

# EXAMINING THE ROLE OF LIFE SCIENCES SUBJECT ADVISORS IN COLLABORATIVE TEACHER PROFESSIONAL WORKSHOPS: A MULTIPLE CASE STUDY OF NORTHERN KWAZULU NATAL

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## Abstract

Subject advisors play a critical role in strengthening teacher capacity and ensuring effective curriculum implementation, particularly in under-resourced contexts. Their responsibilities extend beyond administration to include pedagogical support, professional development, and sustained mentorship for in-service teachers. However, in many rural districts, subject advisors face numerous systemic constraints, including geographical isolation, resource limitations, and inadequate content knowledge, which hinder their ability to provide meaningful curriculum and instructional support. This qualitative study, situated within an interpretivism paradigm, explores how Life Sciences subject advisors perceive and enact their roles in a collaborative teacher professional development initiative between a local university and two districts in Northern KwaZulu-Natal. A multiple case study design was employed, and two subject advisors were selected using purposive and convenient sampling, as they held relevant advisory roles in Life Sciences education and had direct involvement in the professional development workshops. Data was collected through a close-ended questionnaire, semi structured interviews, field notes and researcher reflections. The roles encompass (i) logistical coordination, (ii) instructional support, and (iii) emotional encouragement. The findings suggest that subject advisors' roles in collaborative teacher professional development workshops are shaped by both structural conditions (e.g., district demands, workloads, time constraints) and personal professional commitment to supporting teacher learning. The key findings highlight that while logistical tasks such as arranging venues and sending circulars are essential for ensuring teacher participation, they are insufficient on their own to build sustained teacher capacity. The Findings reveal varying levels of engagement shaped by both systemic constraints such as workload and individual professional commitments. One advisor displayed a strong professional agency, frequently co-facilitating sessions and addressing teachers' practical needs, while the other primarily supported logistical arrangements due to competing departmental obligations. This study highlights the importance of clearly defining and supporting the professional roles of subject advisors in collaborative PD initiatives. It calls for ongoing partnerships between universities and education departments to ensure subject advisors are positioned not only as logistical coordinators but as active co-facilitators of sustainable teacher learning.

**Keywords:** *Community engagement, life sciences, subject advisors, teacher professional development and rural education.*

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## 1. Introduction

Subject advisors play a central role in strengthening teacher capacity and improving instructional quality, particularly in under-resourced township and rural contexts across South Africa. Their responsibilities extend far beyond administrative functions to encompass curriculum mediation, pedagogical guidance, and sustained teacher mentorship (Sithole & Tachie, 2024; Sithole, 2020). In provinces such as KwaZulu-Natal, subject advisors have been shown to support teachers through a range of activities, including organising workshops, distributing teaching materials, and conducting school visits aimed at deepening curriculum understanding and improving classroom practices (Sithole, 2020; Shozi, 2014). This support is especially critical in Life Sciences education, where rural schools face acute challenges, including a severe shortage of qualified teachers (Shozi, 2014; Tatane, 2014). This shortage contributes to consistently poor Grade 12 learner performance and South Africa's low rankings in international science assessments (DBE, 2011; Howie, 1997). In such settings, subject advisors are expected to play a transformative role in enhancing teaching and learning outcomes. However, their effectiveness is often constrained by systemic issues such as limited access to resources, overwhelming workloads, and inadequate professional preparation for the complex demands of their roles (Sithole, 2020).

Sithole (2020) further indicates that the academic background and access to teaching aids significantly affect subject advisors' capacity to provide curriculum leadership and instructional support. In response to these challenges, the KwaZulu-Natal DBE, in collaboration with a local university, initiated a multi-disciplinary teacher professional development programme. Within the Life Sciences component of this initiative, university lecturers and subject advisors partnered to support teachers with content-rich methodologies and practical work strategies aimed at improving learner achievement. While the lecturers' responsibilities were clearly defined mainly focusing on the preparation of practical materials and content-based pedagogies, the specific role of the Life Sciences subject advisors in this collaborative arrangement remained vague. Preliminary observations suggest variation in their levels of involvement, which raises critical question "What is the perceived and enacted role of Life Sciences subject advisors in collaborative teacher professional development workshops?"

