School management autonomy in Cambodia: A case study at new generation schools (NGS)

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## ABSTRACT

Autonomy is a crucial factor affecting the overall functioning of educational institutions, particularly in decision-making. In developing countries, schools have faced challenges in adopting autonomy; however, it is very useful for quality education. Cambodian schools also face challenges in achieving effective autonomy across key areas. Organizational and staff autonomy is restricted by limited local governance and hiring flexibility, while financial autonomy is hindered by insufficient funding and financial management skills. Academic autonomy is constrained by centralized curriculum requirements, limiting innovative, locally-responsive teaching approaches. This study investigates the extent of school management autonomy in New Generation Schools (NGS) in Cambodia and its impact on teaching quality. The research used a mixed-methods research design; data were collected from 235 secondary school teachers across four NGSs, representing both urban and rural settings, to capture diverse perspectives. A structured questionnaire was used to measure teachers' perceptions of autonomy across key dimensions and in-depth interviews with school principals. The results indicate that the NGS enjoys a high degree of autonomy, with the respondents rating organizational, financial, staff, and academic autonomy highly. This level of autonomy enables schools to implement management practices and educational programs tailored to their specific needs, thereby enhancing teaching quality. The findings suggest sustaining and furthering these autonomies can significantly improve academic outcomes. The study concludes that extending the NGS autonomy model to more schools could enhance educational outcomes nationwide.
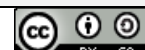
INTRODUCTION

School autonomy is recognized globally as a key component in educational reform, improving educational quality and accountability by enabling schools to make context-specific decisions (Boeskens et al., 2018; Hanushek et al., 2016; Sahlberg, 2021; Ydesen et al., 2022). Autonomy fosters innovation and responsiveness to local needs, especially in low-resource environments (Board; Sahlberg, 2021). It also promotes equity by allowing disadvantaged schools to allocate resources according to student needs, aligning with global education goals like SDG 4, which advocates for inclusive, equitable quality education (English & Carlsen, 2019).

Studying school autonomy is crucial due to its impact on governance, educational quality, equity, and leadership. Autonomy provides school leaders with flexibility in decision-making, which can improve governance (Hanushek et al., 2016). However, its effects vary by socio-economic context, particularly in settings where resources are scarce. In low-income settings, autonomy can exacerbate educational disparities if schools lack resources for effective decision-making (Bruns et al., 2019). Strong leadership and professional development are essential for successful autonomy (Leithwood et al., 2020). Moreover, balancing autonomy with accountability is critical to prevent inconsistent educational outcomes, particularly in regions

with weak governance structures (Börsch-Supan et al., 2018). Financial challenges in under-resourced schools call for equitable funding and financial management training (Leigh Pemberton & Loeprick, 2019). Previous research has largely focused on high-income countries, limiting insights into how autonomy operates in low- and middle-income countries (Hanushek et al., 2016). Additionally, the absence of longitudinal studies hinders understanding of the long-term impacts of autonomy on student outcomes and institutional performance (Leithwood et al., 2020).

The impact of autonomy on teachers—especially in relation to instructional practices, professional development, and job satisfaction—remains under-researched, with most studies concentrating on administrators (Lee & Nie, 2014; Talis, 2019). Furthermore, the equity implications in resource-poor schools, where marginalized students may be disproportionately disadvantaged by autonomy, are not fully explored (Bruns et al., 2019). Research also tends to focus on cognitive outcomes, such as test scores, often neglecting non-cognitive skills like creativity, critical thinking, and collaboration, which are vital for comprehensive student development. Scholars worldwide have examined school autonomy to explore its role in educational quality. Globally, school autonomy has been linked with reform (Duarte et al., 2016; Gao et al., 2018) and student performance (Ceballos-López & Sáiz-Linares, 2021; Huong & Phuong, 2020; Keddie et al., 2020). Paletta (2015) analyzed independent teachers' professional autonomy in school reform, while Lundström (2015) and Okay and Balçıkanlı (2021) studied how autonomy helps principals achieve high standards in pedagogy, organization, and school management. Ugarte et al. (2022) examined changes in school autonomy policy. Regionally, research has explored pedagogical use (Do & Mai, 2022), accountability (Heinrich, 2015), learner autonomy (Nguyễn & Ngô, 2016; Waluyo, 2018), and financial autonomy (Arcia et al., 2015; Da Costa), along with understanding learner autonomy (Duarte et al., 2016; Peek, 2016; Roe & Perkins, 2020; Sjödin, 2015). In Cambodia, Donaher and Wu (2020) studied the theory of change in new-generation school reform, while Bo (2021) explored how school autonomy improves teaching and learning quality. No and Heng (2015) investigated community involvement to enhance accountability and autonomy in Cambodian schools, while Da Wan et al. (2018) examined the relationship between autonomy and accountability reforms. This paper focuses on the implementation of school autonomy in Cambodia's New Generation Schools (NGS) at the secondary level, analyzing four dimensions—organizational, financial, staff, and academic management autonomy—based on the framework proposed by Pruvot and Estermann (2017).

As decentralization becomes more prevalent globally, particularly in resource-constrained environments, understanding how autonomy can be effectively implemented is critical (Caldwell, 2016; Mason et al., 2016). This research addresses equity concerns, as wealthier schools tend to benefit more from autonomy than disadvantaged ones (Bruns et al., 2019). It also examines the importance of autonomy in fostering 21st-century skills, such as creativity (Schleicher, 2018), and explores the long-term sustainability of autonomy reforms (Leithwood et al., 2020). Additionally, the study investigates the role of autonomy in driving digital learning models (Redecker, 2017; Sahlberg, 2021) and balancing autonomy with accountability (Al-Samarrai et al., 2019).

