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Knowledge States of Pupil Learning at a High Performance Rural Primary School

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Abstract

Socio-economic status, parent education and infra-structures are some of the factors that are believed to influence pupil learning in rural primary schools. However, some rural primary schools are actually high performance schools, which imply that it may be necessary to consider pupil learning from a different perspective. This paper considers the phenomenon of pupil learning at the school-level on the basis of the school as an entity that learns and in terms of the states of the knowledge of the entity. The objective of this study is to identify the states of knowledge or knowledge states of pupil learning at a high performance rural primary school in Sarawak. Observations, interviews, documents, artifacts and discourses were used to generate data, and data analysis involved interpreting the meaning of the data. The respondents of this study included pupils, parents, teachers, support staff, head teacher and members of the PTA and local community. The findings uncovered thirteen knowledge states of pupil learning, which are Basic Profile, Infrastructure, Transportation, Structures-Finance Support, Events, Academic Curriculum, Programs, Language, People or Learning Resources, Practices, Values, Awareness and Dispositions or Beliefs. The knowledge states are concerned with creating time, giving attention, designing suitable structures, constructing events for learning, and construction of high-order conceptual structures that facilitate pupil learning. The findings of this study may be considered for other learning situations or

community development, and that further research should consider pupil learning at other rural primary schools or communities.

Introduction

This paper considers the phenomenon of pupil learning at a high performance rural primary school in Sarawak from the perspective of a learning entity. Although the school is a rural primary school with various limitations, its academic and co-curriculum achievements have improved greatly and as such, the school is recognized as a high performance rural primary school (Aziah & Abdul Ghani, 2012). This also implies that the school may be considered to have learned.

Background

Research show that socio-economic status, parent education and pupil family background affect pupil learning (Aziah & Abdul Ghani, 2012; Cortez-Rucker, Adams & Cortez-Rucker, 2013; Poolman, Leseman, Doornenbal & Minnaert, 2017). Poor infrastructures are considered to limit learning because classrooms, electricity, water, roads, transportation, and telecommunication are enablers of learning (Laszlo, 2013). Strong instructional leadership (Cortez-Rucker et al., 2013; Pijanowski & Peer, 2016) and positive home-school relationship (Casto, 2016; Mwanik & Orodho, 2016) are important aspects of an effective school. According to Teddlie and Reynolds (2000), schools add value to learner development despite the strong influence of family background. Parental participation, such as frequently monitoring pupil progress, reading to children, checking homework, and asking after their assignments, can have positive impacts in the teaching and learning processes in the classroom (Koross, Ngware & Sang, 2009). Clear instructional focus, frequently monitor teaching and learning, and teaching that meets learner needs are important for pupil success (Cortez-Rucker et al., 2013). Hence, there is need to focus on attendance, retention, attainment and workforce capacity (Laszlo, 2013). The main concerns for rural schools are teacher retention, long travel times for pupils, transportation problems, and restricted program options for pupils (Azano & Stewart, 2016; Mwanik & Orodho, 2016;). Pupil attendance in learning, exposure and participation in sport and cultural activities, safety, teaching and learning relationships, and positive environmental-structural elements can have positive impacts on a healthy life-style, learners and the learning process (Queensland Department of Education & Training, 2011). Clear school mission, high standards and expectations, and measurement of achievement are required for motivating and focusing attention towards learning (Cortez-Rucker et al., 2013). Reading and numeracy, availability of daycare, and the quality of early childhood education is important for future learning (NSW Department of Education & Communities, 2013; Poolman, Leseman, Doornenbal & Minnaert, 2017), and digital literacy, which include technological literacy, ICT literacy and information literacy (Voogt, Dede & Erstad, 2011), is central to a learning community in the context of globalization.

Generally, rural schools have poor infra-structures and parents are not highly educated. However, some rural primary schools are high performance schools, which imply that pupil learning in rural primary schools should not be understood directly in terms of socio-economic status, infra-structures, parent education or so forth. Pupil learning need to be considered from a different perspective and understood in a different manner.

Approach of this Study

The two main views of learning are constructivism and memory. Constructivism may be considered from the psychological or socio-cultural perspectives, where knowledge is constructed by a person or in interaction with other people or equipment (Gee, 2011). The memory perspective of learning relates to the multi-modal model of memory and may be considered in terms of knowledge storage and knowledge processing (Atkinson & Shiffrin, 1968). Furthermore, the idea of memory has been extended to organizations (Resnick & Spillane, 2006; Senge, 2006).

