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Title: Capacity Building for School Improvement: Knowledge Production and Utilization

Abstract

Education reform, focused on promoting student learning, depends on the capacity of schools to improve. Building capacity for school improvement is critical. This paper explores capacity building in one low decile[1], multicultural New Zealand primary school from the perspective of teacher (individual and collective) and systemic knowledge production and utilization. The research utilizes a case study and grounded theory approach to explore knowledge production and utilization that is situated, connected, involves leadership and management and is outcomes based. Knowledge production and utilization is time and context dependent and is unique to setting. It occurs in response to individual and systemic need. It is a critical factor in capacity building defined as maintaining equilibrium while generating movement in the direction of improvement.

The paper explores key attributes of knowledge production and utilization within a framework of: school vision that secures a sense of direction and purpose; school culture which provides a suitable platform for enacting performance; professional development which facilitates individual, collective and systemic learning; and school stakeholder activity that promotes knowledge acquisition, distribution, adaptation and usage systems and processes. The individual, collective and systemic dimensions of knowledge production and utilization serve a predictive purpose. Predictive purpose is defined as the ability to determine future pathways for improvement based on evidential data processed, analysed and modified to site specification. Knowledge production and utilization holds considerable promise for school improvement and, as such, requires deeper investigation.

[1] Every state school in New Zealand is allocated a decile (10 percent grouping) by which to target funding based on the degree of socio-economic disadvantage the community from which the students are drawn. "Low decile school (1-3) draw from communities with the highest degree of socio-economic disadvantage. A school's decile ranking is calculated using six dimensions: equivalent household income; parental occupation; household crowding; parent's educational qualifications; income support payments received by parents; and the proportion of students of Maori or Pacific ethnicity" (Ministry of Education (MOE) 1999a, p. 8).

Introduction

In this article, the author draws on her research study on capacity building for school improvement in one low decile, multicultural New Zealand primary school to explore the concept of knowledge production and utilization. Knowledge production and utilization; division of labor: roles and responsibilities; and development of a 'switching-on' culture are three practices that underpin capacity building for school improvement. For the purposes of this article, 'knowledge production and utilization' is the focus. Input of professional information, albeit externally and internally sourced, and its usage in improvement (individual, collective and systemic) underpins the concept of knowledge production and utilization. External input is generally associated with course attendance or outside agency / Ministry of Education professional development contracts. Internal input connects with collecting and analyzing evidence of stakeholder and systemic need gained from school reviews and staff appraisals.

Knowledge production and utilization is advanced as being unique to setting; a product of connectedness, leadership and management in outcomes based achievement. Attributes that promote it are school vision, school culture, professional development and school stakeholder activity.

Expanding the Parameters of Thought

A central concern for schools in pursuit of reform is their capacity to improve. Yet, in this regard, a paucity of research exists (Hadfield, Chapman, Curryer and Barrett, 2004). Contemporary literature appears profuse in areas of descriptive studies focused on emphasizing particular school improvement programs and projects (Harris, 2003), the dominant characteristics of which are: school-based professional development focused on promoting student learning (Fullan & Mascall, 2000; Alton-Lee, 2003); mandated policies, targeted outcomes and tightened lines of accountabilities (Leithwood, 2001; Dalin, 2005); leadership models for example: moral (Sergiovanni, 2006), visionary (Sammons, Thomas & Mortimer, 1997), managerial (Slee, Weiner & Tomlinson, 1998), leading professional (Pollard, Broadfoot, Croll, Osborn & Abott, 1994), and transformational (Leithwood & Jantzi, 1999); the importance of vision (Barth, 1990; Fullan, 1993); and school culture (Stoll, 1999).

Raising student achievement remains the focus of much government policy. In New Zealand, legislation, for example New Zealand Ministry of Education *Professional Standards: Criteria For Quality* (1999b), emphasize a national reform agenda which, at the school level, accounts for compliance systems, structures and procedures such as teacher appraisals, curriculum reviews and internal and external school audits. Compliance / accountability tools are credited with promoting teacher change and systemic reform, the product of which is said to improve outcomes for students.

