Comparison of academic results between fully autonomous and non-autonomous schools.

Abstract

School autonomy empowers schools to make decisions to invest in matters that are important for the school. School autonomy is also related to increased or improved student performance. Since 2014, the Bhutanese Ministry of Education implemented Central School reform initiative, which granted school autonomy in financial matters and school governance. The reform initiative was as a result of surmounting evidences on the perceived decline on the quality of education and student performance. This research attempted to determine if students' performance in board examinations improved over the consecutive years in one of the central schools. Using students' board examination marks for four years, this research determined that there were significant improvements in students' performance, however the findings were inconsistent. Possible reasons for the inconsistent findings are discussed.

Keywords: Central schools, autonomy, sustainability, equity, judicious use of funds, teacher professional development and facilities.

Introduction

The Constitution of the Kingdom of Bhutan stipulates that education should be provided to all children free of charge (Royal Government of Bhutan [RGOB], 2008). Article 9, Principles of State Policy, Section 16 states that:

> The state shall provide free education to all children of schools going age up to the tenth standard and ensure that technical and professional education is made generally available and that higher education is equally accessible to all based on merit (RGoB, 2008, p.20).

In keeping with the constitutional provision, except for a few private schools, colleges, and Early Childhood Care and Development centres, all other educational institutions are operated and funded by the RGoB. However, in 2014 during the tenure of the second democratically elected government central school (CS) reform initiative was launched (Ministry of Education [MoE], 2016). CS is defined as "a centrally located and integrated resource based large school. A good autonomous boarding school" (MoE, 2016, p.14). One of the goals of the implementation of CS reforms was to make the CS a model school and a 'centre of excellence' with good and adequate educational resources aimed at fostering creativity, innovation, and entrepreneurship in children. The reform initiative was put forth due to the perceived decline in education quality as determined by several research (Education Sector Review Commission, 2008; Royal Education Council, 2009). The operational guidelines of CS grant autonomy to the school in most of the operational areas such as budgeting, expenditure, teachers' professional development programs, and decentralisation of authority. School autonomy is associated with improved student performance (Organization for Economic Cooperation and Development, 2011).

School autonomy and variations

School autonomy has been defined by scholars in a number of ways. Hooge (1995) defines school autonomy as the "degree of self-government in relation to the degree of state intervention" (p.1). Whitty (1997), defined school autonomy as "moves to devolve various aspects of decision-making to individual public schools" (p.3). Neeleman (2019) defined school autonomy as " a school's right of self-government-encompassing the freedom to make independent decisions- on the responsibilities that have been decentralized to schools'' (p.34). OECD (2011) asserts that school autonomy varies in the different partner countries with the level of decentralization and the authority granted for specific purposes. For example, OECD (2011)

maintains that in the Czech Republic, the Netherlands, Bulgaria, and Macao-China some of the schools have the authority to hire and dismiss teachers, and the regional (district) and National education authorities have responsibilities for formulating and allocating budget. Similarly, the Czech Republic, the Netherlands, the United Kingdom, and Macao-China grants the greatest autonomy in terms of curricula and assessment. In countries such as Japan, Korea, New Zealand, and Hong Kong, majority of the schools are responsible for establishing assessment practices, determining which textbooks are to be used. They can also decide which courses are to be offered. However, these countries do not have greater autonomy in allocating resources.

In the context of the Bhutanese education system, CS were granted autonomy only in allocating resources, especially budget. Schools were granted autonomy in formulating and proposing a budget for various instructional and non-instructional and non-instructional purposes. According to the MoE (2016), the central Schools shall submit their annual recurrent budget proposals to the Department of School Education. The Department of Public Accounts (DPA) shall release the fund to the LC account of the Ministry of Education/ Dzongkhag/ Thromde and subsequently release it to the respective CD [current deposit] accounts of the schools quarterly on submission of reconciled financial statements. The head of the school shall have the full authority to operate the given school budget in consultations with the School Management Team and School Management Board (p.20).

