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Opportunities and Challenges of the Cascade Model in Professional Development for Teachers: A Case of Samtse District

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Abstract

The Ministry of Education introduced its nationwide initiative termed Educating for Gross National Happiness (EGNH) to infuse the values and principles of Gross National Happiness (GNH) into the education system. To expedite this process, a cascade model of training was implemented, where a group of trainers disseminated knowledge and skills to subsequent levels of teachers. However, no studies have been conducted to examine the opportunities and challenges of this model in achieving its intended results. The current study bridged this knowledge gap by examining the opportunities and challenges of the cascade model through a qualitative case study research design. Data for the study were gathered from 28 participants using a semi-structured interview. The findings revealed that while the cascade model succeeded in achieving widespread dissemination of training, it has limitations. The top-down nature of knowledge transmission of the cascade model caused deterioration of information as well as a lack of adequate comprehension of the EGNH initiative. Additionally, insufficient trainer preparation and absence of follow-up support further affected the effectiveness of the model. The impact of cascade model on quality training and sustained support is also limited. Recommendations include enhancing follow-up structures, thorough trainer preparation, and fostering collaborative networks among teachers to enhance knowledge sharing and strengthen the implementation of any initiative that uses the cascade model of professional development.

Keywords: Educating for Gross National Happiness, cascade model, trainers, strengths, challenges

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Introduction

Bhutan's development philosophy is guided by the overarching framework of Gross National Happiness (GNH), which seeks to balance material and non-material aspects of progress (Namgyel, 2021). Within this framework, education is regarded as a cornerstone of national development, with the Royal Government of Bhutan emphasising its role in empowering citizens and fostering societal well-being (MoE, 2014). This commitment to education is constitutionally mandated in Article 9, which states that "The State shall endeavour to provide education for the purpose of improving and increasing knowledge, values, and skills of the entire population with education being directed towards the full development of the human personality" (Royal Government of Bhutan, 2008, p. 19). This provision highlights the nation's long-standing prioritisation of education, a vision deeply rooted in the leadership of the Bhutanese monarchy.

The Ministry of Education (MoE, 2015) emphasises that the primary objective of education is to "equip our students with relevant knowledge, skills, and values towards realising the national goal of Gross National Happiness" (p. 8). To accomplish this vision, major reforms were implemented which targeted both improved standards of education and increased applicability. Educating for Gross National Happiness (EGNH) emerged as a transformative initiative to bring GNH principles and values within the education system (Lhamo et al., 2020). It evolved into a conceptual framework for education that guided the MoE in the development and implementation of various educational interventions. The initiative was to infuse the GNH values through the five pathways of: meditation; infusing GNH values in the curriculum; holistic assessment of students; broader learning environment; and, media literacy and critical thinking (Thinley, 2016).

Consequently, two major changes brought about by EGNH to the education system included a GNH infused curriculum and the Green School for Green Bhutan programme (Drupka & Brien, 2013). The GNH infused curriculum translated into strengthening pedagogical approaches and classroom management practices; continuous and holistic students' assessments (summative and formative); and co-curricular activities for wholesome development (Wangdi & Boossabong 2024). Similarly, the Green School for Green Bhutan programme, aimed at developing well-rounded individuals, was achieved through its eight dimensions of is natural greenery, social greenery, cultural greenery, academic greenery, intellectual greenery, aesthetic greenery, spiritual greenery and moral greenery for holistic education and development (Chitra & Gurung, 2021). To facilitate effective integration of the EGNH programme, a cascade training model of professional development was implemented. The contents of the workshop included introduction to Gross National Happiness, goals and principles of Educating for Gross National Happiness, and the five pathways to EGNH such as meditation; infusing GNH values in the curriculum; holistic assessment of students; broader learning environment; media literacy; and critical thinking (MoE, 2013). While the cascade model allows for widespread dissemination of training within a resource-constrained environment, its effectiveness must be continuously ascertained to ensure that the transmission of knowledge remains valid and impactful.

