

Knowledge Creation and Innovation: The Results of Research by Communities Working Together to Address Common Problems.

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Abstract

This paper presents the process and results of Integral Research carried out in a manufacturing environment in Zimbabwe in an effort to address the challenges presented by skills flight emanating from a harsh economic environment. As skills flight presented and continue to present challenges faced by a work community, it was agreed that the same community be given the opportunity to find solutions for its own problems. Basing on the results of this Integral Research, it is argued that action research promotes the concept of the researcher and the community becoming co-researchers, leading to social innovation. It is anticipated that such innovation and sustainability of the results of such research become more acceptable to the community because of the sense of process ownership realised by the community members. With this theorising stint, this paper is both a pacesetter on how to carry out integral research using the Cooperative Inquiry trajectory and on how new knowledge and innovations can be shared to the greater community, therefore going beyond the research community.

Key words: Cooperative Inquiry, Innovation, Experiential knowing, Socialisation, Externalisation, Combination, Practical testing, Internalisation.

1. Introduction

Not only has the subject of knowledge creation and development gained prominence and momentum in recent years. In the case story shared here, the issue of harnessing knowledge became a challenge for a Human Resources Director in a manufacturing enterprise in a hyper-inflationary economy. The challenges of skills retention became enormous. This challenge influenced the choice of topic for doctoral research. The situation increased the researcher's passion to improve knowledge systems at work places, resulting in a model for knowledge transfer and creation. This model's applicability is not only limited to workplaces, but can work for families, communities and other arms of society.

In this research the author worked with three groups of co-researchers (Cooperative Inquiry Groups) (Heron, 1996) within and outside the company. The outcome of the

research was the Calabash of Knowledge Creation (*Denhe re Ruzivo*) (Mamukwa, Lessem and Schieffer, 2014). This model was tested and utilized in three corporate, public listed manufacturing companies in Zimbabwe.

One of these Cooperative Inquiry groups developed into the Pundutso Centre for Integral Development, which has begun to engage with the Zimbabwean Society following the CARE rhythm of Community Activation, Catalysation, Research- to- Innovation and Education (Knowledge Embodiment).

In this article I will also share how new knowledge will be developed through the Pundutso Research Academy and shared with appropriate communities through a communiversity.

2. Research Trajectory

Heron (1996) postulates that Co-operative Inquiry (CI) has its roots in Kurt Lewin's work. However, the dimension brought to the table by the likes of Heron and Reason (1988, 1994) takes this to a different level and plane. CI is a form of action research aligned to the Eastern Path of Renewal (Lessem and Schieffer, 2009). It involves two or more people researching a topic through their own experience. In my CI at Turnall there were twelve co-researchers. In CI, co-researchers research with, and not on one another. No one is more superior to the other, but all are equals. People are treated as active agents, and not as passive subjects (Reason and Bradbury, 2001). Participants are therefore both co-researchers and co-subjects (Reason and Bradbury, 2008). This form of research is transformative by nature (Heron, 1996: Lessem and Schieffer, 2009).

2.1 Stages of Co-operative Inquiry

Heron (1996) came up with four recognised stages in CI. Stage 1 involves bringing a group of people with a common interest together and identifying issues to be researched. This is the first reflection stage where the researchers choose the area of focus for their research, come up with a launching statement for the topic of inquiry and an action plan for this first phase. Researchers also agree on how experiences are recorded.

In Stage 2, which is the first action stage, the researchers explore in experience and action the inquiry topic, applying an integrated range of inquiry skills. It involves applying agreed actions and observing and recording the experience. Keeping records of the experiential data remains a critical aspect of the research process.

In Stage 3 researchers fully immerse themselves in the action phase, remaining open to experience. In Stage 4, which is the second reflection phase, researchers share the data from the action phase, review and modify the inquiry topic in the process of making sense of the data, and choose a plan for the second action phase.

2.2 Four Epistemologies

Heron (1996) identifies four types of knowing, namely, experiential, presentational, propositional and practical knowing.