In terms of human resources and instructional processes such as the curricula and assessment practices, CS were not granted autonomy. Recruitment of the teaching and non-teaching positions were done by the Royal Civil Service Commission in consultation with the MoE, and the district administration. Thus, schools could not hire better staff members nor dismiss both professional and support staff. Similarly, schools were asked to follow the

nationally prescribed curricula and assessment practices. Thus, it appears that autonomy in the context of Bhutanese CS were given only for budget allocation.

School autonomy and accountability

CS were granted financial autonomy while simultaneously greater accountability was placed on the schools. Figlio and Loeb (2011) define school accountability as "the process of evaluating school performance on the basis of student performance measures" (p.384). This definition encompasses the assessment component such as assessing the effectiveness of the school and assessment of students' performance. School autonomy must operate on the basis of compatible incentives taking into consideration the national education policies, including incentives for those policies' execution in order to be effective. Having more managerial responsibilities at the school level automatically implies that the school must also be accountable to stakeholders, as well as the national and local authorities. The empirical evidence from educational systems where schools have managerial autonomy shows that autonomy helps establish relationships between parents and schools and is essential in putting policies to improve student learning into motion (World Bank Group, 2015). The three interrelated constructs of school effectiveness have been developed into a conceptual model, as shown in Figure 1.

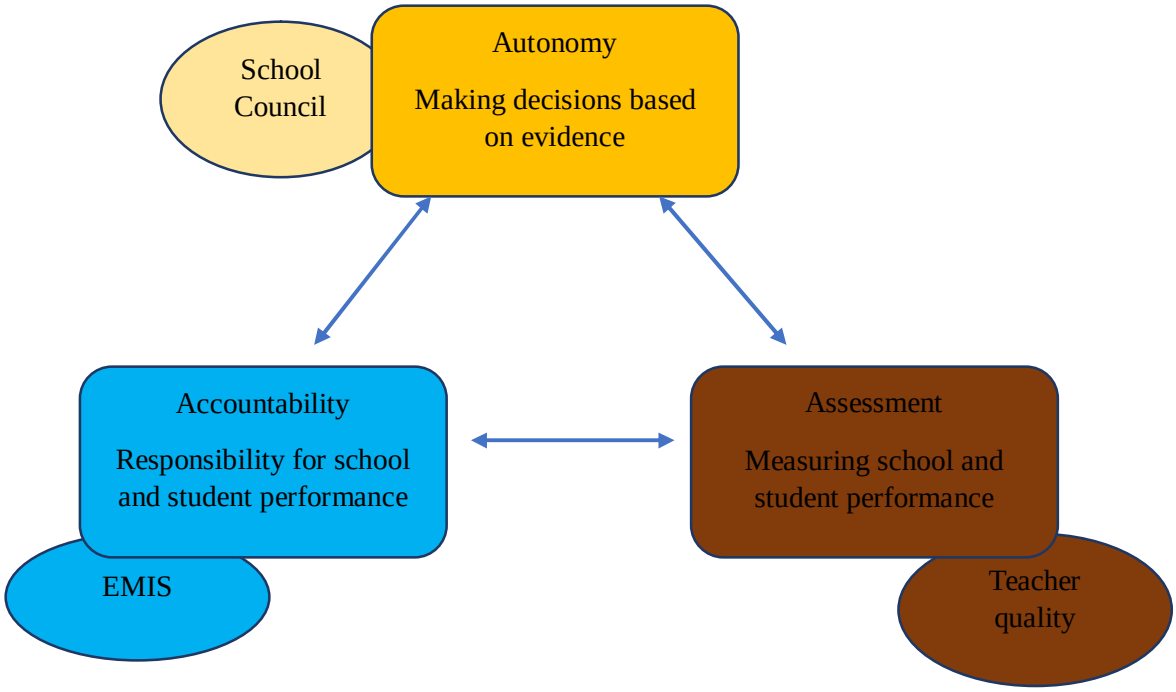

Figure 1: The 3A's Model as a closed–loop System. Adapted from World Bank Group. What Matters Most for School Autonomy and Accountability: A Framework paper. Copyright 2015 by World Bank Group.

