it can be concluded that School heads are mostly promoting innovation in schools by displaying appropriate leader innovative behaviours. However, there is still room for improvement in this area since a few school heads are not displaying these leader innovative behaviours and those displaying the behaviours are not doing so consistently. It was also noted that some stakeholders in the school system like learners are not getting the attention to innovate that they deserve from school heads. It was also concluded that, whilst school heads are making bold efforts to promote innovation by displaying appropriate leader innovative behaviours, the sustainability of their efforts is facing a serious challenge due to lack of capacity by most schools. The schools lack support from the Ministry of Education, time, budgets, infrastructure and specialized staff that may complement and capacitate them to push the innovation agenda. Whilst quantitative data suggests that school heads support innovation through displaying appropriate leader innovative behaviours, qualitative data contradicts this by pointing out that at school level, there is little commitment to sustain innovation activities. Schools also lack innovation cultures that can stimulate and nurture innovation. This suggests that school heads may be stuck in

innovation rhetoric with no pragmatic action on the ground.

Leader innovative behaviours are crucial for sustainable innovation. However, it may be concluded from the results of this study that these behaviours may not work wonders on their own. Leader innovative behaviours that lead to sustainable innovation cultures need complimentary support from other factors as alluded above and summarized in the illustration in figure 1 below.

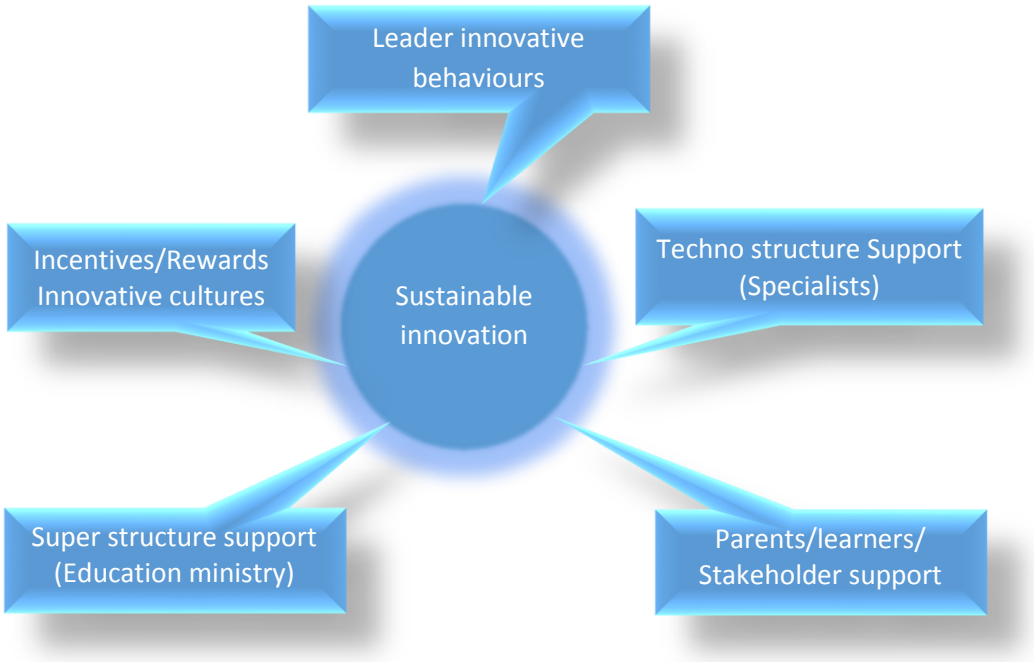

Figure 1. Factors that support sustainable educational innovation.

Recommendations

It is recommended that;

- The ministry of Primary and Secondary Education through its various structures may continue to promote the innovation agenda through awareness campaigns and training in schools.
- Sustainable rewards and incentives may be used to encourage the growth of an innovative culture in schools.
- A more holistic approach to promote innovation targeting among others, parents, learners and all school stakeholders may be adopted.
- Innovation cultures in schools should be encouraged.
- Resource generation initiatives at national and local level to support innovation should be encouraged.

DECLARATIONS

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Data availability

The datasets used and/or analysed during the current study available from the corresponding author on reasonable request.

Competing interests

The authors declare no competing interests in this research and publication.

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