



Learning in a Transformative School Culture: Reflections from a Biology Teaching Practicum

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WebLog Open Access Publications

Article ID : wjets.2026.j0102
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Abstract

Teaching practicum enables pre-service teachers to connect educational theory with professional practice while experiencing the organisational and relational conditions of school life. The culture of the host school can therefore influence pedagogical learning, professional identity, collaboration, and confidence. This reflective commentary examines a biology teaching practicum conducted from 30 March to 31 July 2026 at a Malaysian secondary school participating in the School Transformation Programme 2025 (Program Transformasi Sekolah 2025, TS25). It considers how a school culture oriented towards improvement shaped professional learning through classroom innovation, mentoring, collaborative work, STEM programmes, co-curricular activities, and school-wide participation. The analysis draws on the pre-service teacher's reflective records, final practicum report, and oral presentation. Three interrelated themes emerged: experiencing the school as a learning organisation, learning through pedagogical innovation and professional collaboration, and developing professional identity through participation beyond the biology classroom. The experience showed that school culture is not merely an administrative background to practicum. It can function as an active learning environment in which planning, feedback, shared responsibility, and reflection support the development of a competent and adaptive beginning teacher. The commentary also identifies the limits of a single, context-specific account and argues for practicum designs that give pre-service teachers sustained access to mentoring, collaborative inquiry, and varied forms of school participation.

Keywords: Teaching Practicum; TS25; School Culture; Biology Education; Professional Identity; Reflective Practice

Introduction

Teaching practicum is a formative component of teacher education because it enables pre-service teachers to connect pedagogical theory with the realities of planning, instruction, assessment, classroom management, and relationships within a school community. University coursework provides essential knowledge of curriculum, educational psychology, and teaching methods, but professional judgement develops through engagement with learners and colleagues in authentic settings. Schools are therefore more than locations in which lessons are delivered. They are social and organisational environments in which teachers interact with students, administrators, parents, support staff, and the wider community. The quality of a practicum consequently depends not only on the pre-service teacher's individual performance but also on the professional culture in which learning takes place [1].

School culture refers to the shared values, expectations, relationships, routines, and ways of working that shape everyday life in a school. A constructive culture can support collaboration, pedagogical experimentation, reflective dialogue, and shared responsibility for student learning [2]. Such conditions resemble a professional learning community in which educators examine practice together and build collective capacity for improvement [3, 4]. For a pre-service teacher, this environment can make professional learning visible through observation, feedback, participation, and access to the practical knowledge of experienced colleagues.

In Malaysia, the School Transformation Programme 2025 (Program Transformasi Sekolah 2025), commonly abbreviated as TS25, was developed to strengthen school quality through

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Received Date: 02 Sep 2026

Accepted Date: 29 Sep 2026

Published Date: 01 Oct 2026

Citation:

Yap CK, Daniel Sayed Shamsul Effendi SM, Bandong EN, Huda Sayed Mohamad SN, Zakaria R, Zulkifly S, et al. Learning in a Transformative School Culture: Reflections from a Biology Teaching Practicum. WebLog J Environ Sci. wjets.2026.j0102. <https://doi.org/10.5281/zenodo.23300553>

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leadership, effective teaching and learning, professional support, and meaningful learning environments [5]. The initiative provides a relevant setting in which to consider how school improvement processes are experienced by a pre-service teacher. This commentary does not evaluate the implementation or effectiveness of TS25. Instead, it reflects on how the professional culture encountered in one participating school shaped learning during a teaching practicum.

The placement was undertaken at SMK Sungai Ramal in Kajang, Selangor, an urban secondary school participating in TS25. During the practicum, the school maintained an active programme of classroom teaching, STEM education, co-curricular engagement, and whole-school activities. These features created opportunities for professional learning that extended beyond the formal requirements of Biology instruction. To avoid overstating the evidence, the school is treated here as the specific context of the reflection rather than as representative of all TS25 schools.