The approach of this study is to consider pupil learning at a high performance rural primary school on the basis of a school as an entity that learns, that is, the idea of learning is extended to the organization. Hence, the high performance rural primary school is considered in metaphor to a human learner. A human learner has knowledge, and so too, the high performance rural primary school. In Redding, Cannon and Seamster (1992) and Seamster, Redding, Cannon, Ryder and Purcell (1993), the knowledge used by a human learner to carry out task in air traffic control was represented in terms of knowledge states, where a knowledge state is a category of knowledge. Likewise, the knowledge that relates to pupil learning at the high performance rural primary school may be categorized into knowledge states.

Objective

The objective of this paper is to identify the knowledge states that relate to pupil learning at a high performance rural primary school in Sarawak on the basis of the school as a learning entity.

Methodology

This is a case study to identify the knowledge states of pupil learning at a high performance rural primary school in Sarawak. Various knowledge, which are categorized into knowledge states, are needed for the rural primary school to transform itself from a mediocre rural primary school into a high performance rural primary school. In the case of an organization, such as the rural primary school, the knowledge states of pupil learning were identified on the basis of the various information that relate to the school since its establishment, and in particular, the situations and processes as the school transformed itself into a high performance school. Data collection involved getting accessed and having close interactions with the school and local communities.

The researchers' experience and background enabled them to have access and close interactions with the respondents of this study. The respondents include the head teacher, assistant head teachers, all teachers, all support staff, a large group of parents, senior committee members of the parent-teacher association, and almost all of the pupils. The researchers made four visits with a total of 20 days staying at the school for data collection.

The methods of data collection include (a) observations, (b) discourses and discussions, (c) interviews, (d) taking photographs and videos, and (d) getting access to documents or artifacts. Observations generated data concerning situations and processes at the school. Further probing of the situations or processes that are still occurring or have occurred was done through discourses, discussions or interviews, and data generated from these methods were audio recorded or taken as field notes.

Photographs and videos were also taken as evidences of the situations or processes. Additional data were gathered from documents and artifacts kept at the school.

Analysis and Validity of the Data

Data were analyzed on the basis of the interpretation of meaning, and similar or related meanings were categorized under the same category or knowledge state. The validity and reliability of the data were addressed based on trustworthiness (Guba & Lincoln, 1989), that is, through credibility, transferability, dependability and confirmability. There was prolonged and extensive observation of data, persistent engagement with data, triangulation of data, thick descriptions, and data were made available for auditing.

Findings: Knowledge States of Pupil Learning

The findings of this study, which answered the research objective, are summarized in Table 1 below. Thirteen knowledge states of pupil learning at the high performance rural primary were identified and their implications to learning are given. Each knowledge state is then described in more detailed below.

Table 1: Knowledge States and Implication to Learning

No.	Knowledge State	Implication to Learning
1.	Basic Profile	A strategic focus may be used as leverage for learning
2.	Infrastructure	Supports learning
3.	Transportation	Reflects accessibility
4.	Structures-Finance	Supports learning
5.	Event	Provides opportunities for learning; schema of learning
6.	Academic Curriculum	Plan and manage curriculum according to pupil needs
7.	Program	Means to solve problems associated with learning
8.	Language	Relates to representations for learning
9.	People	Initiate learning
10.	Practice	Creates learning culture
11.	Values	Develops self-confidence in learning
12.	Awareness	Thinking reflection about learning
13.	Disposition	Belief towards learning develops

Basic Profile

Basic Profile refers to the school location, size, history, category, local community it serves and the school-home distance. A strategic focus was the two Iban longhouses that were built close to the school and the community's support as leverage for pupil learning.

Infrastructure

Infrastructure relates to electricity supply, water supply, telecommunication-internet facility and road access. It is important to note that excellent pupil academic achievement was first achieved when infrastructures were poor and limited. Hence, poor and limited infrastructures did not imply that pupils would not be able to excel in their studies because attention towards learning came through other means.

Transportation

Prior to 2014, the only mode of transport was via river, and it would take five hours or more to get to the nearest town. In spite of problems with accessibility, pupil achievement in academic and co-curriculum was outstanding. School-town accessibility did not impact upon pupil learning. However, school-home accessibility, which is near and safe, is crucial to pupil learning and may be considered to involve a process of selection as it requires making decision on whether to participate in learning.

Structures-Finance

Refers to the physical and financial structures or resources surrounding the pupils. Despite having limited structures in rather poor conditions, pupil academic achievement actually improved during the early years. The design of the classroom spaces influenced teacher-pupil and pupil-pupil interactions. Monetary gifts won by the school, the supplementary food program, or monies paid to the school community, were used to improve the physical structures or conduct programs for the pupils. It may be said that the design of the structures and finance create attention towards learning.