The Cambodian Context and the New Generation School (NGS) Model

In Cambodia, school autonomy is a strategy aimed at improving educational quality and access within a post-conflict setting. Cambodia's education system includes six years of primary education, three years of lower secondary, and three years of upper secondary education. This structure, introduced in the early 1990s, reflects efforts to modernize and standardize national education (MoEYS, 2015a). Since the 2000s, the Royal Government of Cambodia (RGoC),

through the Ministry of Education, Youth, and Sport (MoEYS), has focused on ensuring that all children complete at least nine years of basic education, as highlighted in the Pentagonal Strategy Phase I and the National Strategic Development Plan (NSDP) 2019–2023 (MoP, 2018, 2023). Cambodia's commitment to SDG 4 demonstrates its dedication to achieving inclusive, equitable, and high-quality education (CoM, 2018).

In recent years, Cambodia has made significant progress, with reforms aimed at decentralizing school management and promoting autonomy. Since 2013, the MoEYS has pursued the New Generation School (NGS) initiative, launched in 2015 as part of a second wave of reforms focused on school-based management and accountability. The NGS model was first implemented at Preah Sisowath High School, emphasizing semi-autonomous governance within public education (HangChuon, 2020; MoEYS, 2015b, 2018). By 2024, the NGS had expanded to 11 schools, including primary and secondary levels, as well as the New Generation Pedagogical Research Center (MoEYS, 2024a, 2024b).

The NGS model grants schools increased autonomy, particularly in STEM education, by allowing for specialized curricula and innovative teaching approaches within a national framework. However, the Cambodian education system remains largely centralized, with the MoEYS overseeing consistency and quality across schools. Although this ensures uniform standards, it also limits flexibility in addressing local needs, as financial and staffing decisions are often controlled at the central level (Kitamura et al., 2016; MoEYS, 2019). These constraints highlight both the potential and limitations of school autonomy in Cambodia, as schools within the NGS model can innovate but must adhere to centralized policies and funding restrictions.

This paper analyzes teachers' perceptions of school autonomy at upper secondary schools, and the NGS was selected as the case study. The paper aims to assess the levels of (1) organizational autonomy, (2) financial autonomy, (3) staff autonomy, and (4) academic autonomy. The research adopted a concept of school autonomy proposed by Pruvot and Estermann (2017), which includes four key dimensions: organizational, financial, staff, and academic autonomy. While organizational autonomy involves decisions about internal management structures, policies, and daily operations, financial autonomy grants control over budgets and financial resources. Staff autonomy provides authority over hiring, assigning, and managing staff. Academic autonomy allows control over curriculum design, teaching methods, assessment practices, and educational programs, promoting innovative pedagogy tailored to student needs.

Conceptualize Autonomy at secondary school in Cambodia

Implementing school autonomy is crucial for modernizing the education sector in developing countries like Cambodia; all the key actors, including principals, teachers, and stakeholders, are collaboratively involved in promoting students' performance (Tep & Sieng, 2023). In particular, autonomy-supportive teaching environments foster greater student engagement, motivation, and self-regulation, key components of academic success (Ma, 2021; Núñez & León, 2015). By empowering educators and school leaders with autonomy, educational systems can create more dynamic and responsive learning environments that enhance overall educational quality (Khudorozhkov et al., 2022). Schools with autonomy tend to experience higher student achievement, better school climates, and increased community involvement, as educators feel more ownership and accountability, which fosters a culture of continuous improvement and commitment to excellence (Estévez et al., 2021). School autonomy can be defined as the decentralization of decision-making authority to the school level, allowing schools flexibility in governance, staffing, curricula, and financial management (Pruvot & Estermann, 2017). The concept of autonomy in schools is typically divided into four main dimensions:

Organizational autonomy empowers schools to make internal management decisions, set policies, and govern day-to-day operations independently. This dimension enables schools to customize their administrative practices according to their specific contexts, increasing their efficiency and responsiveness to changing educational demands. By managing their internal policies, schools can implement structures that promote active involvement from teachers, parents, and stakeholders, fostering a collaborative school culture (Wermke & Salokangas, 2015). Schools that exercise organizational autonomy often experience improvements in adaptability, which is particularly valuable in dynamic educational environments (Seashore Louis & Lee, 2016). Organizational autonomy has also been linked to higher satisfaction among educators, as it allows schools to implement governance practices aligned with their mission and goals (Truong & Hallinger, 2017).

Financial autonomy provides schools with the authority to manage budgeting and allocate resources, allowing for investments that directly enhance educational quality, such as teacher training, infrastructure improvements, and procurement of educational materials (Balakrishnan et al., 2015). Schools with financial autonomy are better positioned to prioritize spending on areas most relevant to their students' needs, which can lead to a more effective and personalized educational environment. Financial autonomy also supports schools in addressing specific challenges promptly, which is essential for improving learning outcomes in diverse socio-economic contexts (Gustafsson & Blömeke, 2018). However, for financial autonomy to be effective, schools require adequate funding and training in budget management to ensure resources are optimally utilized (Thomas et al., 2018).

Staff autonomy gives schools the freedom to make decisions on hiring, staffing, and personnel management. Schools with greater staff autonomy can select educators whose philosophies align with their vision, fostering a cohesive and motivated team. This control over staffing also enables schools to implement tailored professional development programs, which improve teacher retention, job satisfaction, and overall effectiveness in teaching (Balakrishnan et al., 2015; Manzano Vázquez, 2018). Recent studies suggest that staff autonomy is particularly valuable for addressing teacher shortages and improving school climate, as it empowers schools to recruit and retain teachers who are committed to their specific educational goals (Tschannen-Moran & Gareis, 2015).

Academic autonomy allows schools to have control over curriculum design, instructional methods, and assessment practices, facilitating the introduction of innovative and customized pedagogies that cater to the diverse needs of students (Cevikbas & Kaiser, 2022; Mausethagen & Mølstad, 2015; Terrell Shockley et al., 2024; Viseu et al., 2016). Schools with academic autonomy are better able to create learning environments that encourage student engagement, foster critical thinking, and promote self-directed learning. This dimension is crucial for meeting the demands of the 21st-century education landscape, where personalized learning and adaptability are increasingly important. Recent research indicates that academic autonomy is also associated with increased teacher agency and job satisfaction, as educators have the freedom to adapt teaching strategies to optimize student outcomes (Lee & Nie, 2014; Watson-Vandiver & Wiggan, 2018; Worth & Van den Brande, 2020).