While aforementioned literature and policies draw to the surface important ideas connected with improving schools, they fail to explain sufficiently practices that underpin capacity building for improvement. Findings from this research suggest that vision, school culture, leadership in the form of stakeholder activity and professional development are attributes that underpin capacity building practices such as knowledge production and utilization.

Methodological Issues: The Research Design

The research employed a case study design that was both instrumental (Stake, 1994) and explanatory (Yin, 2003). The inquiry focused on achieving depth of understanding in a single case purposefully selected. As Patton (1990) explains, 'The logic and power of purposeful sampling lies in selecting *information-rich cases* for study...those from which one can learn a great deal about issues of central importance to the purposes of the research' (p. 169 italics in the original).

The school selected was a state primary school located in Auckland, New Zealand. It was a contributing (Year 1-6) school with a decile two ranking. At the time of data collection, the roll was approximately 330 with just over 20 teachers. Its ethnic composition included: New Zealand European, 16%; Samoan, 14%; Tongan, 11%; Indian, 11%; Maori, 10%; Ethiopian, 6%; Somalian, 5%; Niuean, 4%; Cook Island, 4% and "other", 19% (Education Review Office (ERO) report, 2005). The low socio-economic background of many students combined with an influx of refugee migrant families presented this school with challenges in, for example, curriculum delivery and responding to diversity.

Over a two year period, the school received much acknowledgement for its capacity to improve. The ERO (2005) report claimed students expressed pride in their school, met high expectations set for them, benefited from a wide range of learning and cultural experiences, engaged in positive student-staff relationships and took advantage of opportunities to participate in school-wide decision making. Further, a professional learning culture existed. Such factors made the school an information rich case within which to conduct this research.

Fieldwork and Data Collection

The fieldwork phase of data collection extended over a twelve month period and generally included interviews, observations at staff and team meetings and document analysis. In addition, on-going journal entries and photographs recorded participants' stories, experiences and descriptive accounts of actions and conditions connected with practice. Journal entries enhanced interpretation of data commensurate with early analysis and gradual emergence of theory.

Use of grounded theory methods meant field work could not be confirmed in advance. Design flexibility related to the open-ended nature of this inquiry and a pursuit of understanding complexity. Patton (1990) endorses this as doing what

makes sense and reporting, 'fully on what was done, why it was done, and what the implications are for findings' (p. 62). Data collection focused on:

- Processes, systems and structures that built capacity; an examination of practice;
- Frequency, type and nature of outside agency input;
- Parent involvement in line with inquiry aims;
- Professional development and processes for knowledge production and utilization. This included knowledge management with the potential to change practice;
- Description, purpose, quality and nature of stakeholder interaction around practice; and
- Group norms that underpinned and defined 'work' in this school.

Interviews

Interviews conducted included individual in-depth interviews, informal interviews by way of conversations and group interviews. Individual interviews initiated thought and appropriated an overall sense of direction. School participants interviewed were: three senior managers (principal, deputy principal and assistant principal); three senior teachers with syndicate responsibilities; eight classroom teachers; two specialist teachers; four teacher aides; and two support staff. Participant selection resulted from employing purposive sampling techniques (Patton, 1990). Participants invited to participate had been involved in initiating school improvement over a three year period, had experienced school change and represented different levels of school organization (junior, middle and senior) with various roles and responsibilities. Four parents, two board members and four representatives from outside agencies were also interviewed. Participant selection here was also purposefully determined in line with inquiry aims.

Unscheduled interviews assumed the form of informal conversations or chats, valued for their ability to clarify points and connect with incidents that occurred during the day. Informal conversations provided valuable feedback on unfolding situational events (Patton, 1990). This increased the salience and relevance of events observed. The spontaneity and flexibility with which these interviews occurred provided a means to follow up on leads.