Event

There are various events associated with pupil learning. The events may be planned or unplanned. Unplanned events such as floods are destructive to learning. On the other hand, planned events are often constructive towards learning. The planned events include time for study, daily schedule, examination and tests, and practicing and training. Study time is properly coordinated and monitored, and there is also flexibility in terms of the time that a pupil may come in for afternoon activities or night study. The pupils also spend a lot of their time in the school area, and have adequate time for interaction with their teachers as all the teachers and head teacher stay in the school quarters. There are also planned events that concerned the teachers, parents and the parent-teacher association (PTA) that indirectly impact upon pupil learning. These events include staff meetings, start of school academic session, discussions between school and parents, various activities conducted by the school staff, PTA and collaborations with other bodies, networking and benchmarking activities, sharing knowledge and practices, and taking part in various competitions and activities such as co-curriculum and club activities, the *Ethos & Watak Sekolah* Programs and so forth. Events may be considered as the time spent on learning, and interpreted as the opportunity for learning. The opportunity has to be constructed, and to produce quality pupils or products, more time should be given for events that contribute towards learning. Well-planned events that are properly implemented will form the routines or schemas associated with pupil learning.

Academic Curriculum

Academic curriculum refers to the standard curriculum for all primary schools in Malaysia; however, its implementation may vary. At the high performance rural school, the subjects are taught according to a well-scheduled timetable and trained teachers conduct the lessons. There is interaction and collaboration during classroom teaching and learning. The implementation of the curriculum is centred on pupils and their needs.

Program

The head teacher is the main initiator of the programs which are related directly or indirectly to pupil learning. The programs are concerned with the *Etos & Watak Sekolah* project, which is a major conceptual project by the Malaysian Education Ministry, or developed specifically for the school referred here as the brand programs of the school. The school is aware of its limitations and has decided to focus on English language and cultural performance, although at one time the school was also successful in athletics and sports. The main programs are shown in Table 2 below.

Table 2: Main Programs at the High Performance Rural Primary School

Program	Focus/Concept/Problem Solving	Notes
<i>Etos & Watak Sekolah</i>	English language, cultural performance, athletics	Program by Education Ministry to address various problems
English Language		
<i>ELIS</i>	Learning English language	Address poor achievement of English language in schools
<i>NILAM</i>	Pupil learning – reading	Address poor interest amongst rural pupils towards reading
Cultural Performance		
<i>Dance</i>	Learning and practicing cultural dances	Address involvement in co-curriculum artistic expression
Athletics		
<i>Athletics and Prolah Project</i>	Systematic training, body development, health, diet	Address pupils involvement in athletics
Co-curriculum		
<i>Clubs</i>	Cooperate and work as a team	Address pupils involvement in various club competitions
Brand Programs		
<i>Ngerupan</i>	Share responsibility on pupil learning	Community work or put effort together with school on task(s)

<i>Vesta Long House</i>	Make parents aware of things in the school for immediate action	Immediate information sharing and address communication
<i>Ai Kitai</i>	Night study supervision by parents and guardians	Awareness of importance of pupil learning at longhouse
<i>Prokat</i>	Parents beautify-maintain cleanliness of classroom	Parents involvement in pupil learning in classroom
<i>Biotik</i>	Learn to read English based on phonics	Believe that ability to read is crucial for further learning
<i>Telal Belalai</i>	Pupils communicate and network with foreign pupils	Provide experience, exposure and self-confidence to pupils

The head teacher refers to the brand programs as the innovations of the school. A program may be understood as a concept as it involves the construction of the concept and giving a name to the concept on the basis of its meaning in the Iban language. The primary aim of a brand program is to solve a problem that is specific to the school. The *Biotik* program addresses literacy amongst children. The *Ai Kitai* program addresses the failure of parents or guardians to understand the need for children to do their study or homework at night. The *Ngerupan* program addresses the problem that relate to parents' involvement with the school. The *Vesta Long House* program addresses the problem that relate to communication with parents and guardians at the longhouses. The *Telal Belalai* program addresses problems of communicating with people from different regions and countries. The *Prokat* program addresses the involvement of parents and guardians in the construction and design of the classroom learning environment. The programs or projects are properly planned, implemented and monitored.

Language

The knowledge state Language concerns English language and arithmetic. Although Iban is the language used by the community, the pupils speak good English and Malay language. The command of English in rural schools is often very poor and pupils do not communicate at all in English. However, at this school it is compulsory for the pupils to communicate in English. Communicating in English is a priority. Since 2003, the UPSR result for English has been 100% pass. During *NILAM*, which is one of the programs, the pupils discuss together and talk about the books that they are reading or have read. The children sing the Biotik and Arithmetic songs twice each day, once after breakfast and another time after the 10.20 am recess break. The wordings in these songs are the basic building blocks of spoken language and arithmetic.