According to the World Bank Group (2015), school councils are essential for achieving school autonomy because they act as advocates for the stakeholders of the school: parents and pupils. As a result, the school council can assist school management in customizing school services (curricula, teaching materials, school calendar, teacher selection, etc.) to the needs of students. A more active role of school councils in school governance can make school autonomy more effective. In the context of the Bhutanese education system, the school council can be compared to the School Management Board (SMB). The operational guidelines for CS and autonomous schools (MoE, 2016), emphasise that CS shall be accountable to the public, the local authorities, and the MoE and will be assessed through the signing of delivery and performance targets, and strictly maintains that schools will be governed by the SMB. According to the MoE (2009), SMBs are chaired by local government officials and consist of a representative from communities, parents, and students.

Schools employ school assessments to identify the need for pedagogical practice modifications as well as teacher training requirements. Any assessment system's primary goal is to track student learning, which is connected to teacher-to-teacher effectiveness. Therefore, school and student assessment would need to relate to teacher performance and teacher quality for a closed-loop system (World Bank Group, 2015). In the Bhutanese education system, students' academic assessment is primarily conducted by the Bhutan Council for School Examinations and Assessment (BCSEA), and thus the schools do not have any autonomy in conducting the national level assessments. However, school-level assessment has conducted the result of both the national level examinations conducted by BCSEA as well as the schools are analysed to draw information for further intervention.

As the system is put in place to report on performance indicators at the school and system levels, an Education Monitoring Information System (EMIS) is crucial to accountability. As high-quality data is fed and analysed to generate reports that inform the parents and society, an EMIS enforces accountability. In conclusion, it is necessary to strengthen the duties of SMBs and implement policies that aim to raise the capacity of teachers and operate an EMIS in order to make the relationship between autonomy, assessment, and accountability operational. If not, there is a chance that the 3A model won't achieve the best closed-loop status (World Bank Group, 2015),

Even in the Bhutanese educational context, the literature suggests that the requirements for effective school autonomy was in place. For example, the operational guidelines (MoE, 2016) had decentralized the governance of the school to the SMBs, and principals of the schools were empowered to make decisions that affected the school with authentic accountability to the SMBs, local authorities such as the district education office and the MoE. In terms of monitoring and

evaluation of the performance of the school, teachers and students, relevant organisations were in place. For example, at the national level, schools were monitored and evaluated by the Education Monitoring Division, and teachers were assessed using Individual Work Plan by the School Management Committee. Student assessment was conducted by the BCSEA.

Furthermore, to increase teacher effectiveness the school administration was responsible for budgeting and conducting teacher professional development programs. Yet, autonomy was lost, while accountability for school and student performance remained. Therefore, without autonomy and with increased accountability, an important questioned lingered: how do the stakeholders perceive the impact on student and school success?

School autonomy, accountability, and students' learning outcomes

The primary purpose for which the CS reform initiative was implemented in Bhutan was due to the perceived decline in the quality of education, encompassing both the teaching and the learning process (MoE, 2016). Furthermore, the very purpose of any educational intervention or reform initiative lies in the improvement of the academic outcomes of the students (Day, Sammons, & Gorgen, 2020). The Hamilton Associates was commissioned by the Western Australia Department of Education to review the independent public-school initiative. In doing so, Hamilton Associates (2015) found six factors of school autonomy that influenced student learning outcomes: principal capacity building, intelligent accountability mechanisms, an empowered mindset among the teaching fraternity and the school administration, collaboration within and between schools, a focus on improving the instructional quality and the learning experiences of students, a commitment and capacity for the governing bodies to support and

deliver meaningful support and not just fleeting gains. The CS operational guidelines also provide directions for the improvement of student outcomes through the following:

1. Principal leadership/capacity building

Liethwood, et al. (2009) made seven strong claims about the effect of leadership on school and student outcomes. Two of the most pertinent claims are relevant to how school leadership influences features of the school organisation and the influence on school and student outcomes.