This paper addresses this key gap in literature by exploring how subject advisors perceive and enact their responsibilities within this partnership. The study contributes to a deeper understanding of how their involvement can be better defined, supported, and leveraged to enhance the impact of teacher professional development initiatives in rural contexts. By critically examining the intersection of subject advisory functions and university-led professional development, this study contributes to the discourse on sustainable teacher support frameworks in resource-constrained educational settings.

## 2. Literature review

This literature review focuses on two key areas: (i) the historical and policy foundations of subject advisory services, and (ii) the perceptions of subject advisors and their influence on curriculum implementation. These areas provide a contextual and theoretical basis for understanding the evolving roles of subject advisors within the context of teacher professional development.

### 2.1. Historical and policy perspectives on subject advisory services

The role of subject advisors has evolved significantly since the apartheid era in the South African context. In the former Transvaal Education Department (TED), formerly known as 'inspectors' had clearly defined roles and were actively involved in teacher monitoring, evaluation and promotion (TED, 1979). While this structure had its strengths in role clarity and teacher development, it also reflected a bureaucratic model deeply rooted in controlling teachers rather than capacitating and supporting them. By contrast, in the Department of Education and Training (DET), the advisory system was criticised for its inefficacy, lack of authority, and minimal engagement with teachers' real needs. Issues such as irregular visits, secrecy, and a compliance-driven appraisal system led to widespread mistrust between educators and subject advisors (ANC, 1994). However, towards the end of apartheid, attempts were made to re-define and re-imagine the role of subject advisors to focus on guidance and support rather than inspection and control (DET, 1993). As a result, emphasis was placed on teacher development, subject-expertise, curriculum support and innovation. Present policy frameworks such as the Integrated Strategic Planning Framework for Teacher Education and Development and Education of White Paper 6 now envision subject advisors as key agents in curriculum support, professional development, and stakeholder mediation (Jita & Mokhele, 2012; Bantwini, 2015). Nonetheless, the historical tension between supportive and supervisory roles continues to shape teacher perceptions and policy implementation in the present day. To overcome this legacy, it is essential to clearly define and communicate the supportive, developmental role of subject advisors in today's schooling system (Obi & Ticha, 2020).

### 2.2. Perceptions of subject advisors and their impact on curriculum implementation

The relationship between subject advisors and teachers plays a key role in the successful delivery of the curriculum. Teachers' perceptions of subject advisors often influence the uptake of their support. A study reported on (Sithole, 2020) suggests that while subject advisors provide guidance, many educators find themselves grappling with curriculum complexity, poor lesson planning skills, and lack of resources. These challenges necessitate a collaborative and sustained relationship between teachers and advisors (Obi & Ticha, 2020; Shoji, 2014). Research points (see: Sithole & Tachie, 2024; Shoji, 2014) out that the alignment between advisors and teachers determines the success of teaching and learning. Misalignment often leads to misunderstandings, resistance, and ineffective implementation. Thus, ongoing dialogue and trust-building between teachers and subject advisors are essential to support a shared understanding of curriculum expectations and practical delivery strategies (Obi & Ticha, 2020). Effective professional development requires meaningful collaboration between subject advisors and school-based leadership structures, such as departmental heads (Sithole & Tachie, 2024). Studies (e.g. Tatane, 2014) have shown that while subject advisors are expected to provide continuous support, they often fail to meet the specific needs of teachers, especially in rural areas. Departmental heads report that the support received is generic and not sufficiently targeted to classroom realities (Sithole, 2020). Therefore, to enhance the quality of teaching and learning, collaboration between subject advisors, departmental heads, and other stakeholders

is critical, this the need for this study which begins to explore these collaborations and the roles played by each stakeholder and their impact.

### 3. Methodology

This qualitative study was framed within an interpretivist paradigm, which recognises that reality is constructed socially constructed and best understood through individual’s subjective experiences (Creswell & Poth, 2018). Interpretivism was deemed suitable as it aligned with the choice of a qualitative multiple case study design used in this study. A multiple case study of two life science subject advisors from different districts enabled in-depth exploration of how they perceived and enacted their roles in a collaborative teacher PD workshop (Yin, 2018). The two Life Sciences subject advisors were purposively and conveniently sampled based on their official roles and active involvement in the PD workshops. The demographic information of the two participating subject advisors is presented in Table 1 below.