Experiential knowing involves knowledge created by conscious being, grounded in the sensory environment. In the CI group under review, experiential knowing was explored as co-researchers shared their experiences at Turnall and the challenges they saw the business facing with regard to the creation and management of knowledge. Presentational knowing involves reflection and knowledge generated through artistry and imagery. Here poetry, song and dance, producing rhythm through playing the African drum, among other artistry, were employed. Propositional knowing then is the formal theoretical, conceptual knowledge expressed through language. Here, co-researchers can come up with theories and models. Practical knowing involves practical application where the theories and models are implemented and validated. In a way, this is the most important part as it defines whether the theories and models are usable or not, and how valid their applicability is.

3. Purpose of Research

The purpose of the Cooperative Inquiry research was to bring transformation to Turnall in the area of knowledge creation and societal learning. The co-researchers agreed that this was an area of concern, given that many critical skills were lost, (and by extension, knowledge was lost), during the hyper-inflationary era.

3.1 The Co-operative Inquiry Group

In the choice of co-researchers from the Management team, consideration was given to the roles that these co-researchers would play when it came to the implementation of the outcomes of the research. For this reason, the Works (factory) Manager was chosen, because the outcomes of the research would have a direct bearing on his factory. He was also requested to play the role of facilitator as he had a good rapport with the employees. This would leave the PhD researcher free to observe and listen. The Human Resources (HR) Managers were also requested to participate as they would play a critical role in assisting to roll out the outcomes of the research to the other sections of the company. One of them became the recorder or secretary. She would be responsible for keeping a record of all the meetings in a minute book. The main area of research would be the factory, where the results of the skills and knowledge loss were most obvious. Two members of the general factory workforce were also included in this first grouping. What they brought to the table was informal worker leadership, which was felt to be useful in terms of bringing the other workers on board.

The workers' committee members represented the institution, and had the added advantage of bringing first-hand information on how the workers viewed the challenges faced by the company. The CI group's representation therefore cut across all ranks, with four shop-floor employees, three supervisors, one foreman, two managers and one executive director.

The role of the PhD researcher was that of catalyst, but on the whole, she was a co-researcher working together with the other researchers on an equal footing. What she brought to the table was a more enhanced understanding of Co-operative Inquiry as a research method, in addition to other tools that might be necessary to use, such as Kolb's Learning Styles Inventory (LSI).

The CI group named itself *Denhe re Ruzivo* (the calabash of knowledge). In the African culture a calabash is used for storing and sharing beer or water, with people actually drinking from it. The concept then was to gather knowledge into this metaphorical calabash then give it to others in the company and beyond to quench their knowledge thirst.

Outside of this CI group is what I will term the *de facto* CI group consisting of the Management Committee. Any critical discoveries were shared with these people,

and this way they also had the opportunity to bring their observations and inputs to the table.

There was of course my CI group of co-researchers from the PhD group, consisting of the then General Manager of Astra Paints as well as the then Board Chairman of ART Corporation. This group shared observations and tried any new discoveries on the other two companies, to validate whatever would be happening at Turnall, and vice versa. It called itself Pundutso, which means “transformation”. Pundutso would meet on a regular basis to exchange notes and share experiences from their different CI groups.

3.2 Stages of Cooperative Inquiry

3.2.1 Stage 1

The first thing that the group did was to get to know one another. They shared their different totems, their places of origin, their family situations, how they perceived the work situation to be and the role they played in the overall achievement of the company’s objectives and those of other employees. Just talking about themselves and what they did seemed to inject some energy and enthusiasm in all of them, and to dissolve barriers. All the members were anxious that jobs be preserved. Sharing personal information appeared to bring the co-researchers closer together, and also as individuals to remind us that we were all important individuals in our own right, bringing our individuality to Turnall and becoming a force to reckon with as a workforce. We started greeting one another in our traditional way, which seemed to relax all of us and boost our egos in a positive way.

Following Heron’s four stages of Co-operative Inquiry (1996), we started with Stage 1. Here as co-researchers we discussed and agreed on the focus of inquiry, in this case knowledge creation and societal learning using the Turnall case story. We agreed on how often we would meet (which was once a week) to discuss these issues, how we would record our discussions, and how important it was to share our practical experiences. The specific key objectives of the research were discussed, resulting in the following being adopted;

- To come with an innovation that has the capacity to transform knowledge creation and innovation at Turnall,

- To identify problems/challenges faced in the factory, and focus on finding sustainable solutions to such,
- To convert tacit knowledge gained from past/current experiences in the factory into explicit knowledge, and to keep a knowledge repository in the organisation for current and future use,
- To incorporate our indigenous practices, languages and norms and blend these with exogenous learning practices to enhance organisational learning and continual improvement, and
- To manage information and learning in a practical but sustainable way.