These four dimensions—organizational, financial, staff, and academic autonomy—provide a holistic framework for understanding how autonomy drives school effectiveness and fosters a responsive, innovative educational environment. For school autonomy to succeed, however, schools need a supportive policy environment that offers resources, ensures equity, and maintains accountability. Such structures enable school-level decision-making to align with national educational goals, balancing autonomy with accountability to ensure that it contributes to both innovation and quality (Mausethagen & Mølstad, 2015; Terrell Shockley et al., 2024; Viseu et al., 2016; Wermke & Salokangas, 2015).
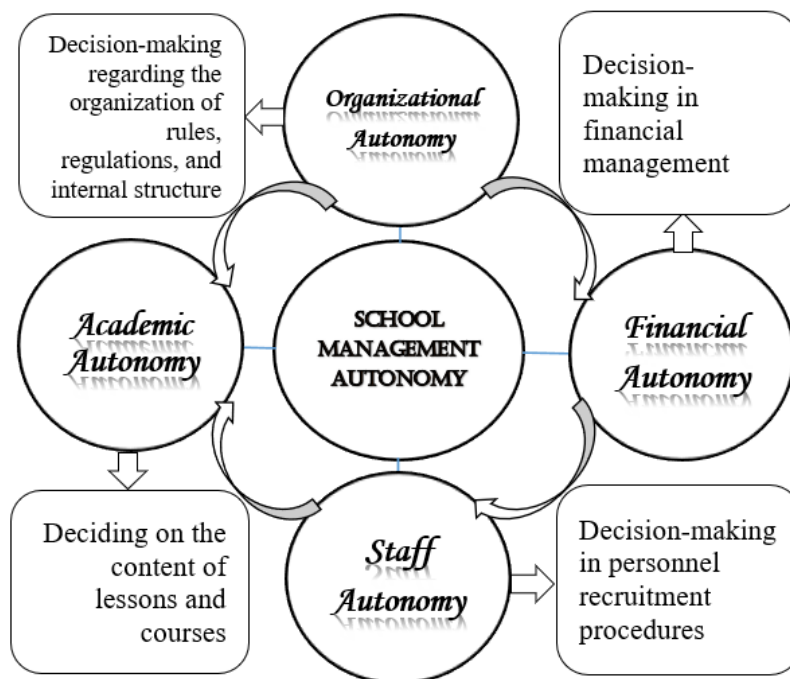
Adapted from Pruvot and Estermann (2017)
Figure 1. Conceptualize autonomy at upper secondary schools in Cambodia

To analyze autonomy at the NGS in Cambodia, the four dimensions introduced by Pruvot and Estermann (2017) have been adopted; they include: (1) organizational autonomy: decision-making regarding the organization of rules, regulations, and internal structure; (2) financial autonomy: decision-making in financial management; (3) staff autonomy: decision-making in personnel recruitment procedures; and (4) academic autonomy: deciding on the content of lessons and courses (Figure 1).

RESEARCH METHOD

This study employs a mixed-methods research design, combining both quantitative and qualitative approaches to gather comprehensive data on school autonomy within the context of New Generation Schools (NGS) in Cambodia. The mixed-methods approach was chosen to capture both broad patterns and in-depth insights on the topic. Quantitative data provides measurable trends on autonomy, while qualitative data enriches the findings with a contextual understanding of teachers' experiences and perspectives. This dual approach enhances the study's validity by ensuring that findings are statistically robust and grounded in real-world contexts, making them particularly relevant for educational policy-making. Mixed-methods research is a well-established approach in social science, especially in educational studies, where it allows for triangulation and enhances the credibility of findings (Creswell & Clark, 2017).

The study, conducted from May to September 2023, collected primary data from NGS teachers in upper secondary schools. In representing NGS teachers from diverse regions in Cambodia, a purposive sampling method was used to ensure a mix of urban and rural perspectives. At the time of the study, six NGS schools were operating nationwide: two in Phnom Penh (Preah Sisowath and Prek Leap High Schools), two in Kampong Cham Province (Hun Sen Kampong Cham and Peam Chikorng High Schools), one in Kandal Province (Prek Anchanh High School), and one in Svay Rieng Province (Kok Pring High School). One school from each province was purposefully selected to provide a representative sample of NGS in

Cambodia. Overall, 235 NGS teachers were invited for the interview deriving from 80 teachers at Preah Sisovath High School, 75 teachers at Prek Anchanh High School, 47 teachers at Peam Chikorng High School, and 33 teachers at Kok Pring High School (see Table 1). The sample was diverse in teaching experience, age, and gender, providing a broad range of perspectives on the autonomy granted to NGS teachers in managing curriculum and school operations at the upper-secondary level.

Table 1. Population and sample size.

No.	Capital/Provinces	NGS	Population	Sample Size
1.	Phnom Penh	Preah Sisovath High School	29	80
2.	Kandal	Prek Anchanh High School	114	75
3.	Kampong Cham	Peam Chikorng High School	56	47
4.	Svay Rieng	Kok Pring High School	47	33
	Overall			235

A structured questionnaire was selected as the primary tool for quantitative data collection in this study due to its effectiveness in systematically gathering standardized data from a large sample. This approach is particularly well-suited for capturing teachers' perceptions of school autonomy, enabling the collection of responses that are statistically analyzable. Using a questionnaire facilitates clear comparisons among teachers' responses across different New Generation Schools (NGSs) and supports the exploration of variations in perceptions of autonomy by school and specific dimensions, such as decision-making on organizational rules, financial management, and curriculum. Additionally, the structured format ensures efficiency, allowing data collection within a limited timeframe (approximately 40 minutes per interview) while maintaining consistency across respondents. These questionnaires were administered through face-to-face interviews with teachers, lasting approximately 40 minutes each. It focused on four key dimensions of autonomy: organizational rules and structures, financial management, personnel recruitment, and curriculum content. Quantitative responses were analyzed using ANOVA for inter-school comparisons and WAI to evaluate and rank perceptions within these dimensions.