Two group interviews were held with the senior management team and bilingual support workers. Senior managers were asked to consider the journey the school had taken towards improvement over a three year period. The bilingual group were asked to discuss practices that accommodated cultural differences and supported programmatic change.

Observations

In this inquiry, observations heightened sensitivity towards patterns of behaviour. Participant and non-participant observations were employed but on

different occasions and for different purposes. Participant observations were conducted at home-school events such as the Fun Fiesta night and provided opportunities to observe collective activity that generates capacity. Non-participant observations at negotiated school, team and literacy professional development meetings evidenced interconnections among individuals and groups, teacher talk, negotiation, decision making processes and systemic and structural change that advanced the acquisition and dissemination of knowledge to reach all levels of the school. Non-participant observations at board of trustees, cultural groups, home-school partnership and 'parent chat' meetings provided opportunities to witness community contributions to the knowledge production and utilization process.

Document Analysis

Systematic analysis of documents such as curriculum reviews, strategic plans, charters, ERO reviews, policy manuals and school newsletters provided:

- An impression of patterns and key features of practice;
- Evidence of conditional pathways of influence from critical events / incidents to practice; and
- Corroborated 'other' evidence related to capacity building.

Grounded Theory Methods for Data Analysis – A Personal Choice

Use of grounded theory methods suited this inquiry as capacity building for school improvement has little or no prior investigation and applicable conceptual frameworks are unavailable within which to investigate the phenomenon (Strauss & Corbin, 1998). Glaser and Strauss' (1967) stance on theory building, that is, 'construction' of theory through discovery, was considered particularly apt.

Grounded theory methods, noted for their rigor, provided a systematic way of constructing a substantive theory. Here, microanalysis or line by line examination of data proved advantageous in developing open and axial codes (Strauss & Corbin, 1998). Microanalysis encouraged close listening to participants' voices to understand how certain events were interpreted. It allowed *in vivo* codes to surface and guide the naming of categories. It generated 'Who?', 'What?', 'Where?', 'When?', 'Why?' and 'How?' questions of properties, dimensions and conditions, giving emerging categories and sub-categories greater explanatory power (Strauss & Corbin, 1998).

Initial open coding of raw data produced copious quantities of codes. Continual verification and subsequent modification, saturation and placement of each code in relationship to other codes had the desired effect of slowing the process down. Coded elements were organized into categories together with their sub-categories. Here, memo writing proved useful as a way of guiding, tracking and, as Strauss (1987) notes, '(moving) the analyst further from the data into a more analytic realm' (p.32). Memos highlighted ideas, hunches and new insights. Category names were derived from the literature, taken directly from the substantive field by

way of *in vivo* codes and sourced from the researcher's professional and theoretical knowledge and experience.

Following open coding of the data, rearrangement into axial codes added greater conceptual depth to the analysis. Questions such as: 'Who?', 'What?', 'Where?', 'When?', 'Why?', 'How?' and 'With what consequences?' invoked responses that further illuminated relationships. An interview-observation data schedule that represented categories and sub-categories across all data sets was developed.

Open and axial coding preceded selective coding. Here the core and causal categories of capacity building were clarified on the basis of:

- Centrality and frequency of mention;
- Natural connection to other categories;
- Accommodation of properties that varied; and
- Descriptions of participants' main concern (Glaser, 1978).

In addition to the above, Strauss and Corbin's (1990) paradigm model helped sharpen explanations of processes, relationships and the influence of context on practice.

Data Analysis

The researcher began with the initial analysis of interview transcripts followed by analysis of observational and documentation data. Every unit of data was coded and grouped into tentative categories and subcategories using the following process. The first interview transcript was read to ascertain data that appeared significant. A second reading of the same transcript prompted the underlining of key phrases, words or sentences that had deliberate bearing on the concept. Continuous questioning in the form of, 'What is this?', 'What does this mean?' initiated more thoughts and ideas. Summary notes, made in the margin of the transcript, formed preliminary codes. Keeping in mind these codes had emerged from the first transcript, the process was applied to other interview transcripts to determine similarities and differences. First level data analysis produced open codes that established tentative categories and properties. Recorded lists of codes were placed on initial master lists. A coding journal was initiated by way of an audit trail. This was deemed necessary as changes to original lists on the basis of similarities or differences necessitated tracking. Data from observations and documents were subjected to similar processes of analysis.