Table 1. Summary of the demographic information of the Life Sciences subject advisors.

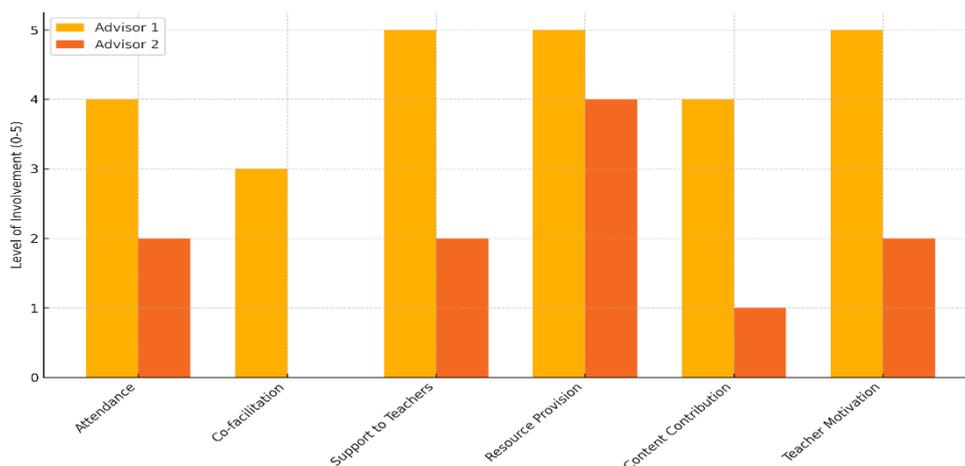
Attribute	Subject Advisor 1	Subject Advisor 2
Highest Qualification	Master’s Degree	Pursuing PhD
Years of Experience	8 years	14 years
Number of Schools Overseen	45	50
District Performance	High-performing district	Lowest-performing district

A structured questionnaire was administered to the teachers at the end of the first year of the project. It consisted of six close-ended indicators which involved (i) Attendance (ii) Co-facilitation (iii) Support to Teachers (iv) Resource Provision (v) Content Contribution (vi)Teacher Motivation. All these indicators were informed by literature around the key roles of subject advisors. Each indicator was rated on a 0–5 scale (0 = Not Involved; 5 = Fully Involved). These scores were used to quantify and compare the level of involvement of each advisor. In addition, Semi-structured interviews were conducted with each advisor, lasting approximately one hour. The interviews focused on their perceptions, level of involvement, and challenges encountered in supporting teachers during the workshops. Supplementary data included observational field notes and researcher reflections, which helped contextualize the advisors’ actions during workshops and their interactions with teachers and university facilitators. Thematic analysis (Braun & Clarke, 2006) was used to analyse interview data, while questionnaire results were presented using bar graphs to visually compare roles and levels of involvement. Ethical approval was granted by both the appropriate institutional ethical boards. All participants gave informed consent, and measures were taken to ensure their anonymity and confidentiality throughout the study.

### 4. Data analysis and findings

This section presents the findings emanating from the semi-interviews and questionnaires with two Life Sciences subject advisors who participated in a collaborative teacher PD project with a local university in Northern KwaZulu-Natal. The aim was to explore their perceptions of their roles and their levels of involvement in the project. Figure 1 below displays a comparative bar chart scoring each advisor’s engagement across five categories: workshop attendance, co-facilitation, logistical support, teacher relationships, and content contribution on a 0–5 scale (where 0 = none; 5 = high involvement).

Figure 1. Comparison of subject advisors’ levels of involvement in a collaborative workshop.



As shown above, **Subject Advisor 1** demonstrates high levels of engagement in most aspects of the teacher PD initiative. Subject advisor 1 attended most of the sessions (score of 4) and co-facilitated some of them (score of 3). His contributions were especially impactful in guiding teachers on the formulation of practical-based questions, addressing known teacher difficulties, and promoting scientific process skills. He also emphasised safety precautions and encouraged improvisation using available materials—practices aligned with curriculum standards for practical work in Life Sciences as revealed by his responses from the semi-structured interviews depicted on Table 2 below.