In the *Pundutso* CI group we met every fortnight, and apart from discussing any sticking issues in our various research areas we shared whatever was of interest and compared notes from the results of our company-based CI groups. *Pundutso* was in a sense an academic think tank.

3.2.2 Stage 2

In the second stage in *Denhe re Ruzivo* we discussed how we would engage on agreed actions. We agreed that, as we continued the journey of our CI group, we would stumble on information that needed immediate action, and this would be immediately implemented. We also agree that we would discuss the outcomes of this implementation to see what difference it was making.

Over and above this, we agreed that we would observe and record the process and outcomes of our experiences and explore these outcomes. We would be guided by the concept of what we believed we wanted to achieve, namely, a situation where, when people leave the organisation, the said organisation would not be crippled as a consequence of lost skills and knowledge. Of importance to us would be how we can marry the African (indigenous) perspective with the exogenous workplace, with a view to improving and enriching the workplace.

3.2.3 Experiential knowing

A lot of time was spent in *Denhe re Ruzivo* on co-researchers sharing their experiences at Turnall during a total of 260 years of combined service. This became

the ice breaker, as people went down memory lane, reminiscing about their careers, their practical experiences, the good as well as the bad times. Co-researchers really began to warm up in this session, and we agreed to give this more time so that all members could get the opportunity to share. We tried to distil the experiences to get the lessons learnt for the past as well as for the future.

3.2.4 Specific Problems Encountered in the Company

The CI group identified the problems that as be-dogged the factory as low production outputs, poor product quality, antiquated equipment as well as limitations in skills to repair key machine components, a sign that we had performed poorly over the years with regard to the passing on of tacit knowledge.

A few people in the management team felt that, sometimes certain approaches needed to be used in managing the said employees to avoid anarchy and disorder. Some felt that employees tended to want to complain about the way they were treated, ignored and not consulted; this was their nature. On looking at the results of the profiling of the Kolb Learning Styles Inventory, I discovered that, by some coincidence the managers with these views were pragmatist. The challenge was to show both sides that there were more merits than demerits in working together and consulting one another, and to show members of the management team that employees were not little devils that needed to be always whipped into line. They too had a meaningful contribution to make when given an opportunity.

It became apparent then, that a relational approach to knowledge sharing and creation bears more positive results. For example, in most companies including our own, there are some older people who have done their jobs for a long time. Unless one builds a relationship with them, they will not share their knowledge. In fact, not sharing one's knowledge was perceived as a way of securing one's future, for as long as no one else could do your job, you remained critical and relevant to the company. There is therefore need to relate properly and gain the confidence of the more experienced people before they can share their knowledge and skills with you. Such confidence has the effect of assuring them that they are important to the enterprise, even if they are not the only one with a given skill.

Further discussions at *Denhe re Ruzivo* highlighted the fact raised earlier, that some people lacked a skill they should have because the method used to transfer that skill did not accord the learners enough practice for them to gain confidence in executing the skill. At the time of carrying out this research the company was installing a concrete tile machine, and the Italian supplier had sent some engineers to install the plant and train local employees on how to operate the machine. Members of *Denhe re Ruzivo* used this example to illustrate that people learnt fast because the Italians were demonstrating things and allowing the employees a lot of practice until they had confidence in what they were doing. They pointed out that this did not always happen in such a way when fellow employees were transferring knowledge and skills to one another.

3.3 Presentational Forms of Knowing

An explanation was given on presentational knowing (Heron, 1996), followed by a discussion on how this could be executed. The co-researchers came up with many ideas, including *majakwara* (group work, where an entire village work together to kill a task), story-telling, poetry, art, music, fables about how people live and work together, and skits about knowledge creation and management at the work place. They were encouraged to come up with specific presentational knowing activities, which would be practically presented in a subsequent CI meeting.