Once all the data was coded, a second layer of analysis was conducted. In order to determine relationships, axial codes were developed and tentative propositions about practice emerged. The paradigm model, in conjunction with open and axial coding of data, enhanced the search for patterns and groupings that defined practice. What followed involved further sorting and deciding on which categories and subcategories were established and which required moving and reconstructing as new perceptions, insights and understandings emerged. Selective coding secured the core and causal properties of practices associated with capacity building for improvement.

Validity and reliability of the data

To ensure the findings met internal validity, external validity and reliability requirements, two sets of criteria were proposed: The trustworthiness criteria of credibility, transferability, dependability and confirmability (Guba & Lincoln, 1994, in Denzin & Lincoln, 1994) and the authenticity criteria of fairness, namely, 'ontological authenticity (enlarges personal constructions), educative authenticity (leads to improved understanding of constructions of others), catalytic authenticity (stimulates action), and tactical authenticity (empowers action)' (Guba & Lincoln, 1994, in Denzin & Lincoln, 1994, p. 114).

Trustworthiness and authenticity were addressed by rigorous application of grounded theory methods in data collection, analysis and interpretation as per the constant comparative method (Charmaz, 2003). A traditional take on 'triangulation' was also employed to ensure trustworthiness of data. Three forms of triangulation were employed: methodological triangulation with a focus on consistency of findings using different data-collection methods; data source triangulation where consistency of findings related to data gained from different sources but with the use of the same data collection tool; and analyst triangulation where participants verified early interpretations of the findings. Utilization of grounded methods meant the data analysis itself was less prone to accusations of unreliability. The rigorous method of coding facilitated tracking of information to original text albeit interview transcripts, observational entries and / or document analysis. Lincoln and Guba (2003) confirm this as maintaining an audit trial.

Findings: Knowledge Production and Utilization Links

Research findings are presented in this section. First, links between key capacity building attributes and the construction of knowledge production and utilization are discussed. As signaled earlier, these attributes include vision, school culture, professional development, and stakeholder activity. Second, characteristics of knowledge production and utilization are presented.

Knowledge Production and Utilization: Links with School Vision

At the core of all capacity building for school improvement activity is vision. In this school, the vision is best captured as 'striving to be the best in promoting student learning'. Four tenets underpin it. These are: student centered learning, improvement mindset, empowerment and community. The vision acts as a 'blue print' or 'map' guiding all activities. The work of school stakeholders, school documents and systems, processes and procedures prioritize student outcomes, sustainment of improvement trajectories, empowerment of stakeholders and community involvement in education.

Knowledge Production and Utilization: Links with Stakeholder Activity

Capacity building for school improvement is concerned with change and management of change. All change disestablishes equilibrium and increases uncertainty as new ways of doing things are required. Here, the concept of school stakeholders as change agents becomes important. Data from this study suggest that change management is achieved through all school stakeholders working as change agents. Their stance is explained as appreciating what someone else has to offer and working in ways that meet individual, collective and systemic need.

In this site, stakeholders are not prepared to adopt a reactive stance to external / internal challenges of change. Their actions and mindset suggest they scan the environment for signs of change and consider ways to make systemic adjustment and modifications in line with vision. Responses are not knee-jerk reactions but strategically implemented through producing and utilizing knowledge in the development of systems, structures and processes which meets challenges and addresses need.

Knowledge Production and Utilization: Links with School Culture

Deal and Kennedy (1982) define culture as 'the way we do things around here'. Beare, Caldwell and Millikan (1989) refer to culture as verbal, behavioral and visual manifestations enacted in practice. Schein (1985) defines the concept as, 'basic assumptions and beliefs that are shared by members of an organization, that operate unconsciously, and that define in a basic 'taken-for-granted' fashion an organization's view of itself and its environment' (p. 6).