To analyze the data, the Weighted Average Index (WAI) was applied to rate teachers' perceptions of autonomy across the four key dimensions. Responses were recorded and analyzed using SPSS software, with each response assigned a weight to quantify the level of autonomy perceived: 'very high' was assigned the highest weight of 1.00 ($5/5 = 1.00$), 'high' a weight of 0.80 ($4/5 = 0.80$), 'moderate' a weight of 0.60 ($3/5 = 0.60$), 'low' a weight of 0.40 ($2/5 = 0.40$), and 'very low' a weight of 0.20 ($1/5 = 0.20$). The overall assessment (OA) of WAI was calculated based on the mean scores and interpreted as follows: (1) Very High (VH) = 0.81–1.00, (2) High (H) = 0.61–0.80, (3) Moderate (M) = 0.41–0.60, (4) Low (L) = 0.21–0.40, and (5) Very Low (VL) = 0.00–0.20 (DeVellis & Thorpe, 2021; Pallant, 2020). This rating system provided a structured approach to quantify and interpret teachers' autonomy perceptions in each dimension, facilitating meaningful comparisons across different responses. This methodological approach offers a robust foundation for examining teachers' perceptions of autonomy within the NGS framework, supporting a thorough analysis of autonomy variations across different school dimensions and contexts.

This study has a few key limitations. First, as New Generation Schools (NGSs) operate as public schools under the MoEYS, certain information required verification from MoEYS experts. Additionally, NGSs are supported by the KAPE organization, and insights from KAPE experts would have enriched the findings. However, due to time constraints, it was not possible

to conduct interviews with representatives from either MoEYS or KAPE. This lack of expert input may limit the depth of understanding regarding policy and implementation nuances within NGSs. Future studies could address this gap by incorporating perspectives from these key stakeholders.

FINDINGS AND DISCUSSION

Findings

Schools' Involvements in Organizational Autonomy

Teachers were asked, "To what degree is your school involved in applying for internal regulations at school?" (Table 2). Overall, the teachers assessed that their schools were highly involved in implementing internal regulations at their schools. They evaluated a high degree of satisfaction regarding (1) the establishment of a school management committee with the participation of authority, parents, and the community, (2) sharing roles and responsibilities, (3) formulation of internal regulation, (4) implementation of internal regulation according to the actual misconduct of the staff, and (5) implementation of internal regulation based on the actual misconduct of students. At the same time, they rated a moderate degree of their involvement regarding (1) the ability to make the appointment of the management team, (2) the decision of school management committees in internal regulation, and (3) the involvement of the teachers in deciding the internal regulations.

Table 2. Teachers' perception of schools' involvement in organizational autonomy.

Attribute	Preah Sisovath (n=80)		Prek Anchanh (n=75)		Peam Chikorng (n=47)		Kok Pring (n=33)		Overall (n=235)		P-value
	WAI	OA	WAI	OA	WAI	OA	WAI	OA	WAI	OA	
My school can decide on the appointment of the management team (principal, deputy director).	0.46	M	0.43	M	0.42	M	0.45	M	0.44	M	0.868
My school may decide to establish a school management committee with the participation of authority, parents, and the community.	0.79	H	0.75	H	0.75	H	0.76	H	0.76	H	0.014*
My school can allocate the components of task responsibilities (e.g., technical work, administration, youth, discipline).	0.78	H	0.73	H	0.71	H	0.75	H	0.74	H	0.573
My school can decide on its internal regulation.	0.68	H	0.66	H	0.64	H	0.67	H	0.66	H	0.911
School management committees may be involved in deciding the school's internal regulations.	0.60	M	0.57	M	0.56	M	0.58	M	0.58	M	0.177
The teachers in my school can be involved in deciding the internal regulations.	0.58	M	0.55	M	0.54	M	0.57	M	0.56	M	0.165
My school can apply its level of internal regulation according to the actual misconduct of the staff.	0.73	H	0.70	H	0.69	H	0.72	H	0.71	H	0.020*
My school can apply its level of internal regulation based on the actual misconduct of students.	0.73	H	0.69	H	0.68	H	0.71	H	0.70	H	0.028*
Overall	0.67	H	0.64	H	0.63	H	0.65	H	0.65	H	0.000***

Notes: OA = Overall assessment. WAI = weight average index measured on a five-point scale [Very Low (VL) = 0.00–0.20, Low (L) = 0.21–0.40, Moderate (M) = 0.41–0.60, High (H) = 0.61–0.80, Very High (VH) = 0.81–1.00].

*Significance at the 0.05 level.

** Very Significant at the 0.01 level.
*** Perfectly Significant at the 0.000 level
Overall = the average score of all the above scores.

ANOVA confirms that teachers at the four study schools shared significantly different degrees of involvement regarding (1) the establishment of the school management committee with the participation of authority, parents, and the community (P-value=0.012), (2) the implementation of internal regulation according to the actual misconduct of the staff (P-value=0.020) and (3) implementation of internal regulation based on the actual misconduct of students (P-value=0.028). Comparatively, Preah Sisovath Upper Secondary School teachers assessed a higher involvement satisfaction regarding organizational autonomy performance than Kok Pring Upper Secondary School, Prek Anhchanh Upper Secondary School, and Peam Chikorng Upper Secondary School, respectively.

The NGS exhibits several attributes of organizational autonomy, such as forming school management committees through local elections and allocating task responsibilities based on individual staff capacity, assessed by a staff capacity assessment committee during an annual appraisal meeting. They also implement professional development programs, including a 10-day training for new staff and additional training when new projects or methods are introduced. They also organize supplementary learning sessions for slow learners every Saturday to ensure equitable student learning outcomes. However, some issues affected this autonomy. For example, schools have limited decision-making power in appointing leadership positions, as the final authority rests with the MoEYS and the Capital/Provincial Governor. The influence of school management committees and teachers on internal regulations is limited, with final decisions made by the school board and principal. Resource constraints can hinder the effective exercise of autonomy, especially in professional development and student support programs. Additionally, varying levels of community involvement and support, as well as policy and regulatory constraints, can impact school management and innovation effectiveness. Addressing these issues is crucial for the NGS to fully benefit from organizational autonomy, leading to improved school performance and educational outcomes.