In *Pundutso* we shared stories about our experiences in the work situation. Josh shared his story about the cadetship programme when the cadets (Josh included) were told to forget about their degrees and start learning. He added that the environment was unfriendly, so employees began to resist management. Passmore shared a story about a manager in his stable who had to be relieved of his duties because of a dishonest act. The issue was that the manager had failed to live up to one of the company's values, *integrity*. The reasons for relieving him of his duties was that he was setting the wrong example to those he led, bringing in the old adage of "do as I say, not as I do". The message was that if a leadership team comes up with values, they should hold themselves accountable to such.

3.4 The Workforce's Expectations on the Outcomes of the CI

In the course of the CI group, the core members of the research group would, without consultation, co-opt briefly a colleague into the CI group. Whenever this happened, it observed that it was because the members of the core group felt that such a person had something useful to contribute. When co-researchers felt free to do this without consultation, it was a sign that they truly felt that they were part of the CI group and had the authority and confidence to do what they felt was in the best interests of the group and the research process.

In addition to this, the fact that the CI meetings happened right inside the factory, in full view of all employees gave the whole exercise some transparency, making the entire workforce comfortable with the research. There did not appear to be any suspicions about what was happening. It was clearly understood in the factory that the CI group was carrying out research for a degree programme that the main researcher was doing. They openly talked about this aspect, and declared that they would do all that was necessary to make sure that she satisfactorily carried out the research. It was also appreciated that practical, transformational outcomes of this research were expected, and would be implemented to improve the way we do things in the factory and in the company as a whole. For this reason, the floodgates of information were opened. People were very eager to share information about themselves as well as past events in the company, hoping that this would help clarify issues and pave the way for positive outcomes of the research.

As this research happened at a time the company was experiencing some difficulties as a consequence of the economic dynamics in the country, it was evident that co-researchers and those outside the centre of the research were expecting some wonderful things to happen in this research, and hoping that the research would make a difference to the problems being encountered.

3.5 Some Benefits of the Cooperative Inquiry Process

A number of things were achieved since the CI group commenced its activities. Perhaps the first one was to encourage line management to consult the people on the ground first before changing any parameters in the manufacturing process, and indeed when dealing with other challenges encountered at the work place. Members of *Denhe re Ruzivo* kept hammering the importance of relationships in an African setting, even a work related one. Secondly, we had as a CI group revisited the

African ways of interacting at the work place, including the mentoring of younger people instead of just watching them go astray. To this end the company explored the introduction of a peer coaching and mentoring programme. Thirdly, the issue of spirituality at the workplace was tabled, and embraced. Fourth, it is important to give people the opportunity to practice a newly acquired skill or knowledge to help with internalisation. Finally, Management was alerted to the gaps in communication, which gaps they worked towards addressing.

Apart from these issues, the CI group was cognizant of the fact that the target was a much bigger, much more transformative innovation. It also became clear that the issue of relationships was critical in knowledge transfer and creation, and that practice, or doing is what helps people to internalise new knowledge and skills.

4. Propositional and Practical Forms of Knowing

It is important to highlight some of the more critical issues that were raised at *Denhe re Ruzivo* and *Pundutso* pertaining to the way people work and learn. The lessons learnt were many. The employees shared that there were many innovations that went unrecognised, particularly on the machines. It became clear that individuals wanted recognition for the improvements they brought to the machines and in other areas. Such recognition would have the effect of improving and increasing innovations at the workplace.

Leadership gaps were identified, where some leadership styles suppressed creativity and innovation.

4.1 Propositional Knowing

4.1.1 The Merits of *Denhe re Ruzivo*

Denhe re Ruzivo became a very interesting platform for information gathering about what really goes on in the company, and what possible solutions could be put on the table. What was unique about this platform was that it was a mixed group in terms of rank, levels of literacy and area of specialisation. What was highlighted by the group was that, because we were not negotiating for anything, such as the Workers' Committee or Works Council, there was no boxing gloves approach. Individuals were simply sharing their perspectives about what maybe going wrong in the company, and how this may be rectified. Individuals were also free to share the

good things that were happening in the company, and discuss ways of making such fractal.