In this school, cultural hallmarks that emerge from actions, behaviours and expectations of stakeholders embody a learning culture, an inclusive culture, collaboration, commitment, community and a safe place for learning. They connect and bind people together in processes that enhance knowledge production and utilization.

All stakeholders in this school connect with and value learning. Valuing learning means engineering time and place for collective dialogue or learning talk to occur. Valuing learning and stakeholder involvement in the process generates a professional learning community ethos which promotes and sustains the learning of all stakeholders. The importance of a professional learning community is stressed as facilitating school improvement (see for example, Stoll, Bolman, McMahon, Wallace, & Thomas, 2006).

The value of collaborative cultures in facilitating school improvement is endorsed by many authors (see for example, Hargreaves, 1994). In this school, a culture of collaboration fosters team work and community spirit. The principal, senior managers, teaching and non-teaching staff and parents / caregivers are described as team players. Their participatory actions endorse togetherness in goal achievement. School systems, processes and structures support collaboration in,

for example, creating opportunities for collective dialogue and participatory decision-making. In the spirit of collaboration, knowledge is produced and utilized through mutual dependence and professional interdependencies. The culture of collaboration is improvement oriented. It creates a learning ethos which contributes towards building capacity.

In this school, individuals espouse and enact commitment to the collective. Commitment builds trust in people to act professionally as individuals and within a collective. Group ways of working account for distributed practice (Gronn, 2002), mutual trust (Codd, 2005), empowerment and networks of support (Muijs & Harris, 2003) that create a safe environment for learning.

Participants' responses and observations of practice negate the presence of subcultures that denote fragmented individualism, contrived collegiality and balkanization (Hargreaves, (1994). In this site, expression of voice and opinion is encouraged. Here, thinking through issues as a collective promotes joint 'ways of doing things'. The culture of this school fits Hargreaves' (1995) moving school description where optimal social cohesion and control and high expectations with in-built layers of support advance learning and improvement.

Knowledge Production and Utilization: Links with Professional Development

Literature suggests professional development raises teacher professionalism (MOE, 1999a) and initiates school improvement (see for example, Barth, 1990; Fullan & Mascall, 2000; Alton-Lee, 2003). Findings from this study confirm the above. In addition, they suggest that learning is a result of collaboration that encourages teachers to work and talk to one another on issues of improving practice. Collaborative professional development is linked with social processing of knowledge to enhance learning. Professional development strategies that incite social processing of knowledge include: collaborative interchange of information, reflection on practice, openness to new ideas and ways of managing professional development to ensure relevancy, flexibility and scaffolded learning. Professional development, focused on tangible outcomes as stated in reviews and strategic plans, facilitates learning that meets individual, collective and systemic need.

Professional development on offer is best described as a situated, layered approach to learning with connections at the individual, collective and system level of practice. The preferred way of working in this school is in teams. For this to happen, new ideas introduced at a collective level are developed in teams and amongst individuals to create meaning and purpose. The learning that eventuates is specific to context. Situated, layered learning is a product of shared responsibility that creates connectedness and conversations around teaching and learning. Knowledge generation and the learning that results enhances systemic coherence, consistency of practice and a learning enriched environment which, Rosenholtz (1989) claims, motivates for learning as daily activity.

Characteristics of Knowledge Production and Utilization

There are several characteristics of the knowledge production and utilization practice that adds profoundly to generating capacity for school improvement. In this section, vignettes accompany explanations of each characteristic in hope that this permits a more authentic view of practice.