Problem Statement

The Bhutanese government formally prioritised the integration of Gross National Happiness values and principles into the country's education system in 2009 (MoE, 2009). This commitment was reinforced through a week-long international Educating for Gross National Happiness workshop held in Thimphu, Bhutan's capital. The workshop brought together 24 international participants from 16 countries alongside 28 prominent Bhutanese educators to deliberate on an "educational paradigm supportive of GNH" (Powdyel, 2013, pp. 50–51). Through this essential policy dialogue forum and strategic planning session, the workshop enabled the development of essential educational initiatives that aligned with Gross National Happiness values and principles (Tshomo, 2016).

Following the workshop's outcome, a nationwide capacity building training of teachers in implementing the EGNH initiative was launched in (Wangdi & Boossabong, 2024). A core group of 70 facilitators (Training of Trainers) were trained for capacity building of teachers (MoE, 2012). These facilitators trained principals, who were directed to train the teachers in their respective schools (Namgyel & Rinchhen, 2016). The school level workshop lasted between half a day and two days (Sherab et al., 2016). Although the cascade model was employed for capacity building in implementing the EGNH initiative, no prior studies in Bhutan have evaluated both its opportunities and challenges. This research creates a foundation for empirical evidence about the cascade model to help future educational programmes reach their desired objectives through effective training measures that match Bhutan's educational goals. The research findings will enhance policy-making about educational reform and capacity building while simultaneously improving the quality of the education system. Future research avenues identified in this study can benefit both Bhutanese and international scholars. Overall, the study's findings are anticipated to provide an empirical basis for policy recommendations on using the cascade model to train teachers in implementing future educational programmes.

Aims

This study aimed to evaluate the opportunities and challenges of the cascade model used to train teachers in implementing the EGNH initiative.

Objectives

The objectives of the study are to:

i. identify the opportunities of the cascade model; and
ii. identify the challenges of the cascade model.

Research Question

The study was guided by the following research question and sub-questions.

Main Question:

What are the opportunities and challenges of the cascade model used to train teachers in implementing the EGNH initiative?

Sub-questions:

1. What opportunities did the cascade model offer in enhancing teacher professional development in the implementation of the EGNH initiative?
2. What challenges were associated with the cascade model in the professional development of teachers in implementing the EGNH initiative?

Literature Review

Educating for Gross National Happiness

The EGNH initiative was introduced with a goal to operationalise GNH within the education sector (MoE, 2014). Schools were encouraged to integrate elements of EGNH into their curricula and extracurricular activities (MoE, 2012). According to the Ministry of Education (2015, p.7), the overarching objective of EGNH is to cultivate "GNH-minded teachers and students, a GNH-infused learning environment, and a GNH-inspired school system through which children will become GNH graduates." It was further elaborated by Thinley (2010) that these graduates were expected to develop into individuals who embody compassion, ecological literacy, contemplative and analytical thinking, and a deep awareness of their interconnectedness with the natural world and humanity. By embedding these values into everyday learning experiences, the EGNH initiative aimed to nurture a generation of socially responsible, ethically grounded, and environmentally conscious citizens. To enable the integration of the elements of EGNH into the school system, a cascade model of capacity building for teachers was initiated.

Cascade Model

According to Ngeze et al. (2018), one of the professional development models used in educational setting is the cascade model. In this model, the primary trainers providing training to the secondary trainers (Abeysena et al., 2016). The secondary trainers disseminate knowledge to next group of participants (Roesken-Winter et al., 2015; Wedell, 2005). The effectiveness of the cascade model is influenced by the ability of the trainers to transfer knowledge and skills to the participants accurately. However, in the absence of a meticulous process, there would be dilution in knowledge transfer (Abeysena et al., 2016). The cascade model of training encompasses three phases such as development of materials followed by hierarchical training and concludes with post-session reinforcement and knowledge correction (Mpabalungi, 2001). The cascade model is mostly used in developing countries where there are limited resources as cost-effective and scalable professional elopement models (Wedgwood, 2005). He stresses that the cascade model allows for quick propagation of new curricula and educational reforms. Despite its efficiency, the model faces implementation challenges (El-Hamamsy et al., 2024). According to Hayes (2000),

training quality consistency is a major issue, particularly a lower network levels. Initial trainers must accurately convey and adjust training content as it progresses downward to maintain effectiveness. In the absence of monitoring techniques along with lack of reinforcement measures and quality control systems, the risk of information distortion increases, ultimately undermining the intended learning outcomes.

