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School Climate and Academic Performance in High and Low Achieving Schools: Nandi Central District, Kenya

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Abstract

This study sought to find out the type of school climates prevailing in all the provincial secondary schools and the school climate differences between the high and low performing provincial secondary schools in Nandi-Central District, Kenya. Causal-comparative research design was used where the mean ratings on school climate of 103 teachers of four high and four low performing schools were compared and analysed to establish the extent of differences and their implications. High performing schools recorded a more favourable ecology, milieu, and school culture than the low performing schools. School climate was found to have a significant influence on academic performance of students in provincial secondary schools in Nandi–central district. The study recommended that schools strive to improve the schools' ecology, milieu, social climate and school culture, thereby creating a positive climate that will encourage better academic performance among students.

Keywords: School, climate, milieu, culture, ecology, academic performance, Kenya

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INTRODUCTION

School climate is a significant element in improving academic performance especially in Nandi-Central district which has for a long time relied on a few outlier schools that have consistently performed well while the rest continue to perform dismally in national examinations. Provincial secondary schools in Nandi–Central district admit approximately 1,200 students every year to join Form 1 with an average entry marks of 370 out of a possible 500 obtained at Kenya Certificate of Primary Education. At the end of four years of secondary education, only four out of eight provincial secondary schools obtain a mean score of 7.0, a grade of C+ and above. Majority of the students in the other four provincial secondary schools obtain a grade of below C plain (mean score of 6.9) Interplay of favorable school climate factors appears to influence performance in national examinations in those schools that perform better (Ministry of Education, 2004-2009).

School climate is an integral and indispensable component of the teaching and learning process in Kenya and the world at large. Indeed, no meaningful teaching and learning can take place in an environment that is conducive and safe to both learners and staff. It is, therefore, imperative that educational stakeholders foster safe and secure school environments to facilitate increased learner enrolment, retention and completion and hence attainment and quality education. (UNESCO, 2006)

Schools perceived as being positive, safe, and nurturing environments focused on student learning, perform better in examinations regardless of available technology or teacher training. This is not to say that a school with no textbooks will outperform one with textbooks based solely on environment, but that the learning environment, culture, and climate produced by the school as a whole may help or hinder learning.

The quality of education tends to be evaluated in terms of the number of students passing national examinations (Eshiwani, 1993). The expectation of parents is that their children perform well in national examinations in any provincial secondary school attended as long as the criterion for admission to these schools is the same. This is not however the case as the perception among many parents is that some schools, although they are the same in category, seemingly perform better than others. This has resulted in many parents rushing to secure admission in these better performing schools while the rest, with equally better resources and facilities, continue to record low enrolment, let alone the poor performance in national examinations.

Constant attention must, therefore, be paid by all stakeholders in education towards the creation and continuation of a school climate that is warm, welcoming, supportive, and conducive to the learner. Such a school climate exists when all students feel comfortable, wanted, valued, accepted and secure in an environment where they can interact with caring and trusting people. This study therefore was set to examine the types of school climates prevailing in both high and low performing provincial secondary schools in Nandi-Central district with the aim of establishing whether these school climates were significant in influencing students' academic achievement.

No school is exactly the same as the other. Schools show a lot of differences in terms of the feel, atmosphere or ideology, student behavior, academic performance, social and civic values, moral character, and interpersonal skills. The cumulative effect of these differences creates the 'ethos' or climate of the school. Many studies have been conducted linking a positive school climate to student performance (Bliss, Firestone, & Richards, 1991; Carter, 2000; Cruickshank, 1990; DuFour, 2000; Goddard, Tschannen – Moran, & Hoy 2001; Hoy & Feldman, 1987; Hoy & Hannum, 1997; Klinger, 2000; Lezotte, 1991, 1992, 2002). The overall conclusion of these studies has been that a positive school climate exists as an essential element in successful schools. Freiberg (1998) asserts, "… school climate can have a favorable influence on the health of the learning environment or a significant barrier to learning" (p. 22).