> Revised claim 1. School leadership has a significant effect on the features of the school organisation which positively influences the quality of teaching and learning. While moderate in size, this leadership effect is vital to the success of most school improvement efforts.
>
> Revised claim 4. School leadership improves teaching and learning, indirectly and most powerfully by improving the status of significant key classroom and school conditions and by encouraging parent/child interactions in the home that further enhance student success at school.

Given the pivotal role of school leadership in improving school and student outcomes, the operational guidelines for CS (MoE, 2016) emphasises that school leadership is key to achieving the desired results for the CS reform initiatives. However, since this type of school governance was new to the education system, principal' capacity development was a must. Therefore, the MoE conducted numerous pieces of training in the form of immersion programs for school principals (Pokhrel, 2015). Literature suggests that school principals are in a position to set the vision and mission of the school in collaboration with the faculty, motivate teachers, establish an

effective working relationship with the community and the parents, and allocate resources where there is a need for change or improvement in pedagogy and instruction, which collectively is known as organizational climate, as a result of which school and students' performance improves (Wang & Degol, 2015).

2. Intelligent accountability mechanisms

Accountability can mean different things to different people. Thus, there is a risk of accountability being equated with compliance and not an intelligent and creative use of autonomy. The overall purpose of granting school autonomy and building leadership capacity to function in their new roles is to facilitate School-Based Management ([SMB], Arica, et al., 2010). SMB consists of two components: autonomy and accountability which complement each other to enhance the operational and pedagogical competence of the schools. With sufficient operational autonomy to manage their financial and human resources, school becomes accountable for their student's success and to the stakeholders, which in turn increase the probability of increased student learning (Arica, et al.., 2010).

The operational guidelines for CS (MoE, 2016) states numerous accountability measures put in place. Financial accountability, delivery and performance accountability, and public accountability are some of the broad accountability measures specified in the document. To ensure that schools are held accountable, each CS is to undergo a full independent review in the final year of delivery. Performance target, school programmes, priorities, and reports were to be made public through school websites, and undertake ongoing assessments and share the report with the SMB and Ministry.

3. An empowered mindset among the teaching fraternity and school administration

Schools prior to being granted autonomy had to rely on the MoE and the district administration for funding, professional development opportunities, and procurement of materials for the teaching and learning process, among others. The funding proposal, dependence on professional development opportunities, and central procurement and distribution of materials took time and often got delayed. With school autonomy, schools were directly provided with the funding and with the consent of the school management team, could use those funds at the school's discretion. The central guidelines for CS (MoE, 2016), states that the chief rationale for establishing CS was to empower the school to state its strategic direction, determine priorities, and exercise control over its resources with the ultimate goal of improving student performance.

With autonomy granted to the CS, contextually relevant professional development for the faculty was conducted by the schools. This was important because, with financial autonomy, the school could identify the professional development needs of their teachers, and recruit relevant professionals or firms to develop, design, and deliver the professional development. Similarly, with autonomy schools could make their own decisions in consultation with the SMB and implement reforms in the schools, which empowered them.

4. Collaboration between and within schools

Considering that the CS reform initiative was implemented to improve student learning in the schools, the collaboration between and within the school appears to be an aspect of school improvement. Collaboration within and between schools can be broadly categorised into three components: sharing practices, sharing facilities/equipment, and sharing pupils (Atkinson, et al., 2007). According to Atkinson, et al. (2007), sharing practices include collaborative activities

such as professional development, sharing information, provision of advice or support, joint planning and school development, sharing staff, and joint activities and or projects. In terms of sharing facilities or equipment, typical collaboration occurs when curriculum facilities are shared, the creation of joint facilities, and joint procurement of equipment. Pupil sharing occurred in two significant ways: accessing courses in partner schools, and making a contribution to the partner schools (Atkinson, et al., 2007).

In Bhutanese education, CS were large schools catering to students from class pre-primary to class XII. Usually, a primary or a lower school and a higher secondary were clubbed together. Thus, the primary or the lower secondary schools became the sister schools of CS. It was well known that the sister schools also benefitted from the CS initiative. For example, when CS procured teaching-learning materials and equipment, sister schools also received them. In the similar manner, when professional development programmes were organised for the CS, the teachers from the sister schools were also given the opportunity to attend the programme.