Opportunities of the Cascade Model

The cascade model of professional training represents a well-accepted method that efficiently disseminates knowledge and skills to large groups within a short period (Ngeze et al., 2018). The co-trainer approach that uses current educational staff maximises productivity through uninterrupted service delivery without increasing implementation expenses for educational reforms (Wedell, 2005). The method proves beneficial especially when professional trainers are difficult to locate (Karalis, 2016; Ngeze et al., 2018). Studie show that the success of the cascade model depends on the strength of trainer instruction and the training support for them. According to Brabson et al. (2021), educational quality and consistency is determined by proper initial training and ongoing professional development. The cascade model has been instrumental in the large-scale implementation of national educational reforms (Wedell, 2005). Research conducted by Wedgwood (2005) found that cascading training allowed swift transmission of instruction to large groups of educators leading to successful curriculum adoption. Educational policymakers prefer this model since it allows them to reach more participants with limited expenses through its scalable structure. Dichaba and Mokhele (2012) contend that the model is economically feasible because it trains many teachers through limited resources thus maintaining affordable sustainable professional development projects.

Challenges of the Cascade Model

The cascade model of professional training functions efficiently and uses a scalable method but it creates multiple structural and implementation barriers (Bryk, 2015). The transmitting style of the cascade model restricts feedback interference between organisational levels thus impairing trainee-proficiency and training programme success (Moulakdi & Bouchamma, 2020). The lack of initial training (Baron, 2006) and ongoing support (Ngeze et al., 2018) reduce the effectiveness of trainers operating at lower levels. Within the model, trainers must perform dual roles of learning and teaching functions while their professional duties require substantial modifications (Abeysena et al., 2016). Roesken-Winter et al. (2015) maintain that trainer transformation into change agents requires adequate adult education training because such expectations are unattainable without it. A major issue in a cascade model is content dilution as training is transmitted to subsequent levels (Bryk, 2015). This phenomenon produces a gradual degradation of information quality (Wedell, 2005) that leads to misinterpretations (Suzuki, 2008) thereby diminishing trainer confidence while generating doubts about training programme validity (Dichaba & Mokhele, 2012). Training delivery contains inconsistencies when instructors modify or choose specific aspects of the training material or protocol process (Moulakdi & Bouchamma, 2020). Extended expert trainer who do not

consider local contexts produces training content that fails to identify teacher requirements (Abeysena et al., 2016; Bett, 2016). Training effectiveness decreases when providers fail to adjust their methods toward specific local conditions (Moulakdi & Bouchamma, 2020).

Lack of continuous monitoring together with inadequate support for trainers during and after training decreases implementation effectiveness because trainers experience challenges in planning and leading educational sessions (Bett, 2016). Therefore, Karalis (2016) recommends that cascade models should also include continuous monitoring for quality assurance. The maintenance of effective training depends on well-integrated quality assurance systems (Karalis, 2016). According to Hayes (2000), the capabilities of training professionals during implementation have a direct impact on programme achievements. When trainers receive insufficient support, they might transmit information inappropriately thus transmitting wrong or incomplete information during knowledge transfer. Taylor and Mansfield (2007) argue that the motivation and capability of trainers remain crucial because inadequate strength in these areas can impair the entire programme structure. Wedgwood (2005) explains that trainers are required to modify training materials for their educational settings yet such adaptation inconsistently occurs in reality leading to reduced learner participation and fewer training results. Cascade-based training faces sustainability problems because trainers do not have enough subject-matter knowledge (Ono & Ferreira, 2010) and there are no lasting support structures (Robinson, 2002). The current issues demonstrate a need for systematic process, ongoing feedback loops, and specific training reinforcement measures for verifying content accuracy and contextual relevance.

Methodology

Research Paradigm

The study is premised on the interpretivist paradigm. This paradigm centers around understanding individuals' subjective experiences within a social context (Pulla & Carter, 2018). The interpretivist paradigm is appropriate for this research that draws on the social experiences of the participants. Anchoring the study on the interpretivist paradigm provided insights into the lived experiences of the teachers who attended the workshop on the implementation of the EGNH initiative using a cascade model. By leveraging the subjective meanings participants brought to their experiences of attending the workshop, the research highlighted the opportunities and challenges embedded in the cascade model of professional development.