Although there is not one commonly accepted definition of school climate, the vast majority of researchers and scholars suggest that school climate, essentially, reflects subjective experiences in a school (Cohen, 2006). Pioneering works of early researchers did attempt to define school climate in a variety of ways. Perry (1908) was the first educational leader to explicitly write about how school climate affects students and the process of learning. Halpin and Croft (1963) define school climate as the social atmosphere of a setting or a "learning environment" in which students have different experiences depending upon the protocols set up by the teachers and administrators. Maine Guidelines (2004) define school climate as the synthesis of policies, procedures, activities, programs and facilities both formal and informal within a school infrastructure that affect the attitudes and behavior of all people in the school, staff, students, parents and visitors. The concept of school climate is multi–dimensional and influences many individuals including students, parents, school personnel and the community. Haynes (1998) asserts that a positive school climate perception helps to supply high risk students with a supportive learning environment as well as preventing anti–social behavior. Such a climate is associated with fewer behavioral and emotional problems for students. Although these definitions are as

varied as the schools themselves, they have one common element that school climate affects members of a school either positively or negatively.

CONCEPTUAL FRAMEWORK

There are varied ways of conceptualizing organizational climate. This study was premised on Tagiuri's (1968) conceptualization of organizational climate. Although the distinction between the term school culture and climate is somewhat blurred and overlapping (Hoy and Miskel, 1996), culture consists of shared assumptions, values, or norms while climate is defined as shared perceptions of behavior (Ashforth, 1985). Halpin and Croft's (1963) pioneering work provided the impetus for research into the concept of organizational climate. They constructed the Organizational Climate Descriptive Questionnaire (OCDQ), which stimulated a lot of interest in school climate research (Anderson, 1982). Wayne et al. (1986) developed two revised versions of the OCDQ, one for elementary schools (OCDQ–RE) and the other for secondary schools (OCDQ–RS).

Tagiuri (1968) conceptualized organizational climate as consisting of ecology, milieu, social climate and school culture. Ecology refers to the physical features of the school, such as the design of buildings, age, and size, facilities and resources including the equipment and technology used in the school's operation. Milieu is defined as the characteristics of the people; their attitudes, skills, motivation, feelings, morale, values and leadership. Social climate is defined as the social interactions in the school between the teachers and students, teachers and administrators, students and administrators. It also encompasses aspects such as respect, caring, support and dependence, shared decision making, good communication, equal opportunities for student participation and community – school relations. Organizational climate clearly influences the success of an organization. Glisson and James (2002) demonstrated that culture and climate are distinct, but interrelated and can play the role of constructs.

Many organizations, however, struggle to cultivate the climate they need to succeed. Hellriegel and Slocum (2006) explain that organizations can take steps to build a more positive climate through: communication, values expectations, norms, policies and rules, programs and leadership which require a rich organizational structure, reward systems, technology, or tasks (Datnow, Hubbard, & Mehan, 2002).

LITERATURE REVIEW

Ecology

Tagiuri (1968) defines ecology as the physical and material elements of a school such as the design of buildings, size and age, state of décor, facilities, and technology in use. The physical and architecture of schools plays a significant role in communicating meaning in schools. Students and staff spend much of their time in a school building.

McGuffey (1982) in his studies examined the possibility of a relationship between the building conditions and student performance on standardized tests. He reported that newer building, improved lighting as well as specific features such as the presence of science laboratories and libraries improved students' outcomes significantly. In another study of school building design and student learning, Cash (1993) found that comfort factors appeared to have more effect on student achievement than did structural factors. High achievement was associated with schools that were air conditioned, enjoyed less noisy external environments, had less graffiti on walls and classroom furniture and students' lockers were in good state of repair. Rutter et al (1979) on eight high achieving schools noted that the decorations and care of schools and classrooms were positively related to higher student achievement. Other researchers have consistently found a relationship between building quality and academic out–comes (Earthman & Lemasters, 1996; Haggins, Hall, Wall, & McGuffey, 2005; Schneider, 2002).

These studies have found that the design and building conditions related to human comfort, indoor quality, lighting, acoustical control and science laboratories have demonstrable impact on student achievement. Chronic noise exposure hinders cognitive functioning and impairs pre–reading and reading skills (Haynes & Comer, 1993). The quality of school buildings is linked to student behavior including vandalism, absenteeism, suspensions, disciplinary incidences, violence and smoking (Schneider, 2002). Students are not the only ones affected by poor quality school facilities. Buckley, Schneider, and Shang (2004), in their studies, reported that teacher retention decisions were significantly related to the quality of school facilities.