5. A focus on instructional quality

As stated in the earlier sections, the primary rationale for implementing the CS reform initiatives was to improve student outcomes by granting autonomy to the schools, which was expected to result in greater accountability and empowerment. Although there were issues related to equity between a CS and a non-CS, especially in terms of the availability of teaching-learning equipment, such as television sets, projectors, printing materials, and others, these materials when used for the teaching-learning process could potentially have influenced student outcomes.

In a review of the CS initiative by the MoE (2016a), it was found that more than three-quarters of the teacher participants agreed that the CS budget was spent on teacher professional

development programs, besides the ones conducted through school, cluster, district, and national based in-service programmes. This indicates that CS was committed to improving the pedagogical and the classroom environment to maximise student learning. Along the same lines, the MoE (2016a) also reported that the majority of the schools had personalised learning experiences planned for both high and low-achieving students.

6. Capacity and support mechanisms from central bodies

While schools were granted autonomy, especially in terms of finance and governance, schools should be supported by the central bodies. According to Hamilton Associates (2105), principals should be supported by the central governing bodies in ensuring that schools exercise autonomy in such a way that it empowers the principals and teachers, develop leadership and the school's capacity to effectively design, monitor, evaluate, and implement reforms within the school with the ultimate goal of improving student outcomes. To strengthen principal's leadership capabilities, the MoE organised immersion programs for the CS principals and visited schools in India. The Scindia School (n.d.) was one of the host schools for the immersion programs. As reported on their school website, principals' capacity development during the immersion programme focused on leadership and management of the residential school, student care and support, academic excellence, and most notably inclusive education for special education needs children. Needless to say, CS principals were provided with ample opportunities to make the CS reform initiative take hold. Besides the immersion program for the school leaders, teachers of the CS were also invited to participate in the cluster district and national-based In-service programmes by relevant agencies.

Research gap and questions

The primary intention of the government to start central schools was a response to a strategic school-based reform programme to provide quality education and improve students' academic achievement. Granting school autonomy and empowering schools to set their own strategic directions were supposed to improve students' performance. However, research about the impact of CS reform initiative on the academic performance of the students have not been conducted. This research attempted to determine if students' academic performance improved as a result of the implementation of CS. The following hypothesis guided the study:

H_1: Students academic performance increased as the CS matured over the years.

H_2: There is no significant differences between the implementation of CS and students' academic performance.

Method

BCSEA results for four years, 2016, 2017, 2018, and 2020 was used as the primary data. The mean marks obtained by the students were calculated for each of the students. Considerations were not made for the elective subjects that the students took. Both descriptive and inferential statistics were used to analyse the data.

Data analysis

To determine if the academic performance increased as a result of the implementation of CS, the mean marks obtained by the students were calculated. To compare the results the descriptive results were juxtaposed against the year in which the students attended the BCSEA examinations.

The results are shown in Table 1. Further to compute if there were significant differences in the mean scores of the target year, analysis of variance (ANOVA) was computed for the mean marks.

Results

Results from Table 1 suggest that in comparison to the base year, 2016 (M = 56.06, SD = 7.84), the students' performance decreased in 2017 (M = 54.71, SD = 8.49). However, there were improvements in 2018 (M = 58.25, SD = 9.65) and 2020 (M = 64.45, SD = 9.47). This indicates that except for 2017, the results of the students in 2018 and 2020 improved compared to students' performance in 2016.

Table 1

Descriptive results

	2016	*2017*	*2018*	*2020*
Mean	56.06	54.71	58.25	64.45
Median	55.67	53.33	58.00	62.33
Mode	50.17	51.17	65.33	59.83
St Dev	7.84	8.49	9.65	9.47
Range	33.50	43.17	70.00	50.00
Count	108	94	95	70

To determine the association between the mean marks obtained, correlation coefficients were computed and the results obtained are provided in Table 2. The correlation between the average marks of 2016 revealed significant weak positive correlation with 2017 and 2018 average marks. The average marks of 2017 were strongly correlated with the 2018 marks, as shown in Table 2.