The fact that there was no rigid agenda and everyone present was encouraged to share something was seen as a recipe for success.

One proposition was that every company needed a *Denhe re Ruzivo* (whatever they chose to call it) to highlight otherwise hidden information and act as a think tank for the organisation. This was a significant instrument in that it brought together all levels of the human capital as equals, ready to listen to one another and ready to share. Everyone was willing to share their vulnerability, and who they really are. The agenda was to share who you are, what your strengths and weaknesses are, what you have contributed to the business (and where you have made errors) and your views on what the team needs to do to make the business better.

One specific proposal was that going forward there should be a deliberate effort to have a balance of old and young in the grouping to ensure that the younger people also shared their ideas and also became responsible for knowledge creation at the workplace.

4.1.2 Nonaka and Takeuchi's Knowledge Creation Spiral

Nonaka and Takeuchi's SECI model highlights the format through which knowledge is transferred from person to person (*Nonaka and Takeuchi, 1995*). This model was explained to and shared with the members of *Denhe re Ruzivo* as well as *Pundutso*.

Nonaka and Takeuchi (1995) define four stages in Knowledge creation, namely socialisation, externalisation, combination and internalisation. During socialisation individuals share experiences, and knowledge transfer begins through observation, imitation, brainstorming and asking questions to seek clarification in order to understand and appreciate further. For socialisation to happen effectively there has to be unity of purpose. One person must be willing to share specific knowledge or skills, and another must be willing to learn. Socialisation therefore can only happen when there is acknowledgement on both parties that there is one person who has knowledge worth learning, and another person worth sharing the knowledge or skill with. This then implies that there should be a deeper understanding and

appreciation of one another as teacher and learner, and there should be high levels of dialogue.

Externalisation as a stage of knowledge and skills transfer was then explained to both *Denhe re Ruzivo* and *Pundutso*. It was highlighted that in this stage, it was necessary to commit to writing what has been taught and what has been understood. It was also highlighted by the members of *Denhe re Ruzivo* that, for those who did not have high levels of literacy, metaphors were a good way to remember the stages in learning the skills. It was generally agreed though that, even where the recipient of such knowledge transfer was not very literate, there needed to be a system in the organisation to record the knowledge for posterity. Dialogue levels in this stage needed to remain high to ensure that what was recorded was in fact accurate. In addition, the use of metaphors was very useful to individual learners. Such metaphors would help to relate the new knowledge to things that are ordinary and general so that individual learners can make sense of them in terms of their life worlds.

At the third stage, combination, it was explained that learners are combining the knowledge that has just been made explicit through socialisation and externalisation and knowledge that people might already have, as well as knowledge that people may find in the process of dealing with the knowledge at hand to personalise it. Other sources of knowledge, such as the internet and other literature may come in useful here in an attempt to make the newly acquired explicit knowledge relevant to the environment and to self. At this stage it is possible to even modify the original knowledge and skills shared and come up with something more appropriate, using one's knowledge and exposure as well as using the contributions of the sharer.

According to Nonaka and Takeuchi, the next stage would be internalisation. The learner therefore internalises the knowledge and makes it tacit, waiting hopefully for someone to socialise this knowledge with so that the process begins again. This is what makes it a spiral because the system allows the process to replicate itself over and over again.

Generally, members of the two CI groups were convinced that this model is very relevant to knowledge transfer as well as the creation of new knowledge, where the existing knowledge was used as an anchor for the new knowledge. However, it was

agreed there was something missing. Discussions were held as to what we would change in Nonaka and Takeuchi's model to improve it and make it more relevant to us. Two critical issues were identified as missing.

a. Relationship Building

Following the vivid discussions that were carried out on the issue of relationship building, *Denhe re Ruzivo* suggested that there could be no way that effective knowledge transfer can effectively happen without relationships. They added that management had a tendency to think in terms of how many people had been exposed to a certain skill without looking deeper to see whether the exposure has been effective or not. They emphasised that the important measure is not the number of employees exposed, but the number of employees who effectively received accurate exposure and information from the transferors of knowledge. This can only happen if the relationships are right.