Milieu

Milieu focuses on the characteristics of the people in the organization such as their skills, motivation, feelings, morale, values and leadership (Owens & Valesky, 2007). Measures of school milieu based on teacher characteristics have shown little impact on outcome (Anderson, 1982). Rutter et al. (1979) found that neither mean hours of preparation nor the checking of record books was associated with any outcome.

Similarly, McDill and Rigsby (1973) found no relationship between mean annual teacher salary and neither achievement nor aspirations among high school students. However, they found a higher percentage of teachers with more than a Bachelor of Arts degree to be significantly related to both achievement and to plans. Farrant (1980) contends that the professional skill of the teacher establishes a productive classroom atmosphere from the start by means of good organization and carefully planned teaching structures. He further asserts that professional competence often transforms into high quality of teaching with the expectation that this would influence the learning of pupils. Researchers such as Goldhaber (2002), Greenwald, Hedges, and Laine (1996), Nye, Konstantopoulos, and Hedges (2004), Wenglinsky (2001), and Wilson and Floden (2003) however, found credentials such as graduate degrees to be weakly related to teacher performance, as is teaching experience beyond the first or second year of a teacher's career. Agyeman (1993) reported that a teacher who does not have both the academic and the professional teacher qualification would undoubtedly have a negative influence on the teaching and learning of his/her subject. However, he further stated that a teacher who is academically and professionally qualified, but works under unfavourable conditions of service would be less dedicated to his work and thus be less productive than a teacher who is unqualified but works under favourable conditions of service.

Agba et al (2010) argue that a teacher who is friendly and warm towards the students is more likely to stimulate learning than the one who is withdrawn and autocratic in his dealing with the students. Abang (2006) reported that teachers provide the stimulus that produces the various forms or types of relationship that exist within the classroom. He further states that these relationships influence the attitude developed by the students as well as their performances in the subject taught. A warm, friendly, sympathetic and caring teacher evokes a positive classroom perception.

Social Climate

Tagiuri (1968) defines the schools' social climate as the social interactions in the school between the teachers and students, teachers and administrators, students and administrators. It also encompasses aspects such as respect, caring, support and dependence, shared decision making, good communication, equal opportunities for student participation and community – school relations.

Several researchers have delved into the aspect of the schools' social climate and the overall conclusion of these studies has been that the schools' social climate has the potential of yielding both positive educational and psychological outcomes and at the same time negative effects on both the students and the school personnel. Freiberg (1998) argues that aspects of school social climate including "...trust, respect, mutual obligation and concern for others' welfare can have powerful effects on educators and learners' interpersonal relationships as well as academic achievement and overall school progress..." (p. 44).

McEvoy and Welker (2000) posit that positive interpersonal relationships and optimal learning opportunities for students in all demographic entities can increase achievement levels and reduce maladaptive behavior. Wynne (1980) also adds that the value of good relationships and non–academic events involving both teachers and students can have immense contribution to school coherence (an aspect of school climate). In the school every student is seen as a member of a group; how a student interacts with other group members will influence his or her performance. Groups that are considered high in achievement consist of achieving-students as their interactions are bound to influence their academic achievement (Inyang-Abia 2001). Students who succeed in social relationships with their co-students have been found to be successful in their school work (Brembeeks, 1980). Duke and Perry (1978) also noted that good student- teacher relationships in alternative schools was associated with both a degree of informality and good behaviour.

Many research reviews have also shown that effective risk prevention and health promotion efforts are correlated with safe, caring, participatory, and responsive school climate (Berkowitz & Bier, 2005; Catalano et al., 2002; Greenberg et al. 2003). A safe, caring, participatory and responsive school climate tends to foster great attachment to school as well as providing the optional foundation for social, emotional and academic learning (Blum et al., 2002.)

School Culture

Owens (1995) and Tagiuri (1968) define school culture as the values, beliefs, norms and behaviour patterns of the people who are members of the school community. School culture generally refers to a set of values and belief systems of various groups within the school. It also includes assumptions, norms, history, heroes, myths, rituals, artefacts, visible and audible behavior patterns. Deal and Peterson (1990) describe school culture as the unwritten rules, traditions, norms and

expectations that seem to permeate everything: the way people act, how they dress, what they talk about or avoid talking about, their work, and their students. Schein (1985) also defines school culture as complex webs of traditions and rituals that have been built over time as teachers, students, parents, and administrators work together and deal with crises and accomplishments. Culture is based on past experience, which provides a template for future action. Fiore (2004) adds that culture is the supporting structure on which the school climate rests.