This reflective commentary examines how the culture of a TS25 secondary school influenced professional learning during a biology teaching practicum. It focuses on three questions: how the institutional environment shaped classroom practice; how innovation, mentoring, and collaboration supported pedagogical development; and how participation in STEM, co-curricular, and school-wide programmes contributed to professional identity. By positioning the school itself as part of the learning process, the paper highlights the relationship between individual reflection and the organisational conditions that enable a future teacher to become more competent, collaborative, and adaptive.

Methodology

This paper adopted a reflective narrative approach to examine the professional learning of the pre-service teacher, Sayed Muhamad Daniel Sayed Shamsul Effendi, during a teaching practicum at SMK Sungai Ramal, Kajang, Selangor, Malaysia, from 30 March to 31 July 2026. The placement involved lesson planning, Biology and Science instruction, assessment, classroom management, STEM and co-curricular activities, committee responsibilities, and participation in the daily routines of the school. A reflective narrative approach was appropriate because the purpose was to interpret professional growth through lived experience and critical reflection rather than to quantify teaching outcomes [6, 7].

The practicum was supported by university and school-based supervision. Professor Dr. Chee Kong Yap supervised Biology teaching, and Erra Noorfazira Bandong supervised Science teaching. At the school, Sharifah Nurul Huda Sayed Mohamad and Rosmani Zakaria served as mentor teachers (*guru pembimbing*). Supervision included lesson observations, feedback, discussion of lesson planning and classroom management, and guidance on professional responsibilities. This structure enabled the pre-service teacher to examine instructional decisions with experienced educators and gradually strengthen pedagogical confidence. The mentoring process was understood as collaborative professional learning rather than as simple compliance with practicum requirements.

Throughout the placement, the pre-service teacher maintained reflective records of lesson preparation and delivery, student engagement, instructional adaptations, classroom challenges, interactions with colleagues, participation in school programmes, and perceived professional development. After the practicum, these records were consolidated into a final reflective report and presented

orally to the university supervisors. The presentation enabled important experiences to be explained in greater detail and allowed interpretations in the written account to be clarified.

The authors used interpretive thematic analysis to organise the written report and oral presentation. They read the material repeatedly, identified recurring ideas, compared related observations, and grouped them into themes concerning school culture, pedagogical innovation, collaboration and mentoring, school-wide participation, and professional identity. The themes were discussed among the authors and refined for consistency with the original reflective account. Figure 1 was developed as a conceptual synthesis of the relationships identified through this analysis. Because the paper concerns one pre-service teacher in one school, its findings are context-specific and are not intended to represent all practicum placements or TS25 schools. No student names, individual achievement records, or personally identifying student information are reported.

Reflective Observations and Discussion

Figure 1 synthesises three connected dimensions of professional learning identified in the reflection. First, innovative classroom practice involved student-centred learning, digital and hands-on resources, and active scientific inquiry. Second, collaborative professional learning developed through mentor guidance, reflective dialogue, shared planning, and feedback. Third, participation in STEM and co-curricular programmes, committee work, and community activities extended learning beyond the classroom. These dimensions supported the emerging identity of a reflective, competent, and adaptive Biology educator and, through improved practice, contributed to meaningful student learning and holistic development. The feedback pathway in the framework represents continuous improvement: professional learning is shaped by school culture, while the developing practices of teachers can also help sustain that culture.

Experiencing a transformative school environment

The most distinctive feature of the practicum was the experience of a school culture that treated improvement, collaboration, and innovation as shared responsibilities. The placement showed that professional learning was influenced not only by the pre-service teacher's effort but also by the conditions created by administrators, mentors, colleagues, and school routines. Organised management, accessible guidance, and opportunities to participate in school programmes provided a structure within which the pre-service teacher could test ideas, receive feedback, and gain confidence. The school consequently became part of the teacher education process rather than merely the site at which practicum requirements were completed.