b. Testing, Practice and Reflection

The one thing that members of *Denhe re Ruzivo* felt had been completely ignored by Nonaka and Takeuchi was the importance of testing new knowledge. They felt so strongly about it that they said any amount of knowledge and skills transfer would not be effective unless individual learners were deliberately given the opportunity to try out the skills in practice, and not only once but many times. In addition, to accept new knowledge as a real phenomenon, such knowledge should be tested and confirmed as real through testing, practice and reflection, giving the creators of such knowledge an opportunity to establish its authenticity before sharing it with others. This, they argued, is what promotes internalisation in transferring old knowledge and establishing new knowledge. By trying out the skill several times, they urged, individuals would have the opportunity to correct themselves until they became proficient, leading to a situation where they may even find better ways of carrying out the skills, leading to the creation of new knowledge. Without this practice, they said, people would remain half-baked with regard to skills acquisition and development. *Denhe re Ruzivo* therefore came up with the proposition of an expanded knowledge creation spiral.

4.1.3 The Calabash of Knowledge (for Knowledge Creation)

First I will dwell on the metaphorical calabash, what it is and why I chose this analogy.

The calabash was among one of the first plants to be cultivated in the world. Although it is edible, it was not cultivated for its culinary qualities but rather for its use as a container, a musical instrument, a bottle or a pipe. In Africa the big calabash is used mostly as a container for water, beer or other non-alcoholic drink such as *maheu* (an opaque drink made out of fermented maize meal). The smaller size is used as a drinking cup, and for sharing drink and water. Medium sizes can be used as food containers. The calabash can also be used as a musical instrument (*hosho*) to bring rhythmic harmony to any situation.

Sometimes the calabash is used as a holding container for beer and other fermented drinks so that such drinks can ferment further. It is the African belief that the calabash has natural qualities to enhance this fermentation and continue the brewing process, aided by the natural air which will have certain organisms that will help the process. In the end the taste of the drink or beer is influenced not only by the calabash, but also by the air surrounding the calabash. The metaphorical calabash is a “container” where knowledge is allowed to ferment and to develop into new and improved knowledge. The model that was developed in this research was centred on the concept of the calabash.

The Calabash of Knowledge Creation is three dimensional, as opposed to the SECI model which appears to be two dimensional. The calabash model therefore has significance in what goes into the calabash and what happens inside there as opposed to what we see on the surface.

It was the proposition of the CI group, *Denhe re Ruzivo*, that the knowledge spiral would work better with two added aspects, namely, Relationships (central to the process) and Testing and Practice to test newly developed knowledge.

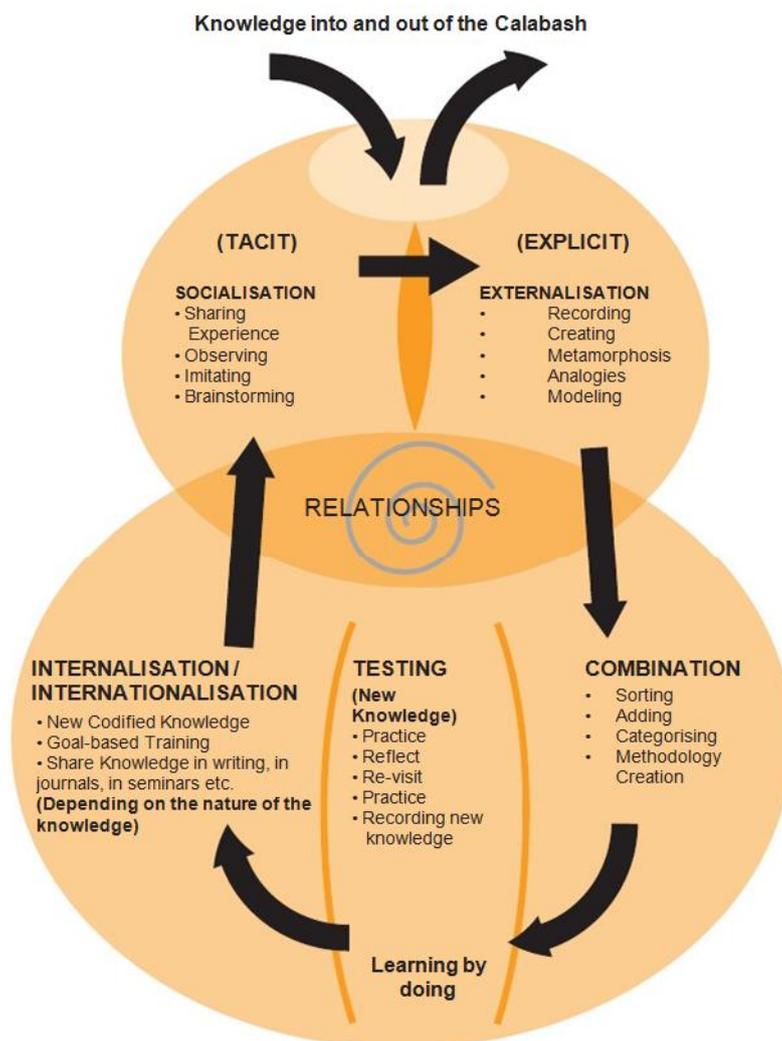
The way it would work is that relationship building would come first to “soften” the bearer of knowledge and make him want to share his knowledge with a specific person, developing a high care situation. In addition to this, relationships play a central role in the transfer of old knowledge and the development of new knowledge. Only after the development of a reasonable relationship would Socialisation bear