Components of a school culture can support or impede learning thereby affecting academic performance of students either positively or negatively. Many researchers have considered teacher commitment to improve students' academic performance as a significant variable in climate. Brookover et al. (1979) found that teacher commitment appeared to be a function of student perception that teachers care. Brookover and Lezotte (1979) found the same high relationship between teacher commitment and student success. Schein (1985) also adds that commitment grows in strong caring cultures. Studies by Miller (1968) and Maxwell (1967) found a negative correlation between teacher disengagement (the tendency of teachers to be uninvolved) with student achievement in elementary schools. Where teachers are committed, their students tend to perform better.

METHODOLOGY

Study Design

Causal comparative research design (ex post facto) was used in this study where an attempt was made to identity the cause–effect relationship between school climates of high and low performing provincial secondary schools in Nandi–Central district of Kenya and academic achievement of students at Kenya Certificate of Secondary Examination (K.C.S.E.). In this design, the cause –effect linkage is made logically as the research process proceeds as follows: it focuses on the effect and then asks what might be causing that effect, and lastly, attempts to identify and substantiate a plausible connection between the effect and its cause (Gay, 1996). The design requires an identification of a criterion group, which is composed of people who have been observed, judged, or who describe themselves as possessing a certain characteristic that differentiates them from others, and examination of the possible causes for these differences. Kafui (2005) posits that causal-comparative studies are important in education because several educational variables cannot be manipulated and be used for experimental research. Descriptive research analysis was also employed in this study. Fraenkel and Wallen (1993) posits that descriptive analysis involves asking a large group of people questions about a particular issue and drawing conclusions.

In this study, negative and positive school climate were presumed to have already occurred and, therefore, data was collected and analysed retrospectively to establish their relationships or associations and meanings in relation to academic performance of students at the K.C.S.E. level.

Sample Size and Sampling Techniques

Purposive sampling technique was used to identify both the high and low performing schools based on the KCSE examination results of the selected schools. Out of the eight provincial secondary schools; four were reported to be high performers while the other four were poor performers in national examinations for the last five years. The high performing schools in this study were those whose examination mean scores recorded over the last five years to be above 7.0 with a mean grade of C+ and above, while the low performing schools were those whose mean scores were 6.9 and below, with a mean grade of less than C plain in the same period.

The schools selected were of the same category in the sense that they are all provincial secondary schools. Cluster sampling technique was used to involve all. The sample in this study comprised of 103 teachers in four provincial boys' secondary schools, three girls' secondary schools, and one mixed gender secondary school.

Research Instruments

A questionnaire was used in this study. The questionnaire was modelled on the four-point scale numbered 4, 3, 2 and 1. The points represented the following responses: 4 - Agree, 3 - Tend to Agree, 2 - Tend to Disagree and 1 - Disagree. These points represented the extent of agreement or disagreement by the respondent on the statements that were listed in the questionnaire. The respondent was asked to tick in the box that provided the point that corresponded with the description that best suited his or her view. These tools sought information to rate their schools on each of the items regarding to their perception of school climate prevailing in their respective schools.

Development of the Research Instruments

The researchers designed a questionnaire intended for use in this study. The statements that characterize each dimension of school climate were patterned after the instrument that Halpin and Croft (1963) constructed called the Organizational Climate Descriptive Questionnaire (OCDQ). It contained sixty-four Likert–type items that were assigned to eight subtests delineated to factor–analytic methods. Four subtests dealt with the characteristics of the group and the other four dealt with the characteristics of the principal as a leader. From the scores of these eight subtests, they then constructed for each school a profile, which determined the relative position of the school on the open to closed intensity scale.

Halpin's and Croft's (1963) pioneering work concentrated mainly on the principal behaviour, but in this study the scope was widened to include teacher and student behavior in determining school climate. The questionnaire was slightly modified to incorporate not only the perception of the teachers on the principals' , behavior but also their perceptions on their school climate as well as their role in shaping school climate at being team players with the principal.

The questionnaire contained 46 items. It was divided into five sections: section A, dealt with demographic profile of the respondents; section B, ecology; section C, milieu; section D, social climate; and section E, school culture dimensions of the school climate. The teachers were asked five additional questions that dealt on specific matters that affected them in their teaching.