Research Design

A qualitative case study focusing on three higher secondary, two middle secondary and two lower secondary schools in Samtse district was adopted for the study. These schools together were considered as a single case. The case study enabled to acquire in-depth perceptions into the experiences of the teachers on the opportunities and challenges of the cascade model sued to train them in the implementation of EGNH strategies. In essence, the study provided deeper insights into the opportunities and challenges of the cascade model of teacher professional development.

Data Collection Tool

The data for the study were gathered from 28 participants using one-on-one semi-structured interviews. This data collection tool allowed to gather in-depth contextual information on the strengths and limitations of the cascade model of training. The use of semi-structured interview offered the flexibility to approach the participants differently and to use pre-established questions as well as ask questions that arose during the interview. Spontaneous replies were also generated by posing clarifying questions, which helped in eliciting both planned and unplanned responses that aided in gathering richer and more informative data. The use of semi-structured interviews, therefore, allowed for in-depth exploration of the research topic. Prior to the data collection, the interview questions were pilot-tested to establish methodological soundness. The pilot test enabled the data collection tool to be refined for clarity. The pilot test also provided the researchers with valuable experience in conducting the interviews.

Sample and Sampling

According to Liamputtong (2013), the purpose of a qualitative research is to seek a wholesome understanding of the research topic. Research participants must possess adequate levels of knowledge along with experience since these qualities influence the quality of qualitative data (Creswell & Clark, 2007). A purposeful sampling techniques was adopted for the study to select the 28 participants. This research sampling approach helped successsfully identify esential research cases (Carpenter & Suto, 2008). The inclusion criterion included teachers who participated in the cascading workshop for the EGNH programme. The sample included both male and female teachers from different educational settings, such as lower secondary, middle secondary, and higher secondary schools, across urban, semi-urban, and rural areas. This varied selection aimed to capture a wide range of views and experiences related to the opportunities and challenges of the cascade model for professional development. Including participants from different locations and school levels offered a complete understanding of the chances and challenges presented by the cascade model.

Data Analysis

The data for the study were analysed using thematic analysis, based on the procedures of Braun and Clarke (2018). Thematic analysis is a method for recognizing patterns in the data. The unit of analysis focuses on the themes that emerge (Braun & Clarke, 2018). In this study, the thematic analysis started with researchers familiarising themselves with all 28 transcripts by reading them multiple times. Subsequent to this process, initial codes were generated and similar codes were amalgamated into themes. The themes were reviewed and finalised. A report of the analysis, which included the data extract, was produced. The whole process of thematic analysis was iterative, involving continuous refinement throughout the process.

Ethical Considerations

Since the study involved visiting schools in Samtse district, Bhutan, official permission was obtained from the Director of the Department of School Education, Ministry of Education and Skills Development. Informed consents were obtained from all participants. The information collected is used only for this research and not for any other purposes. Participation in the research was voluntary and participants were assured that they were free to withdraw from participating at any time. Before the semi-structured interview, the rationale for the research study was restated and participants were provided with the *Information Sheet for Participants* and encouraged to ask questions and clarify doubts, if any. Permission was sought to record the conversation. Pseudonyms (P1, P2, etc.) are used to ensure the anonymity of participants.

Limitations

The results of this study should be interpreted with consideration of its inherent limitations. The qualitative approach limits generalisability and the ability to quantify results or test statistical relationships. Therefore, future research could examine the strengths and limitations of the cascade model by employing a mixed-methods design to garner a more comprehensive insights into the model. Additionally, time constraints prevented the inclusion of key stakeholders such as students, parents Education Monitoring Officers, and facilitators of the ENGH workshop limiting the comprehensiveness of the analysis.

Results and Discussion

This section provides an interpretation and discussion of the key findings, organised around four themes identified from the data analysis: broad dissemination, dilution of information, low level of knowledge among trainers, and lack of a follow-up support structure for implementers. To validate the discussion, relevant participant quotes from the interviews are embedded. The findings are interpreted in relation to existing literature and prior studies, highlighting how they support or contradict these findings. To avoid misinterpretation, syntactical errors accompanying participants' quotes from the interviews have not been corrected; therefore, the quotes are written verbatim.