maximum fruits. After the building of a relationship, the next three stages (Socialisation, Externalisation and Combination) would follow.

It is apparent organisations have been trying to transfer knowledge in low care situations. Teaching skills to other employees has been a “managerial instruction”, and it has never mattered whether one wants to pass on the knowledge or not – that aspect has never before been put into consideration.

On Testing and Practice, the learners of knowledge have not been challenged to develop new knowledge from the existing knowledge they are taught. This challenge is what will encourage innovation in this knowledge. The Calabash of Knowledge Creation is therefore not only about knowledge transfer, but also about taking it further and developing new knowledge (Mamukwa, Lessem and Schieffer, 2014).

The Calabash of knowledge Creation



The Calabash of Knowledge Creation: *Denhe re Ruzivo* (Mamukwa, Lessem and Schieffer, 2014)

The first phenomenon, and perhaps the most significant from an African perspective, is that relationships remain the core, the central part, of the knowledge creation process. Without relationships such a process may not be sustainable. Strong relationships therefore are relevant before, during and after the knowledge creation process.

The top half of the calabash places emphasis on dialogue. Relationships are created through dialogue. The learner needs to ask a lot of questions and seek clarity, while the transferor of knowledge needs to share some subtle aspects of the knowledge or skill which may not be very obvious. During externalisation, as the knowledge is recorded there is also high-level dialogue as the recorders seek clarity and accuracy. More than this, during externalisation there is shared imagination, turning metaphor into analogy. The process of fermentation in the calabash begins to happen more seriously as the interaction between the “calabash” (the environment), the “beer” (existing knowledge) and the “air” (the environments, from the individual’s background of existing knowledge to the business environment as well as other environmental factors that may come into play). For externalisation to happen effectively, the receiver of knowledge must have his own context of knowledge which he can relate to what he is learning from the transmitter of knowledge. Furthermore, his own imagination must start working to link what he is learning with other things that can enrich the process.

From Externalisation to Combination the learner is now linking the new explicit knowledge with the existing, whether this exists in his own life-world or in other sources. During Combination he also sorts out the methodology for implementing the newly acquired knowledge.

The Testing and Practising stages are critical not only for internalising the newly acquired knowledge, but to challenge it in order to develop new knowledge. The issue is not just to learn from the bearer of knowledge, but to take further what has been learnt and use it as a spring board for new and more enhanced knowledge. The intention therefore, should never be just to learn from the bearers of knowledge, but to develop this knowledge further and come up with new knowledge.