This culture was visible in the attention given to instructional planning and student participation. Lessons were prepared with reference to the Dokumen Standard Kurikulum dan Pentaksiran (DSKP), translated into daily lesson plans, and supported by varied teaching materials. Classroom practice included collaborative learning, student-centred tasks, differentiated questioning, purposeful lesson closure, and activities that connected scientific concepts with observable phenomena. Digital resources such as Quizizz, Wordwall, Educaplay, and interactive videos were used alongside printed modules, physical models, exit tickets, and reward systems. The educational value of these resources depended less on their novelty than on their alignment with learning objectives and

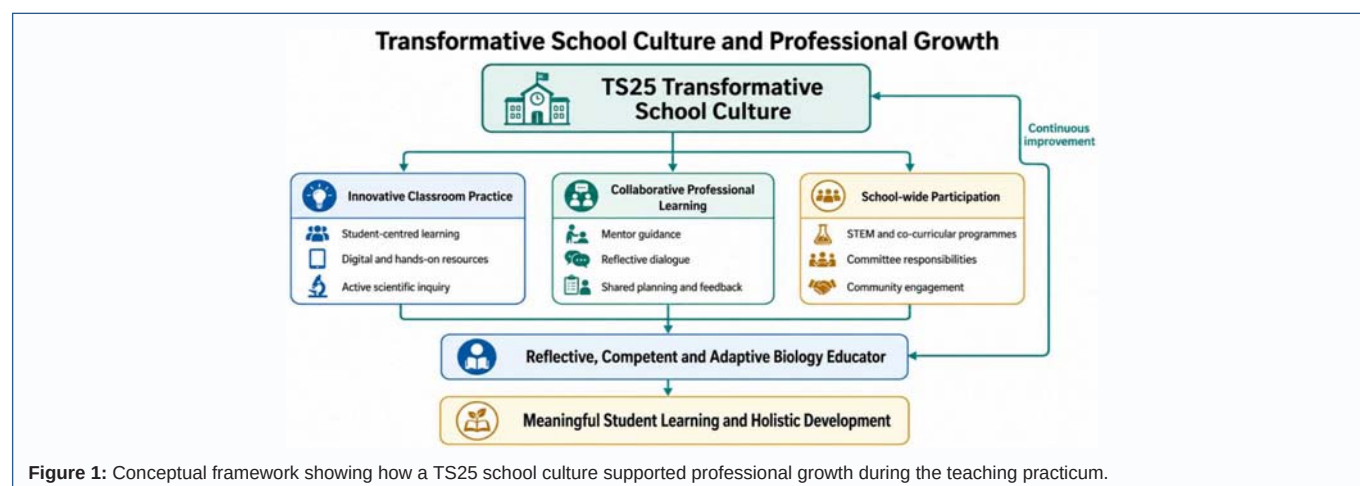


Figure 1: Conceptual framework showing how a TS25 school culture supported professional growth during the teaching practicum.

their capacity to make students think, discuss, observe, and explain. In this sense, innovation was a disciplined pedagogical choice rather than the simple adoption of technology [2, 8].

Professional learning also occurred through everyday interaction. Mentor teachers and experienced colleagues discussed lesson plans, classroom management, instructional problems, and possible improvements. Administrators and fellow practicum students provided further opportunities for shared planning and participation in academic, STEM, co-curricular, and community programmes. These experiences made teaching visible as a collective endeavour. They also showed how a positive culture can convert feedback and collaboration into ordinary professional habits. This interpretation is consistent with the view that sustainable school improvement depends on building collective capacity and creating conditions in which educators learn with and from one another [4, 9].

Innovation and collaboration as hallmarks of professional learning

Instructional innovation was one of the clearest features of the placement. Lessons did not rely exclusively on extended lecture. Induction activities used short videos, current news, questions, simple demonstrations, and interactive quizzes to activate prior knowledge and stimulate curiosity before new scientific concepts were introduced. During the lesson, collaborative tasks, differentiated questioning, student discussion, and reflective closure gave students a more active role in constructing meaning. The practicum demonstrated that innovation does not require sophisticated technology in every lesson. It requires deliberate choices that help learners engage with evidence, explain relationships, and receive feedback. This observation is consistent with evidence that active learning can improve performance in science and related disciplines [10].

The preparation of teaching materials further developed the pre-service teacher's pedagogical judgement. Resources included worksheets, do-it-yourself anatomical models, skeletal and organ-system models, multimedia presentations, exit tickets, evaluation boards, educational games, and a Hashira Coupon reward system recognising effort and participation. These materials helped visualise complex biological structures, supported collaborative problem-solving, and sustained attention. Their effectiveness, however, depended on relevance, accessibility, and alignment with the intended learning outcome. Designing, observing, and modifying the

resources encouraged the pre-service teacher to move beyond asking whether an activity was attractive and to consider whether it actually supported conceptual understanding.