Broad Dissemination

The data analysis indicated that a substantial number of teachers received training in Educating for Gross National Happiness implementation using the cascade approach. Participants reported the opportunity to attend the training related to EGNH implementation. For example, P1 mentioned, "Many of us had the opportunity to participate in a workshop on EGNH." Another participant (P13) indicated, "When the Educating for Gross National Happiness initiative was introduced in schools, we received the School Based In-service Programme on its implementation facilitated by people who had the opportunity to attend the workshop at the national level." Corroborating this finding, literature highlights that cascade model is an efficient mechanism for accelerated implementation of educational reform or new curricula in countries with limited

educational resources, especially in developing nations (Wedgewood, 2005). The model enables mass dissemination of training to teachers in an efficient manner, necessary for efficient implementation at a national level (Wedgwood, 2005). Its cost-effectiveness is an added advantage in making it suitable for massive operations because it offers opportunities for training large numbers of teachers using relatively few resources, making the programme cost-efficient (Dichaba &Mokhele, 2012; Hardman et al., 2011; Ono & Ferreira, 2010). The finding demonstrates that the cascade model succeeded in providing training on the implementation of EGNH to many teachers. National educational reforms benefit from effective and economical comprehensive training delivery which is made possible through this model.

Dilution of Information

The findings reveal that the cascade model of professional development resulted in inadequate acquisition of knowledge and skills as the training knowledge decreased at each stage. It was highlighted by the participants that the cascading trainings were facilitated by principals who attended the training on the implementation of the EGNH programme. However, as the training was cascaded through different levels, key information was diluted. This perception is represented in the following quote by P9: “Some principals went for the EGNH workshop. They provided the School-Based In-service Programme. By the time the information reached us, it was diluted. That is why we have very little knowledge of it.” Another participant, P11 stated “The training did not cover the contents in-depth.” This lack of comprehensive training contributed to a diminished sense of confidence among teachers in implementing the EGNH activities. This concern is exemplified by P14, stating, “When somebody does not have adequate knowledge, adequate information on EGNH, there will be some kind of hesitation, and that will affect the way we implement EGNH.” Similarly, P19 pointed out the shortcomings of the cascade model. It was explained that “A few days’ workshop at the national level got compressed to 1-2 hours at the school level; thus, all the information was not shared with the participants.” Additionally, P7 noted the need for sufficient knowledge to implement the EGNH activities effectively, stating that “Teachers need to have adequate knowledge in implementing EGNH. We can’t give what we do not have.” Similarly, R6 mentioned, “We need more workshops on the implementation of the GNH initiative.” Research supports these observations, highlighting the risk of content loss as training passes through various levels; this is one of the main issues with the cascade model (Bryk, 2015). Hayes (2000) points out that trainers at the lower levels might not have the expertise to clearly explain the concepts, resulting in less understanding among participants. Fiske and Ladd (2004) also criticise the model for its tendency to lose information and lead to misunderstandings, particularly when there are not enough quality assurance and support mechanisms in place. These findings highlight the need to look for other training models that better ensure knowledge retention and skill development. The findings also stress the importance of professional support and mentorship for the successful implementation of the EGNH or any other initiative.

Low Level of Knowledge of the Trainers

The findings indicate that some resource persons exhibited a limited understanding of the strategies required for effective implementation of the EGNH activities. The participants expressed concerns about the trainers' confidence and expertise, which in turn affected their ability to understand and implement the EGNH strategies. For example, P5 remarked:

> I am not that confident even after attending the EGNH workshop because I didn't feel that the resource persons themselves were very confident. There needs to be a well-experienced person conducting such programmes—someone convincing and persuasive enough so that participants can truly grasp the essence of the Educating for Gross National Happiness activities.

Similarly, P16 noted inconsistencies in the training sessions:

> Even our resource persons who trained us were not very comfortable with the concept of EGNH. They offered different views… and during our workshop, there were many question-and-answer sessions attempting to clarify the matter. There were a lot of differences... I think the participants of the workshop didn't fully understand it. That's why the concept isn't really clear to most people. I feel there should be a very clear concept from the top, which must be clearly disseminated to teachers.