The first characteristic relates to collaborative interchange of information. Observations at staff, team and curriculum meetings confirm that staff collaboration in the exchange of information is embedded in the school's culture and forms part of daily activity. Collaborative interchange of information expands on mere compliance or development of collegial relationships and facilitates, instead, the asking of 'hard' questions of existing practice – what is beneficial and, likewise, of impediment in the learning / goal achievement process. Collective working through issues encourages reflection on current practice in an effort to build individual, collective and systemic learning capacities. It is the social processing of knowledge among staff that facilitates learning and refinement of systems, processes and structures in support of improvement. The following vignette illustrates collaborative interchange of information in the context of constructing an integrated teaching unit.

> The session was facilitated by the deputy principal who invited staff to contribute resources and ideas towards planning the unit. Knowledge sharing is one way of avoiding information hoarding that can occur among teams. Creation of a combined knowledge pool was followed by guidance on how to plan an integrated unit. Opportunities for teachers to utilise available information in the generation of year level plans were provided. During this activity, groups were engaged in deconstructing curriculum documents, reinforcing planning requirements as stipulated in school policy and locating and distributing information on the topic. Group activity lasted an hour followed by feedback on learning outcomes, experiences and methods of assessment.

This vignette highlights the importance of collaborative interchange of information that goes further than task accomplishment. Talking through issues of teaching and learning reinforces and extends existing knowledge bases within collective, non-threatening, supportive and meaningful group structures. Informal conversations facilitated individual and collective advancement of knowledge, school-wide systemic cohesiveness and consistency of practice. Feedback established common understandings of learning outcomes, experiences and assessment across age levels. It cemented in teachers' minds what to expect from students in terms of abilities and skills at various ages and stages of development. Collaborative interchange of information necessitated:

- Shared involvement in task accomplishment. Here, information gained through engagement in process was meaningful to teachers in addressing ongoing needs of students and promoting best practice. The process, shared among staff, produced individual and collective knowledge;

- Opportunities to modify and adapt the curriculum and system in line with the needs of students;
- Opportunities for talk and inquiry into practice. This promoted a learning culture; and
- Shared construction of systems, processes and procedures which promoted a team spirit.

A second characteristic of knowledge production and utilization is reflective practice. Reflective practice links to the school's vision. It addresses the four vision tenets of student centered learning, improvement, empowerment and a learning community. Here, critical attention of assessment / evaluation data identifies and addresses need. Reflective practice can be individual, in the form of teacher appraisals or peer reviews, or collective, where teaching staff consider and evaluate their practice as a group. Reflection always involves data analysis to improve practice and outcomes. Reflective practice has the potential to stimulate new ways of doing things because it is accompanied by a search for answers to 'Why?' and 'With what effect?' questions. Reflection creates positive interdependencies among group members, familiarization with school systems, processes and structures, production of high quality evidential data, a buy-in to learning and social norms of collaboration and belief in self to produce and utilize knowledge. In this setting, reflection on practice advances:

- Rigorous analysis of data to promote identification and assessment of school / stakeholder need;
- Empowerment of staff in the knowledge production and utilization process;
- Continuous professional input and 'openness to new ideas' for individual and collective learning;
- Problem solving within self-governing / self-managing frameworks; and
- Development of creative and flexible systems, processes and structures in response to need.

The vignette chosen to highlight elements of reflective practice is one where teachers were encouraged to reflect on current literacy strategies aimed at increasing ESOL[2] students' oral language capabilities. Two staff members with literacy expertise facilitated the session.

> The first facilitator asked: '*Are we doing the best for our ESOL children? Is the child hearing what you are saying? How do you know? How do we support our ESOL children in their vocabulary development?*' She initiated discussion by providing ESOL literacy test results. Teachers were guided in their examination of students' oral language scripts. Group feedback engendered debate: '*they (students) don't have much vocabulary; all these 'negatives' – this is a worry; but a 'no would be because they were reluctant to talk*'. The facilitator guided discussion to, '*so what does this all mean for teaching?*' Ideas discussed indicated consideration of alternative instruction to enhance oral language development.

[2] ESOL – English Speakers of Other Languages

> The second facilitator shared information on 'three level guides', a strategy with potential to assist students' processing of information to higher levels. This part of the session commenced with ascertaining teachers' prior knowledge on strategy use. The message continually reinforced was, '*You are trying to push for deeper levels of thinking*'.