Schools' involvement in financial management autonomy

Teachers were asked, "To what degree is your school involved in the implementation of managing and allocating funds at school?" (Table 3). The teachers rated high school involvement as satisfying with implementing school funds management. They assessed a high degree of their schools' participation in (1) establishment of the school fund, (2) fund allocation in response to the specific needs of the school, (3) organization of meetings on income and expenditure with a record of stakeholders, and (4) dissemination of the budget transparency to stakeholders. At the same time, they rated a moderate degree of their schools' involvement in (1) preparing a school budget plan with stakeholders, (2) an annual budget plan based on the number of students, and (3) my school may decide to prepare a budget report approved by the school board and the school management committee. ANOVA confirms that teachers at the four study schools shared significantly different perceptions regarding (1) my school can decide to create a school fund (P-value=0.002), (2) the allocation of funds in my school responds to the specific needs of the school (P-value=0.003) and (3) my school can decide to disseminate the budget transparency to stakeholders. (P-value=0.042). Comparatively, Preah Sisovath Upper Secondary School had better financial autonomy performance than Kok Pring Upper Secondary School, Prek Anhchanh Upper Secondary School, and Peam Chikorng Upper Secondary School, respectively.

According to interviews with principals, Preah Sisowath Upper Secondary School has established a committee for managing and utilizing funds and sub-committees to monitor expenditures. The school has implemented clear procedures for spending, holding quarterly meetings to communicate income and expenses. For expenses exceeding 4 million riels, immediate expenditure records can be arranged through the relevant committee; however, for amounts exceeding 4 million riels, committee approval is required, and for amounts over $5,000,

a procurement process must be conducted. The school receives between 80% and 90% from the communities and parents, while only 10% and 20% come from the MoEYS annually. On average, each student contributes $400–$500 per year. Furthermore, the school exempts payments for 5–10% of students from low-income families and plans to use 100% of parental support funds in future years to conserve state funds [KII-2-PP].

Table 2. Teachers' perception of schools' involvement in financial autonomy.

Attribute	Preah Sisovath (n=80)		Prek Anchanh (n=75)		Peam Chikorng (n=47)		Kok Pring (n=33)		Overall (n=235)		P-value
	WAI	OA	WAI	OA	WAI	OA	WAI	OA	WAI	OA	
My school can decide to create a school fund.	0.80	H	0.73	H	0.70	H	0.78	H	0.75	H	*0.002**
My school can decide on preparing a school budget plan with stakeholders (e.g., the principal, teachers, authorities, parents, and community representatives).	0.58	M	0.52	M	0.49	M	0.55	M	0.54	M	0.086
My school's annual budget plan is based on the number of students.	0.60	M	0.54	M	0.51	M	0.56	M	0.56	M	0.115
Allocation of funds in my school responds to the school's specific needs (e.g., purchase of materials, study materials, capacity development, improvement of the environment).	0.77	H	0.70	H	0.68	H	0.73	H	0.72	H	*0.003**
My school can decide to hold a meeting on income and expenditure with a record of stakeholders (e.g., principal, teachers, authorities, community representatives).	0.77	H	0.70	H	0.68	H	0.73	H	0.72	H	0.067
My school can decide to disseminate the budget transparency to stakeholders.	0.79	H	0.72	H	0.69	H	0.76	H	0.74	H	*0.042*
My school may decide to prepare a budget report approved by the school board and the school management committee.	0.58	M	0.50	M	0.50	M	0.53	M	0.53	M	0.054
Overall	0.70	H	0.63	H	0.61	H	0.66	H	0.65	H	*0.004**

Notes: OA = Overall assessment. WAI = weight average index measured on a five-point scale [Very Low (VL) = 0.00–0.20, Low (L) = 0.21–0.40, Moderate (M) = 0.41–0.60, High (H) = 0.61–0.80, Very High (VH) = 0.81–1.00].

*Significance at the 0.05 level.

** Very Significant at the 0.01 level.

*** Perfectly Significant at the 0.000 level

Overall = the average score of all the above scores.

Financial autonomy at the NGS refers to these schools' control over their financial resources, including budgeting, revenue generation, and spending decisions. This autonomy was evidenced by decentralized budget management, which allows the NGS to allocate resources based on their specific needs and priorities. Schools could generate income through fees, donations, and partnerships to fund activities beyond government support. The NGS also had the flexibility to reallocate funds between budget categories, enabling them to adapt to changing circumstances and support innovative educational models. However, financial autonomy also presents challenges. Inconsistent or unpredictable funding can affect long-term planning and resource allocation, potentially creating disparities between the NGS and regular schools. Capacity and accountability concerns arise as financial autonomy requires strong management skills and transparent systems to prevent mismanagement or misuse of funds. The pressure to generate additional revenue may lead to a focus on income-generating activities at the expense of educational goals, and disparities in financial autonomy between schools can exacerbate inequalities within the education system, with some schools better positioned to exercise this autonomy effectively.

Schools' involvement in staff management autonomy

Teachers were asked, "To what degree is your school involved in operating personnel recruitment at school?" (Table 3). Overall, the teachers assessed that schools were highly involved in implementing school personnel recruitment. They evaluated a high degree of their schools' involvement in (1) staff nomination, according to the actual need, (2) selection of contract teachers, and (3) the appointment of teachers in available positions. At the same time, they rated a moderate degree of their schools' involvement: (1) my plan development to recruit the needs of specialized teachers, (2) the participation of the school board to evaluate the selection of contract teachers, and (3) the decision of School Management Committee on the appointment of teachers in any position with the approval of the school board. ANOVA confirms that teachers at the four study schools shared significantly different perceptions regarding (1) staff nomination, according to the actual need (P-value=0.049), and (2) selection of contract teachers (P-value=0.038). Comparatively, Preah Sisovath Upper Secondary School performed better regarding staff management autonomy than Kok Pring Upper Secondary School, Prek Anhchanh Upper Secondary School, and Peam Chikorng Upper Secondary School, respectively.