Collaboration gave this experimentation professional direction. Mentor feedback addressed planning, classroom management, instructional technique, and the timely preparation of daily lesson plans. Experienced teachers shared practical responses to classroom challenges, while fellow practicum students exchanged resources, planned activities, and provided mutual support. These relationships made the practicum a shared learning process rather than an isolated placement. They reflect the principles of professional learning communities, in which collective inquiry and reflective dialogue are directed towards better teaching and student learning [3]. The experience therefore suggested that innovation is more sustainable when educators can discuss its purpose, examine its effects, and revise practice together.

School-wide participation beyond the biology classroom

Participation in school-wide programmes broadened the practicum beyond Biology and Science lessons. Activities included Hari Bicara Akademik, the Academic Excellence Awards Ceremony, Knowledge Month, the Entrepreneurship Carnival, the Maal Hijrah Programme, Teachers' Day, and several STEM initiatives. The STEM@PPDHL Wooden Bridge Challenge, Parachute Competition, STEM Carnival, and Highly Immersive Programme STEM activities enabled students to apply scientific ideas through design, testing, teamwork, and problem-solving. For the pre-service teacher, these programmes illustrated how classroom knowledge can be extended through authentic tasks and how teachers contribute to interdisciplinary learning across the school.

Committee and organisational responsibilities provided a different form of professional learning. The pre-service teacher assisted with venue preparation, discipline, photography, and the coordination of school events. These tasks required planning, communication, teamwork, and adjustment to changing circumstances. The placement also involved challenges, including large classes, student absenteeism, interruptions caused by school programmes, and the use of classroom or laboratory spaces that were not always ideal. Responding to these conditions required prioritisation, flexible lesson planning, efficient use of time, and reflection on how to protect learning continuity. Such experiences were important because professional competence is demonstrated not only in a well-controlled lesson but also in

thoughtful responses to imperfect conditions.

These school-wide experiences changed the pre-service teacher's understanding of professional identity. Teaching came to be understood as participation in a community with academic, pastoral, organisational, and civic responsibilities. Classroom instruction remained central, but it was connected to student welfare, co-curricular development, institutional routines, and relationships with colleagues and the community. The supportive culture enabled the pre-service teacher to practise leadership, communication, and shared responsibility while learning the limits of individual action. Collaborative professionalism is valuable precisely because educators combine expertise and responsibility in pursuit of common educational purposes [9]. The practicum therefore strengthened the conviction that a biology educator should contribute both to subject learning and to the wider conditions in which students and colleagues can flourish.

Conclusions

The teaching practicum in a TS25 secondary school demonstrated how school culture can shape the professional learning of a pre-service teacher. The placement supported pedagogical development through classroom experimentation, mentor feedback, collaborative planning, STEM activities, co-curricular participation, and whole-school responsibilities. These experiences showed that teacher preparation extends beyond the acquisition of subject knowledge and classroom techniques. It also involves learning how to participate responsibly in an organisation, interpret feedback, respond to changing conditions, and connect individual practice with a shared educational purpose.

This commentary is based on one reflective account and does not evaluate TS25 or claim that the experience represents every participating school. Its value lies in showing, at close range, how organisational conditions can enable or constrain professional learning. For teacher education, the principal implication is that practicum quality depends on both the opportunities given to pre-service teachers and the culture through which those opportunities are interpreted. Placements that provide sustained mentoring, collaborative inquiry, varied school participation, and structured reflection can help future teachers become more competent, adaptive, and attentive to the communities in which they work.

Declaration on the Use of Artificial Intelligence

The authors declare that generative artificial intelligence tools were used only to support language refinement, structural organisation, and stylistic clarity during manuscript preparation. The experiences, interpretations, arguments, and conclusions are those of the authors. All authors reviewed the final manuscript and accept responsibility for its accuracy, originality, and integrity.

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