We learn better if we practically apply what we learn, rather than leave it at a theoretical realm. The purpose of practising is also to give the learner practical experience on how to carry out the skill. At this stage she experiments and finds out what works and what does not work. She also has the opportunity to give and receive feedback about her practical experience on the particular knowledge or skill. She must continue to ask questions so that she understands fully why certain things have to be done in a certain way (rationalisation). At this stage she can also come up with modifications to the way the particular process is carried out, giving space to the creation of something new, different from what was observed during the process of Socialisation. Where she has come up with new knowledge, she tests it over and over, reflecting and revisiting to make sure that the new knowledge works. After repeatedly practising this skill or knowledge, she begins to specialise in it – she begins to understand it better than other people, including her original teacher, because the original process is likely to have been modified by this new stage. To a greater or lesser extent, new knowledge has been created, leveraged on the old knowledge learnt during Socialisation.

In Internalisation the learner now becomes the bearer of knowledge. She codifies the new knowledge and may even teach others. She then becomes a target for relationship building by those who may want to learn that new knowledge, skill, or process, and the cycle begins again.

The bottom half of the calabash therefore places emphasis on learning by doing.

The calabash has a very deliberate opening at the top, signifying that the knowledge creation process is not about monopolising knowledge. Knowledge must continue to come into the calabash, and to go out of it. New knowledge will come into the market, which knowledge must be shared in a company or institution. Knowledge must also go out of the calabash, and must be shared with other people outside the organisation. This will give such knowledge credibility, and will promote the creation of new knowledge in the market. Knowledge should never be a closed society issue. Knowledge is constantly changing, therefore the more an enterprise is open to receiving new knowledge and sharing its own the more progressive the enterprise will become. The “opening” also allows the enterprise to throw out archaic knowledge and bring in new, so that it remains current. However, even if the old

knowledge is thrown out, it remains a part of those who owned it, and will continue to influence the creation of new knowledge.

Metaphorically the calabash is a vehicle of rhythm and harmony. In knowledge creation and societal learning therefore, this is brought about by a continuous rhythm in the way knowledge is transferred through the five stages, at a continuous and consistent pace. Every day is a day of knowledge transfer and creation, a day of learning new things and passing on old knowledge to others.

4.2 Practical Knowing

I now get to the final epistemology, Practical knowing. This stage is about putting into practice the model that was developed by the CI group, asking other people to test it and sharing experiences on it. The model was tested at Turnall, at Astra Paints and at ART Cooperation. More excitingly, there have been active calabashes of knowledge in Zimbabwe. Examples are Integral Kumusha through Daud Taranhike, Integral Enterprise through Providence Human Capital, Integral farming, Nhakanomics and more. What is required is to bring cohesion and integration to all these pulses and harness them into one pulse. For this to happen, Pundutso and Trans4M Communiversity Associates (TCA) have embarked on a new project – a Research Academy. Working together, we will now bring cohesion to the research and innovation pulse so that what is created is tested and shared. The sharing part will happen through a Communiversity (another project that will follow the Research Academy one) which will focus on working with learning communities to share the innovations that are created by this research community. Once this happens, innovations will not fade away after creation, but will be actively shared through the Pundutso/TCA Calabash and benefit learning communities. The expectation is that among other innovations, there will be significant social innovation which will be useful for transforming the lives of individuals and communities. This will result in the integration of such innovations, resulting in more active knowledge repositories and communities that are alive to new ideas and knowledge. Most importantly, research to innovation will become less individual and more collective, with the benefit of reaching more learning communities.

5. Conclusion

There is no doubt that the starting of the *Denhe re Ruzivo* CI group at Turnall raised consciousness at different levels. The CI members became comfortable in their own skin. They felt free to discuss any issues that came to the table, cognizant of the fact that there are no right or wrong answers. They listened to one another, and felt motivated and excited at the end of each session because they would have discovered new things about one another, about the company and about the African world view. Useful information became available about what was happening in the company.

Pundutso was useful to *Denhe re Ruzivo* at the time of research on the Calabash of Knowledge Creation, and continues to be useful now in terms of moving the research to innovation story to another level. With time *Pundutso* developed into a Centre for Integral Development, registered as a Trust. At the time of writing this journal, *Pundutso*, together with the Trans4M Communiversity Associates (TCA) is in the process of starting a Research Academy, followed by a Communiversity. This confirms then, that relationships can go a long way, and can lead to bigger things. The *Calabash of Knowledge Creation* that was created five years ago has come alive again in the form of the Research Academy which has the potential to become a very big Calabash.

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