The interviews show that Preah Sisowath Upper Secondary School had the authority to recruit teachers based on specific subject needs. The school enjoyed more autonomy than others, conducting evaluations and selections at the school level. The recruitment process involved two stages: interviews and teaching demonstrations. State-employed and contract teachers could be selected; the school had contract teachers for three years. State teachers receive additional support from 200 US dollars and above, while contract teachers receive $300 monthly. An end-of-year performance evaluation committee uses a three-level grading system: A, B, and C to evaluate teachers. The school can terminate a teacher's contract if they are deemed uninterested or lack a development plan, allowing them to return to their previous position or seek new employment [KII-2-PP].

Staff autonomy at the NGS in Cambodia refers to the schools' control over staffing decisions, such as hiring, professional development, and performance evaluation. Evidence of this autonomy includes the ability to hire teachers and staff directly, which allows the NGS to select candidates who align with their educational goals and supports a merit-based hiring process. This autonomy also enables schools to design tailored professional development programs that address specific staff needs, fostering continuous improvement and collaboration. Additionally, the NGS could implement customized performance evaluation systems focused on student outcomes and professional growth. However, staff autonomy presents challenges. Schools may struggle to attract and retain qualified educators, especially in remote areas, affecting the quality of education. The effective exercise of autonomy requires strong leadership and management skills, which may not be consistent across all the NGS, leading to potential inconsistencies in staffing decisions. The lack of standardized procedures can result in varied staff quality and performance across schools. Moreover, autonomy can increase the workload and pressure on teachers and administrators, potentially leading to burnout and job dissatisfaction. Disparities in the level of autonomy among the NGS can create inequities in educational quality, with some schools better equipped to exercise autonomy effectively than others, potentially widening the gap in academic quality and access between the NGS and regular public schools.

Table 3. Teachers' perception of schools' involvement in stuffing autonomy.

Attribute	Preah Sisovath (n=80)		Prek Anchanh (n=75)		Peam Chikorng (n=47)		Kok Pring (n=33)		Overall (n=235)		P-value
	WAI	OA	WAI	OA	WAI	OA	WAI	OA	WAI	OA	
My school can propose staff according to the actual need (e.g., teachers, accountants, librarians, secretaries, etc.).	0.77	H	0.72	H	0.73	H	0.75	H	0.75	H	*0.049**
My school can decide to plan the needs of specialized teachers.	0.56	M	0.48	M	0.50	M	0.54	M	0.52	M	0.277
My school can decide to evaluate the selection of contract teachers.	0.79	H	0.74	H	0.75	H	0.76	H	0.76	H	*0.038**
School boards may decide to participate in evaluating the selection of contract teachers.	0.54	M	0.50	M	0.50	M	0.51	M	0.51	M	0.377
My school can decide on the appointment of teachers in any position (e.g., technical team leader, council president, committee chairman, etc.).	0.77	H	0.73	H	0.74	H	0.75	H	0.75	H	0.084
The School Management Committee can decide on the appointment of teachers in any position with the school board's approval.	0.53	M	0.47	M	0.48	M	0.50	M	0.50	M	0.250
Overall	0.66	H	0.61	H	0.62	H	0.64	H	0.63	H	*0.035***

Notes: OA = Overall assessment. WAI = weight average index measured on a five-point scale [Very Low (VL) = 0.00–0.20, Low (L) = 0.21–0.40, Moderate (M) = 0.41–0.60, High (H) = 0.61–0.80, Very High (VH) = 0.81–1.00].

*Significance at the 0.05 level.

** Very Significant at the 0.01 level.

*** Perfectly Significant at the 0.000 level

Overall = the average score of all the above scores.

Schools' involvement in academic management autonomy

Teachers were asked, "To what degree are your schools involved in implementing the content of lessons and courses at school?" (Table 4). Overall, the teachers assessed that their schools were highly involved in implementing lessons and course content. They evaluated a high degree of schools' involvement in (1) the organization of additional lesson content beyond the prescribed content, (2) the offers of a pedagogy mentor program to improve teacher skills, and (3) offers of study clubs to improve slow learners. At the same time, they rated a moderate degree of their schools' involvement in (1) the participation of the school management in lesson content beyond the prescribed content and (2) the suggestion of the school board of additional courses. ANOVA confirms that teachers at the four study schools shared significantly different perceptions of their schools' involvement regarding (1) the organization of additional lesson content beyond the prescribed content (P-value=0.008) and (2) the offers of study clubs to improve slow learners (P-value=0.013). Comparatively, Preah Sisovath Upper Secondary School had better academic autonomy performance than Kok Pring Upper Secondary School, Prek Anhchanh Upper Secondary School, and Peam Chikorng Upper Secondary School, respectively.

According to interviews with principals, Preah Sisowath Upper Secondary School fully adapts the MoEYS's curriculum, supplementing it with international programs. Specifically, the school enhances the social science subjects and science, technology, engineering, and mathematics (STEM) education globally, using software from Japan and Singapore for math competitions, allowing students to study at an international standard. In English, the school supports three aspects: classroom learning, the Cam-Reading app, requiring students to read at least ten e-books, and activities like debates, public speaking, and the Great Book program. Overall, the curriculum aligns with the MoEYS's standards but is deepened and modernized with 21st-century technology. The school implements a flipped classroom model, increasing student engagement while reducing teacher-led activities. The school also plans enrollment, publicly announcing it to parents and guardians. Students must pass a competitive exam to enroll [KII-2-PP].

Table 4. Teachers' perceptions related to schools' involvement in deciding on the content of lessons and courses.