The necessity of knowledgeable and well-prepared trainers was further emphasised by P7:

> There has to be a well-experienced person conducting such programmes, who is convincing enough, and persuasive enough to the extent that the participants get the essence of the concept. Only then will teachers be able to pass on this practice to students.

These findings corroborate with those found in the literature where a key limitation of the cascade model is its heavy dependence on the competence and preparedness of the initial trainers. It is argued that when these trainers lack sufficient expertise or support, the effectiveness of the training is significantly compromised. This often results in incomplete comprehension and incorrect implementation of key concepts, ultimately undermining the intended outcomes of the programme (Taylor & Mansfield, 2007). The implication of the finding is that the success of the EGNH programme relies on the expertise and confidence of the initial trainers. Inadequate knowledge of the programme's activities can hinder effective implementation at the school level and contribute to misunderstandings and inconsistencies among the implementers. To mitigate such challenges, it is imperative to ensure that the facilitators possess comprehensive knowledge before working as trainers. Hayes (2000) postulated that the effectiveness of cascade method depends upon the initial trainers to transmit knowledge and skills with accuracy.

Lack of Follow-up Support Structure for Implementers

The findings indicate that the training programme for implementing the EGNH was delivered in a singular session, without any subsequent follow-up support structures for the implementers. The majority of the participants reported that the absence of follow-up reduced their

motivation to implement the EGNH initiative. For instance, P12 remarked, "Other than the instruction to implement the EGNH strategies, there is no follow-up. Nobody is coming and checking how things are being done or not. Since there is lack of follow-up, there is no motivation." Similarly, P1 noted, "They say very loudly that GNH should be the nation's goal and they conduct workshops for the teachers, and after that, there is no monitoring and follow-up support." It was indicated by P6 that monitoring and follow-up from the stakeholders are important for motivating teachers, noting that "when there is no proper monitoring, teachers take it lightly." The literature shows that effective training programmes typically incorporate follow-up training as a component of the cascade model. Follow-up training is essential for addressing gaps left by the initial training and for consolidating the learning (Mpabalungi, 2001). Hayes (2000) posits that the quality of training may deteriorate as it cascades from the initial group of trainers to subsequent ones, resulting in inconsistencies in the delivery and understanding of training material. This issue is compounded when there is inadequate follow-up or support for trainers, who may then struggle to convey the material effectively. Brabson et al. (2021) suggest that when initial training is robust and continuous support is provided to trainers, the cascade model can be highly effective in ensuring consistent and high-quality training across different levels. However, the cascade approach faces drawbacks because trainers lack necessary knowledge (Ono & Ferreira, 2010) and there are no systems in place to provide follow-up support to reform implementation personnel (Robinson, 2002). The absence of follow-up support systems in EGNH implementation training reveals that at present the cascade approach may not guarantee that the educational reform will be efficiently sustained. The phenomenon could lead to participants losing their initial drive and enthusiasm causing both poor quality and reduced effectiveness within the EGNH initiative. The findings indicate that more effective training strategies that encompass ongoing follow-up, as well as support mechanisms, should replace existing structured models.

Conclusion and Recommendation

A cascade model of professional development was implemented to train teachers in integrating the EGNH initiative into the education system. The study examined the strengths and challenges of the cascade model. The findings revealed that, while the cascade model facilitated wide transmission of training, it also had its limitations. Participants noted that the training lacked follow-up support, resulting in lowered motivation, and partial, and unsustainable implementation of the EGNH strategies. Dilution of information as it cascaded down successive levels of trainers, as well as insufficient trainer confidence and knowledge, further reduced the effectiveness of the cascade model. These factors affected the quality as well as uniformity of the training, undermining the overall success of the EGNH programme. Based on the findings of the study, the following recommendations are proposed for future training programmes that employ cascade model for better performance. To improve effectiveness in training, it is recommended that a structured follow-up mechanism in the training programme be integrated to bridge gaps as well as reinforce learning. Further, ensuring that trainers undergo in-depth pre-training as well as professional development is very important for successful knowledge and skill dissemination. Additionally,

encouraging peer learning as well as collaborative networks among teachers will enhance knowledge sharing, address challenges as well as strengthen the implementation of any initiative that uses the cascade model for professional development.

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