People or Learning Resources

People refers to the head teacher, head teacher assistants, teachers, support staffs, parents, community, PTA and pupils. From the perspective of a school as an entity that learns, people may be

considered as the learning resources. The head teacher is a resource that is a major initiator of learning. The head teacher assistants may be considered as a resource that develops and implements plans and assist in the management of the programs for pupil learning. Teachers are another learning resource, and focused almost wholly on the implementation of teaching-learning, co-curricular activities and the various programs. Support staffs are a learning resource that ensures safe, smooth and efficient management of the school. Parents are also another learning resource because parents are the links to the pupils, who are the targeted resource to be developed. How parents involve themselves in pupil learning is important to pupil academic and co-curriculum achievements. Another learning resource is the community itself because support, response and reaction of the community to pupil learning would indicate whether there is facilitation or resistance to learning. The PTA is a learning resource because it is an official body that is set up to facilitate involvement of parents. At the school every member of the local community is a member of the PTA. Finally, it is important to note that the bigger children play the role of the older brother or sister to the younger ones. People represents the basic building blocks of learning in the rural primary school.

Practice

Practice refers to the observed actions of the head teacher, head teacher assistants, teachers, support staffs, pupils, parents, PTA and the community. The practices of the people include being (a) goal-directed, (b) proactive and responsible towards seeking knowledge or new information, (c) having perseverance or commitment or persistence, (d) showing love and care, (e) collaborate, (f) sharing knowledge, and (g) always well prepared or ready to learn. These practices help to create a positive disposition towards learning.

Value

Value represents the things that are considered important with regard to pupil learning. The things that are valued include knowledge of the importance of (a) leadership; (b) seeking knowledge in order to carry out tasks; (c) time; (d) effort, of which one is to seek knowledge; and (e) English language for learning. These values are important to self-confidence in learning.

Awareness

Awareness concerns matters that could affect achievement, that is, whether the school will continue to excel. There is awareness regarding pupil enrolment, facilities, longhouse re-location, and the need to have a hostel. The teachers and head teacher were also aware of the need to focus on cultural performance instead of athletics, the importance of English language, networking, brand programs, and so forth. The members are aware of their role in the community. For the parents and longhouse community, awareness of role may be seen from the support that they give to the school.

Disposition

Dispositions include (a) believing in God to guide them in their studies; (b) having communication between people; (c) planning structured events and maintaining physical structures; (d) learning or constructing memories together; and (e) being able to read first before further progress can be made at primary school learning.

Discussion and Conclusion

Thirteen knowledge states of pupil learning at a high performance rural primary school in Sarawak were uncovered, and these are categorized as (1) Basic Profile, (2) Infrastructure, (3) Transportation, (4) Structures-Finance, (5) Event, (6) Academic Curriculum, (7) Program, (8) Language, (9) People or Learning Resources, (10) Practice, (11) Value, (12) Awareness, and (13) Disposition. The findings from this study have similarities to the literature for the factors that are important to pupil learning such as parental participation, positive home-school relationship, school leadership, excellent teaching, professional development for teachers, teacher retention, school effectiveness, high standards and expectations, pupil attendance, travel times for students, safe-orderly environment, reading, numeracy, literacy and measurement of student achievement (Aziah & Abdul Ghani, 2012; Casto, 2016; Cortez-Rucker et al., 2013; Laszlo, 2013; Mwanik & Orodho, 2016). However, the findings of this study are different from the literature on factors for infrastructure, socio-economic status and parent education because infrastructure was poor but pupil learning at the rural primary school improved and most of the parents in this study do not have secondary school education and work as labourers, general workers and doing family-farming. This does not imply that infrastructure, socio-economic status and parent education are not important but showed that attention towards learning may be created through other means such as the design of the learning space and active participation of parents in pupil learning. The findings from this study also showed that events and programs are crucial to pupil learning. However, events and programs are not well highlighted and covered in the literature. The findings of this study also reported on the practices, values and awareness concerning pupil learning in the context of this rural community. The findings of this study in terms of the knowledge states showed the importance of creating time, giving attention, designing suitable structures, construction of planned events to create schemas of learning, planning and management, problem solving, language for representation and communication of ideas, awareness and good practices of pupil learning in rural schools. Finally, the findings of this study will be useful for practitioners in education and community development. However, future research should consider pupil learning at other rural primary schools that are not necessarily high performing. Studies of this nature would help establish the kind or type of knowledge states for these schools, and provide insights on the concepts that may be central to pupil learning in rural primary schools.

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