Reliability of the Instrument

To test reliability, a pilot study was conducted in three provincial secondary schools; one girls' secondary school, and two boys' secondary schools in the neighbouring Nandi-North district. A reliability analysis was done to test whether each item stated in the questionnaire yielded the desired and consistent outcome (Gay, Mills and Airasian, 2006).

Cronbach's Alpha coefficient was obtained to estimate the internal consistency of items. A reliability coefficient of greater than 0.635 for both students and teachers in each dimension of school was obtained as shown in table 2.

Table 1: *Reliability Coefficients*

		Cronbach's Alpha	No of items
	Ecology	.743	10
Teachers	Milieu	.724	8
	Social climate	.916	17
	School culture	.849	10

The results of the pilot study were used to test the reliability of the questionnaire in order to establish the extent to which it was able to elicit the desired information. The instrument was reliable as the coefficient of reliability was found to be greater than 0.60 in all the sub-scales that were being studied namely: ecology, milieu, social climate, and school culture. A coefficient of reliability of .60 was considered good enough in this study.

Data-Gathering Procedures

During the pilot study, the researchers administered the research instrument to three leading provincial secondary schools in the neighbouring Nandi –North district. Two of these schools were Boys' schools and one Girls' school. In the actual study, all the eight provincial secondary schools in Nandi-central district participated in the study: three Girls' schools, four Boys' schools and one mixed gender secondary school.

The questionnaires were distributed to all the teachers who were available in the staffroom at the time of the study. Every teacher who was at the staffroom was given a questionnaire. Not all the teachers were present in the staffroom at the time of the study since classes were in progress. However, a sufficient number of respondents were obtained for the study.

Statistical Treatment of Data

The data collected was encoded and analyzed using Statistical Package for Social Sciences (SPSS). Descriptive and inferential statistics were employed. Descriptive statistics delved mainly on describing the demographic profiles of the respondents and their perceptions of school climates prevalent in the provincial secondary schools in Nandi-Central district.

Comparisons of school climates of both high and low performing secondary schools in Nandi- Central district were made to establish the influence of school climate on academic achievement. *T-test*, a parametric statistical tool, was used to compare mean differences of the perceptions of teachers on all aspects of school climate under study in both the high and low performing schools. A *t*-test was used to determine whether two means were significantly different at selected probability levels (Gay, Mills, & Airasian, 2006). The level of significance was set at 0.05 in this study.

RESULTS AND DISCUSSION

This study examined if there was a significant difference between the school climate of high and low performing provincial secondary schools in Nandi-Central District as perceived by teachers and measured by the following components:

a) Ecology
b) Milieu
c) Social climate
d) School culture

The null hypothesis: *there is no significant difference between the school climate, measured by ecology, milieu, social climate, and school culture, of high and low performing provincial secondary schools in Nandi-Central district as perceived by the students and teachers* was tested in this section.

Ecology

Table 2 shows test of differences on teachers' ratings on ecology between high and low performing schools.

Table 2:*Test of Differences on Ecology between High and Low Performing*

	Performance category	N	Mean	Std. Deviation.	Std. Error mean
Ecology	High performing schools	59	3.1541	.40065	.05216
	Low performing schools	44	2.7438	.62502	.09423

Independent samples test

		Levene's Test for Equality of variances		t-test for equality of means						95% confidence interval of the difference	
		F	Sig.	t	df	Sig.(2-tailed)	Mean difference	Std. Error difference		Lower	upper
Ecology	Equal variances assumed	12.554	.001	4.051	101	.000	.41028	.10127		.20938	.61118
	Equal variances not assumed			3.810	68.614	.000	41028	.10770		.19541	.62516

Milieu

Table 3 shows the test of differences on the teachers' ratings on milieu between high and low performing schools.

Table 3: *Test of differences on milieu between high and low performing schools*

	Performance category	N	Mean	Std. deviation	Std. Error mean
Milieu	High performing schools	59	3.0572	.67287	.08760
	Low performing schools	44	2.4489	.63756	.09612

Independent samples test

		Levene'sTest for Equality of variances		t-test for equality of means						95% confidence interval of the difference	
		F	Sig.	t	df	Sig.(2-tailed)	Mean difference	Std. Error difference		Lower	upper
Milieu	Equal variances assumed	.488	.486	4.641	101	.000	.60834	.13108		.34831	.86837

Equal variances not assumed			4.678	95.337	.000	.60834	.13005	.35018	.86650

Social climate

Table 4 shows test of differences on teachers' ratings of social climate between high and low performing schools.