Attribute	Preah Sisovath (n=80)		Prek Anchanh (n=75)		Peam Chikorng (n=47)		Kok Pring (n=33)		Overall (n=235)		P-value
	WAI	OA	WAI	OA	WAI	OA	WAI	OA	WAI	OA	
My school can organize additional lesson content beyond the prescribed content (ex, excerpts from research articles, e-libraries, and international schools).	0.75	H	0.69	H	0.66	H	0.72	H	0.71	H	0.008**
School management committee can participate in lesson content beyond the prescribed content	0.60	M	0.57	M	0.56	M	0.59	M	0.58	M	0.114
My school can offer a pedagogy mentor program to improve teacher skills.	0.73	H	0.67	H	0.64	H	0.70	H	0.69	H	0.063
My school can offer a study club to improve slow learners.	0.78	H	0.73	H	0.70	H	0.75	H	0.74	H	0.013*
The school board can suggest additional courses to suggest improvements.	0.59	M	0.57	M	0.57	M	0.58	M	0.58	M	0.077
Overall	0.69	H	0.65	H	0.63	H	0.67	H	0.66	H	0.005**

Notes: OA = Overall assessment. WAI = weight average index measured on a five-point scale [Very Low (VL) = 0.00–0.20, Low (L) = 0.21–0.40, Moderate (M) = 0.41–0.60, High (H) = 0.61–0.80, Very High (VH) = 0.81–1.00].

*Significance at the 0.05 level.

** Very Significant at the 0.01 level.

*** Perfectly Significant at the 0.000 level

Overall = the average score of all the above scores.

Academic autonomy at the NGS in Cambodia refers to the degree of control schools have over curriculum design, teaching methods, and assessment strategies. Evidence of this autonomy includes the ability to adapt and enhance the national curriculum, allowing NGS to incorporate innovative teaching methods such as STEM-focused programs, project-based learning, and critical thinking exercises. Schools can also introduce additional subjects or courses that align with their educational goals, leading to improved student outcomes and more tailored learning experiences. The NGS could experiment with pedagogical approaches like flipped classrooms and problem-based learning to encourage student engagement and active learning. The flexibility to assess students through various methods beyond standard examinations allows for a more comprehensive evaluation of student abilities and progress. However, issues arise with the inconsistent implementation of academic autonomy across different NGSs, leading to disparities in educational quality. Some schools may lack the resources or expertise to fully utilize their academic autonomy, which can hinder the effectiveness of these initiatives. Additionally, balancing innovation with the requirements of the national curriculum can be challenging, as schools must ensure that students meet national standards while pursuing their unique educational goals.

Discussion

The study reveals that teachers highly evaluated their schools' involvement in promoting autonomy. Cambodia's NGSs are actively involved in implementing organizational, financial, staffing, and academic autonomy. The study's findings confirm that the autonomy framework within Cambodia's NGS initiative aligns with global educational practices that link school-level decision-making to enhanced academic outcomes (Ceballos-López & Sáiz-Linares, 2021; Duarte et al., 2016; Huong & Phuong, 2020). By granting schools greater control over organizational, financial, staffing, and academic decisions, the NGS model promotes a more adaptive, innovative educational environment. Schools with greater autonomy, like Preah Sisovath, have been able to implement programs that go beyond the standard curriculum, integrating international educational practices and fostering a culture of continuous improvement.

However, the study also highlights the challenges that come with autonomy, particularly in under-resourced schools. Disparities in financial and staffing autonomy between urban and rural schools indicate that without equitable support structures, autonomy risks widening the gap in educational quality.

The study's results are consistent with prior research, which emphasizes the importance of balancing autonomy with adequate support. Research by Hanushek et al. (2016); (Sahlberg, 2021) suggests that autonomy improves educational outcomes when schools are provided with the necessary resources and accountability mechanisms. The Cambodian experience demonstrates both the potential and limitations of autonomy. While autonomy has enabled NGS schools to innovate and adapt, its uneven implementation across different regions highlights the need for continued policy reforms that ensure equity in funding, staffing, and academic resources. Previous studies, such as those by Bruns et al. (2019); (Pruvot & Estermann, 2017), have similarly cautioned that autonomy alone is not a panacea for educational reform; it must be supported by adequate governance structures and resources.

Organizational Autonomy: The findings reveal that NGS schools demonstrate high levels of organizational autonomy, with significant involvement in creating and implementing internal regulations. Teachers reported satisfaction with their schools' engagement in forming management committees and structuring school governance. This level of involvement reflects models from countries like Singapore and New Zealand, where local governance has enhanced adaptability and responsiveness to local needs (Hanushek et al., 2016; Wermke & Salokangas, 2015). However, in Cambodia, school leadership appointments, especially for principals, remain centrally controlled by the Ministry of Education, Youth, and Sport (MoEYS), which limits the full realization of organizational autonomy. This hybrid model—where schools have decision-making power but are still subject to central oversight—echoes challenges noted by Leithwood et al. (2020), who found that more localized control over leadership appointments is crucial for tailoring school policies to specific contexts.

Financial Autonomy: NGS schools show notable engagement in financial autonomy, particularly in fundraising and resource allocation. Schools such as Preah Sisovath High School benefit from community and parental contributions, which fund infrastructure improvements and other school-specific needs. This mirrors financial autonomy models in countries like Thailand and Brazil, where community-based funding supplements state resources (Arcia et al., 2015; Da Costa). However, the study also highlights disparities between urban and rural schools. Rural schools struggle to raise sufficient funds, a challenge also identified by Bruns et al. (2019), arguing that financial autonomy can exacerbate inequalities if not supported by equitable funding policies. The funding inconsistency across NGS schools reflects international concerns, where urban schools can leverage local community support, while schools in lower-income or rural areas face significant challenges. To ensure all schools benefit from financial autonomy, more robust financial management training and equitable government funding are needed.

Staffing Autonomy: NGS schools also enjoy greater control over staffing decisions, such as recruitment, development, and performance evaluation. Schools can hire contract teachers, tailor professional development programs, and implement performance-based evaluations. This autonomy has been linked to higher teacher satisfaction and alignment with school goals, as found by Tschannen-Moran and Gareis (2015), who highlight that staff autonomy supports teacher retention and job satisfaction by allowing schools to recruit teachers who align with their educational vision. However, the study also reveals challenges in attracting qualified teachers to rural schools. This aligns with Lundström (2015), who noted that while staffing autonomy empowers schools, disparities in teacher quality may arise if structural support is lacking. Staffing autonomy is most effective when schools have access to a pool of qualified candidates and resources to support ongoing professional development, which is not always the case in less-resourced areas.