Reflection on practice occurs in response to improving it. Individual reflection appears a necessary part of group reflection and a social responsibility. Individual teacher appraisals enhance reflective practice. The benefits noted were: enhanced learning; appreciation for work undertaken; building self efficacy; and reinforcement of vision. In addition, peer reviews undertaken mean *'staff 'buddy up' and professionally develop and support each other'*.

Processes of reflective practice, albeit individual, collective and / or systemic, are documented and documents form the basis for further reviews, modification of practice, systemic change, vision enhancement and individual and collective learning.

Third, knowledge production and utilization is a product of stakeholder networking. Networking implies association or connection with others in the knowledge production and utilization process. Internally facilitated staff networks generate situated knowledge. New knowledge brought into the school by outside course attendance, tapping into outside agency support and buy-in to Ministry of Education contracts expands the existing pool of site-based knowledge. Externally sourced information, shared with others, engenders new insights on practice.

In this setting, individual networks are combined to create collective networks with potential to increase individual, collective and systemic knowledge. Sharing ideas in collegial ways develops awareness of one's own ability to influence the learning of others. Everyone is considered a leader in the knowledge production and utilization process. The next vignette captures this. Here a teacher with technology curriculum responsibility ran a staff meeting on information gained at a course.

> The staff member handed out technology exemplars and invited teachers to examine the material in pairs. She handed out a matrix with identified technology characteristics. An explanation of each was provided and teachers asked to consider student progression across the levels. Teachers were encouraged to use the matrix to note year level learning outcomes. By way of feedback, comments received focused on ways to improve practice. The teacher pushed for systemic change by asking, '*Where do you think we should go next and what should be our next learning target?*'

From this vignette, the following emerge as important: synthesis of old and new knowledge to achieve fresh levels of understanding; strategy use associated with future goal setting and pedagogical improvement and the need for systemic support to create and support change. Social norms of collaboration and a team ethos meant all can tap into a collective body of information. This promotes an expansive knowledge base which advances individual, collective and systemic knowledge capacities.

Fourth, knowledge production and utilization is focused on systemic development. This extends beyond consideration of individual and collective learning to renewal of systems, processes and structures in light of changing conditions. One way of achieving this is through on-going curriculum and school reviews as captured in Figure 1.

Reviews identify strengths and weaknesses of programs and practices linked to student and school improvement. In addition they develop an authentic base for decision-making which promotes:

- Reflection that is individual, collective and future orientated;
- Increased knowledge on school practices, curriculum, pedagogy and stakeholder / system needs;
- Growth and development of a learning culture;
- Opportunities to adapt and modify practice in response to changing conditions;
- Knowledge production and utilization in pursuit of vision ideals; and
- System coherence and consistency of practice.

Conclusion: Knowledge Production and Utilization and Links to Capacity Building for School Improvement

Improving the school system inclusive of teacher pedagogical practice and content knowledge is related to promoting student learning. Such links reinforce an improvement mind set, empowerment and a learning community ethos. Collaborative interchange of information, reflection, networking and systemic development denote the social processing of information to create individual, collective and systemic knowledge. Such processes establish group learning norms that sustain and reinforce continuous cycles of knowledge production and utilization. Self-perpetuating, ongoing processes of knowledge production and utilization facilitates capacity building for school improvement.

Practices of knowledge production and utilization enhance connectedness amongst stakeholders in learning. They create a professional learning culture. Here, everyone is considered a learner, a leader, a catalyst for change and a change agent. In this school, opportunities for professional development promote lifelong learning mindsets. Mutual respect and trust facilitate the raising of doubt and the asking of ‘hard questions’ to alter habits and beliefs in the betterment of teaching and learning. Collective dialogue and reflection generates knowledge at individual, collective and systemic levels of practice. Monitoring of practice (systemic and individual) ensures learning has the potential to reach all levels of school practice to benefit students. Knowledge production and utilization strategies mean attention is always focused on ‘striving to be the best in promoting student learning’.