Table 2

Correlation coefficients

	2016	2017	2018	2020
2016	1			
2017	.294**	1		
2018	.277**	.970**	1	
2020	.095	.028	.065	1

**. Correlation is significant at the 0.01 level (2-tailed).

Analysis of variance (ANOVA) was conducted with the mean marks obtained by the students in the four years. The results obtained are shown in Table 3. Results indicate that there were no significant differences in students' performance of 2017 cohort, when compared to the performance of the 2016 cohort. Similar results were obtained for 2018 and 2016 cohort. However, when the results of 2020 cohort was compared to 2016 cohort, significant differences were obtained. The mean marks of 2020 cohort was greater (M = 64.45, SD = 9.47) was significantly greater than that of 2016 cohort (M = 56.06, SD = 7.84). The differences were significant at F (57, 12) = 2.54, p = *.04.*

Table 3

ANOVA results for multiple years compared to base year

		Sum of Squares	*df*	Mean Square	*F*	*p*
2017	Between Groups	6006.40	76	79.032	1.92	.066
	Within Groups	701.07	17	41.239		
	Total	6707.47	93			
2018	Between Groups	7395.60	76	97.311	1.30	.276
	Within Groups	1353.95	18	75.220		
	Total	8749.56	94			
2020	Between Groups	5711.45	57	100.201	2.54	.040
	Within Groups	473.48	12	39.457		
	Total	6184.93	69			

In a similar manner, the results of 2018 cohort and 2020 cohort was compared with the results of the 2017 cohort. As evident from table 4, the mean marks of the 2018 cohort were significantly different from the 2017 cohort. The 2018 (*M* = 58.25, *SD* = 9.65*)* performed significantly better than the 2017 cohort (*M* = 54.71, *SD* = 8.49*)*, at *F (67, 26)* = 41.29, *p<.001*.

Table 4

Differences between the 2018 and 2020 cohort compared to 2017 cohort

		SS	*df*	MS	*F*	*p*
2018	Between Groups	6645.44	67	99.19	41.29	.000
	Within Groups	62.45	26	2.40		
2020	Between Groups	4607.35	51	90.34	1.03	.494
	Within Groups	1577.58	18	87.64		

ANOVA results of 2020 cohort in comparison to the 2018 cohort did not reveal any significant differences.

Discussions

It is evident from the results that the students' mean performance, except for the 2017 cohort, improved in 2018 and 2020 comparison to the base year. Therefore, the first research hypothesis is rejected, since the student performance in 2017 plummeted compared to 2016. The second research hypothesis is also rejected since there are significant differences between the students' performance across the years. Students in the 2020 cohort performed significantly better than the 2016 cohort, and the 2018 cohort significantly performed better in comparison to the 2017 cohort.

School autonomy do influence students' academic achievement (Merkle, 2022; OECD, 2011). However, a number of factors within the school autonomy framework impact students' performance. For example, in a truly autonomous schools, principals are empowered to hire best

teachers and fire teachers, choose the curriculum, and invest in school teaching and learning infrastructure (OECD, 2011). The results of this research were mixed, in that there lacked consistency in the student's performance. Perhaps these variations in the school autonomy in the CS in Bhutan did not have the authority to select and recruit teachers and choose their own curriculum impacted students' consistent performance.

Conclusions

This study is to carry investigation into school autonomy and student performance. It is concluded that the academic performance of the students increased with the grant of autonomy. Moreover, the study concluded that school autonomy should be given to all the schools to increase efficiency and to avoid bureaucratic process.

Recommendations

School autonomy is a multi-dimensional construct. Although CS in Bhutan were provided with autonomy over school management and financial autonomy, this may not be sufficient to bring sustained improvement in student's performance. Therefore, school autonomy should also include the authority to hire and fire teachers, of course with the due process, and the flexibility to choose their own curriculum to support the national curriculum standards.

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