Academic Autonomy: The study shows that NGS schools exercise high levels of academic autonomy, enabling them to innovate in curriculum design and teaching methods. Schools like Preah Sisovath have integrated STEM programs and employ instructional innovations such as flipped classrooms, which align with global trends in personalized learning and critical thinking (Cevikbas & Kaiser, 2022; Khosa & Burch, 2023). Teachers expressed satisfaction with their ability to adapt lesson content and implement additional programs that cater to student needs. However, academic autonomy is not evenly implemented across all schools, particularly in rural areas where resources and expertise may be limited. This disparity reflects the findings of Bruns et al. (2019), who noted that without sufficient resources, academic autonomy may not lead to the desired improvements in educational outcomes. Schools with limited access to technology or experienced teachers may struggle to fully utilize academic autonomy, leading to uneven educational quality across the NGS network. Additionally, balancing innovation with adherence to national standards remains a challenge. Schools must ensure students meet national educational standards while pursuing unique educational goals, a tension noted in previous research on school autonomy in diverse educational contexts (Lee & Nie, 2014; Watson-Vandiver & Wiggan, 2018; Worth & Van den Brande, 2020).

The findings of high autonomy in organizational, financial, staff, and academic areas in Cambodian Upper secondary schools have several significant policy implications. These implications can guide the future direction of educational reform to enhance the overall quality and effectiveness of the education system. Expansion of Autonomy Framework: Policymakers should consider expanding the autonomy framework to other schools, recognizing the positive impact of autonomy on school performance. This expansion will allow more schools to decide on their organizational structure, financial management, staff, and curriculum. By decentralizing decision-making, schools can tailor their strategies to local needs, improving educational outcomes and fostering a more dynamic and responsive educational system. Capacity Building Initiatives: Investing in capacity-building initiatives for school leaders and staff is essential to support the effective implementation of autonomy. Training programs focused on financial management, leadership skills, and innovative teaching practices can equip educators with the necessary skills and knowledge to maximize the benefits of autonomy. Strengthening the capabilities of school administrators and teachers ensures that they are well-prepared to handle increased responsibilities and make informed decisions that enhance student learning.

Development of Robust Accountability Frameworks: While autonomy is beneficial, it must be balanced with robust accountability frameworks to ensure schools remain focused on improving student outcomes. Policymakers should develop clear guidelines and performance metrics to monitor the impact of autonomy on educational quality. Establishing regular evaluations and feedback mechanisms helps maintain high standards and accountability, ensuring that autonomy leads to positive academic results. Community Involvement: Encouraging greater involvement of parents and the local community in school governance can enhance the effectiveness of autonomous schools. Policies that promote transparency and stakeholder engagement can help build trust and support for school initiatives, fostering a collaborative environment that benefits students and educators alike. Transparent and Inclusive Decision-Making: Promoting transparency in school governance and involving parents and the local community in decision-making processes can enhance the effectiveness of autonomous schools. Policies encourage stakeholder engagement, build trust and support for school initiatives, and foster a collaborative environment. Increased community involvement ensures that school policies and practices reflect the students' and their families' needs and priorities, leading to better educational outcomes.

Strategic Resource Allocation: Financial autonomy allows schools to allocate resources more effectively to areas directly impacting student performance. Policymakers should ensure schools have the financial expertise and support to manage their budgets efficiently. This

support can include financial planning and management training and providing access to financial advisors. Effective resource allocation enables schools to invest in areas such as teacher training, infrastructure, and educational materials, ultimately enhancing the quality of education. Equity in Resource Distribution: While expanding autonomy, addressing potential disparities in resource distribution is crucial. Policymakers should develop mechanisms to ensure that all schools, regardless of location or socioeconomic status, can access adequate resources and support. This equity-focused approach helps prevent the widening of gaps between schools and ensures that all students have equal opportunities to benefit from enhanced autonomy and educational improvements.

CONCLUSION

The implementation of school management autonomy in Cambodia's New Generation Schools (NGS) has significantly improved educational quality. The study highlights high levels of autonomy in organizational, financial, staff, and academic domains, which enhance the schools' effectiveness and responsiveness. Organizational autonomy allows schools to tailor operations to local needs, fostering innovation and efficiency. Financial autonomy supports strategic resource allocation for teacher training and infrastructure. Staff autonomy enables the recruitment and development of personnel aligned with school goals, while academic autonomy encourages innovative teaching methods that promote student engagement and achievement. These findings suggest that expanding the NGS autonomy model to other public schools such as that of Preah Sisowath High School-could improve education quality nationwide if supported by capacity-building, strong accountability frameworks, and community involvement.

The policy implications call for scaling up the autonomy framework, with targeted support for leadership and financial management training. Future research should involve broader, more diverse school samples and conduct longitudinal studies to evaluate the long-term sustainability of autonomy's effects. It is also important to include insights from key stakeholders like the Ministry of Education (MoEYS) and KAPE to better understand policy implementation. Further research should address equity in resource distribution, especially in under-resourced schools, and explore additional dimensions of autonomy such as community engagement, parental involvement, and student demographics. Examining non-cognitive outcomes—like critical thinking and social-emotional skills-and the role of school leadership in autonomous settings would deepen understanding of autonomy's broader impact. Finally, studying the balance between autonomy and accountability can help design frameworks that foster innovation while maintaining educational standards.

Conflict of interests

There are no known conflicts of interest associated with this publication.

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Appendix

Code	School Name	Research Design	Date
Peam Chikorng High School, Kang Meas District, Kampong Cham			
KII-1-KPC	Principal [M]	Key informant	15 July 2024
Preah Sisovath High School, Daun Penh District, Phnom Penh			
KII-2-PP	Principal [M]	Key informant	16 July 2024
Samdach Cheasim Prek Anhchanh, Mukh Kampul District, Kandal			
KII-3-KD	Principle [M]	Key informant	16 July 2024
Kok Pring High School, Svay Chrum District, Svay Rieng			
KII-4-SVR	Principle [M]	Key informant	17 July 2024