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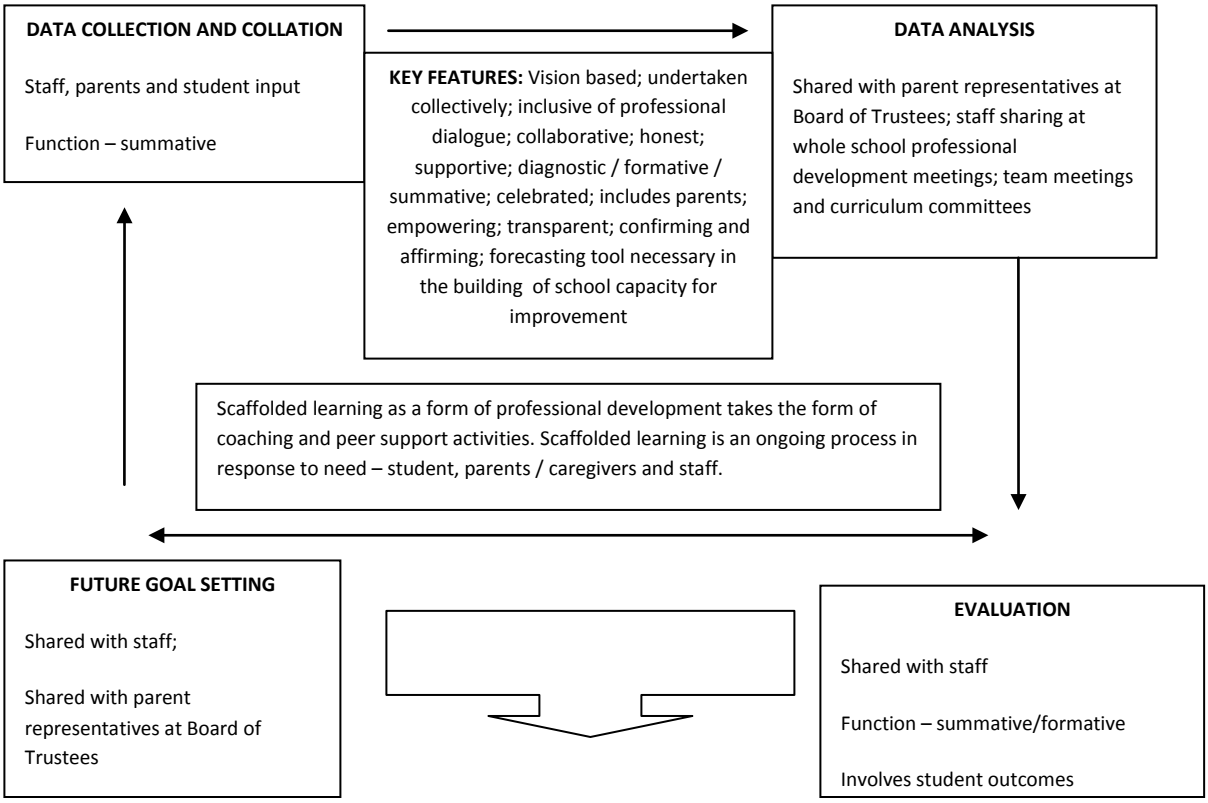
Figure 1: *Reading Review*



BENEFITS: CAPACITY BUILDING FOR SCHOOL IMPROVEMENT

Improved outcomes for students, staff and community through system improvement

Practice change (administrative level) – Realignment of finance to meet stakeholder and school needs. Policy, systems, process and structure change. School culture of learning reinforced.

Practice change (classroom level) – new ways of doing things / use of new strategies to enhance the delivery of teaching and learning in literacy

Accountability measures to the Ministry of Education, Board, community, students and staff.

Community involvement: (formal) – home / school partnerships, parent chat sessions and staff feedback; (informal) – incidental involvement in school life.