Table 2. Summary of subject advisor 1's perspectives regarding their roles in the teacher PD.

Themes	Advisor 1's responses during semi-structured interviews
Perceived Role	"I see myself as both a mentor and a bridge between the university and our teachers."
Teacher Support	"I know these teachers. I know who needs help with planning, who struggles with assessments."
Time Constraints	"Sometimes I'm overwhelmed, but I try to be present. Even when I miss a day, I check in with the team."
Content Contribution	"After practicals, I remind them to frame questions—things like hypothesis, variables, safety, etc."
Collaboration with Lecturers	"I like that I'm learning too. The lecturers bring in fresh approaches, and I try to support that."

From these findings, it is evident that subject advisor 1 went beyond logistical responsibilities by ensuring venues were properly equipped (e.g., projectors, sufficient furniture, and power access) and by regularly communicating with teachers via WhatsApp, where he shared materials, motivational messages, and reminders. These behaviors are reflected in his full scores for *Support to Teachers* (5), *Resource Provision* (5), *Teacher Motivation* (5), and a near-complete score for *Content Contribution* (4) as earlier depicted in Table 1 above.

In contrast, **subject advisor B** played a more limited role in the project. Although he also arranged venues and invited teachers (resulting in high attendance in his district of 50 schools), he seldom attended sessions and never co-facilitated. When he did attend, he often left before the end due to other work commitments. As such, his scores for *Attendance* (2), *Co-facilitation* (0), and *Content Contribution* (1) reflect a largely administrative engagement. The summary Table 3 below provides qualitative insights into his logistical support but also highlights a lack of active pedagogical involvement.

Table 3. Summary of subject advisor 2's perspectives regarding their roles in the teacher PD.

Themes	Advisor 2's responses during semi-structured interviews
Perceived Role	"Mostly I'm handling logistics—venues, circulars. I haven't really had time to get involved in sessions."
Teacher Support	"They know I'm there if they need something, but I haven't had the chance to get into teaching aspects."
Time Constraints	"It's not that I don't want to attend—there's just too much on my plate at work."
Content Contribution	"I read the reports afterward, but I haven't co-facilitated any content myself."
Collaboration with Lecturers	"The lecturers are doing a great job. I just wish I had more time to be part of the actual sessions."

In summary, the contrasting findings between the two advisors emphasise how meaningful engagement achieved through co-facilitation, tailored content input, and personal interaction with teachers can elevate the effectiveness of professional development activities.

#### 4. Discussion of the findings, recommendations and conclusions

To answer the key guiding research question of "What is the perceived and enacted role of Life Sciences subject advisors in collaborative teacher professional development workshops?" The analysis indicates that the role of Life Sciences subject advisors in collaborative teacher PD workshops is multifaceted and varies. The roles encompass (i) logistical coordination, (ii) instructional support, and (iii) emotional encouragement. The findings suggest that subject advisors' roles in collaborative teacher PD workshops are shaped by both structural conditions (e.g., district demands, workloads, time constraints) and personal professional commitment to supporting teacher learning. The key findings highlight that while logistical tasks such as arranging venues and sending circulars are essential for ensuring teacher participation, they are insufficient on their own to build sustained teacher capacity. Subject advisor 1's more active role resulted in stronger connections with teachers and likely contributed to a deeper uptake of workshop content, particularly in improving practical work competencies. Thus, revealing that the impact

of PD workshops is significantly enhanced when subject advisors take on a more pedagogical and supportive role, working alongside university lecturers. Therefore, it is recommended that future projects clearly define and support the active instructional role of subject advisors, reduce conflicting responsibilities during PD sessions, and intentionally involve advisors in planning and facilitation. In under-resourced contexts especially, enabling subject advisors to engage more deeply can strengthen the relevance, uptake, and sustainability of teacher PD efforts. Thus, calling for targeted ongoing discussions between the university and the DBE to find better ways of integrating subject advisors as co-facilitators in teacher professional learning.

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