Table 4: *Test of Differences on Social Climate between High and Low Performing Schools*

	Performance category	N	Mean	Std. Deviation	Std. Error mean
Social climate	High performing schools	59	3.0578	.63754	.08300
	Low performing schools	44	2.6778	.67672	.10202

Independent samples test

		Levene's Test for Equality of variances		t-test for equality of means						95% confidence interval of the difference	
		F	Sig.	t	df	Sig.(2-tailed)	Mean difference	Std. Error difference		Lower	upper
Social climate	Equal variances assumed	.004	.952	2.915	101	.004	.38002	.13037		.12140	.63864
	Equal variances not assumed			2.869	89.645	.004	.38002	.13152		.11872	.64132

School culture

The test statistic obtained was 6.212 with a *p*-value of .000 which was less than 0.05, indicating that there was a significant difference between the school culture in high and low performing provincial secondary schools in Nandi-central district as perceived by teachers. Teachers in high performing schools recorded a positive school culture with average rating of 3.3881 compared to their counterparts in the low performing schools who recorded a mean of 2.6409. Table 5 shows test of differences on the teachers' rating of social climate between high and low performing schools.

Table 5: *Test of Differences on School Culture Between High and Low Performing*

	Performance category	N	Mean	Std. deviation	Std. Error mean
School culture	High performing schools	59	3.3881	.54046	.07036
	Low performing schools	44	2.6409	.68005	.10252

Independent samples test

		Levene'sTest for Equality of variances		t-test for equality of means						95% confidence interval of the difference	
		F	Sig.	t	Df	Sig.(2-tailed)	Mean difference	Std. Error difference		Lower	upper
culture	Equal variances assumed	2.108	.150	6.212	101	.000	.74723	.12028		.50862	.98583
	Equal variances not assumed			6.009	79.905	.000	.74723	.12434		.49977	.99468

Ruther et al (1979) and Wynne (1980) found that schools that recognize students' accomplishments tend to have higher levels of achievement. School culture is a significant factor that influences academic performance either positively or negatively. A positive school culture results in better academic performance of students as opposed to a negative school culture. A negative school culture seems to permeate the low performing provincial secondary schools in Nandi-central

district. This might explain their persistent low performance in national examinations. Rosenthal and Jacobson (1968) in their research sum up by reporting that a high achieving school is one in which the staff manifests attitudes of confidence that students will be able to succeed academically.

The null hypothesis was rejected since there was a significant difference between school climate in high and low performing provincial secondary schools in Nandi- Central district as measured by ecology, milieu, and culture as perceived by the teachers.

CONCLUSIONS AND RECOMMENDATIONS

Provincial secondary schools in Nandi–Central district have a generally favourable ecology, milieu, social climate and school culture as rated by teachers. However, much can be achieved if school leaders interested in incorporating school climate policy into practice create guidelines for in-service professional development based on school climate research and practice.

There is need to support the purpose of education in a society and demonstrate how we can use evaluating and improving school climate as a springboard to develop the skills, knowledge and dispositions that provide the foundation for active citizenship and school climate improvement. Standards for schools climate assessment procedures and guidelines for selecting a school climate measure should be put in place.

Policy makers must become aware of school climate research and the importance of positive school climate and encourage teacher preparation programs that give teachers and administrators the tools to evaluate classroom and school climate and take steps to use these findings to promote a climate for learning in schools.

A sustainable, positive school climate fosters youth development and learning necessary for a productive, contributing and satisfying life in the society. In other words, when students, in partnership with educators and parents, work to improve school climate they promote essential learning skills (e.g. creativity and innovation skills, critical thinking and problem solving skills, communication and collaborative skills) as well as life and career skills (e.g. flexibility and adaptability, initiative, social and cross culture skills, productivity and accountability, leadership and responsibility) that provide the foundation for 21st century learning.

Further studies could look at how program developers, university researchers, and local educational agencies can directly conduct carefully constructed studies to create and support teacher professional development programs that encourage the development of teacher professional communities within schools and ascertain their impact on improving school culture and student achievement.

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