



Teaching Student Athletes: Reflections from a Biology and Science Teaching Practicum in a State Sports Secondary School

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Abstract

Teaching practicum provides pre-service teachers with authentic opportunities to apply pedagogical knowledge and adapt to the characteristics of particular educational settings. State sports secondary schools are distinctive because academic learning is integrated with intensive athletic training and broader student development. Teachers in these schools must balance curriculum requirements with the academic, physical, and psychological needs of student-athletes whose participation may be affected by training schedules, competitions, and travel. This reflective commentary examines a Biology and Science teaching practicum conducted from 30 March to 31 July 2026 at a state sports secondary school in Selangor, Malaysia. It considers how the placement contributed to the development of flexible pedagogy, adaptive classroom management, and an emerging professional identity. The account draws on classroom teaching, co-curricular programmes, school activities, mentoring, and professional collaboration. Four interrelated themes emerged: responsive science teaching, the integration of academic and athletic development, professional learning through school engagement, and identity formation through reflection. The experience showed that teaching student-athletes requires academic rigour together with adaptability, creativity, empathy, and sustained reflection. It also illustrates the value of specialised placements in preparing future teachers to respond thoughtfully to diverse learners and changing educational circumstances.

Keywords: Teaching Practicum; Biology Education; Science Education; Sports School; Student-Athletes; Reflective Practice

Introduction

The transition from university student to practising teacher is a formative period in which pedagogical knowledge, professional identity, and educational values are tested in authentic settings. Within teacher education, the practicum is central to this transition because it enables pre-service teachers to connect educational theory with the realities of planning, instruction, assessment, classroom management, and relationships within a school community [1, 2]. Coursework provides essential conceptual foundations, but it cannot fully reproduce the complexity of teaching diverse learners within particular institutional cultures [3]. Field experience, mentoring, and structured reflection therefore contribute to professional readiness by helping pre-service teachers interpret uncertainty, evaluate their decisions, and refine their practice [4, 5].

State sports secondary schools provide an especially demanding context for such professional learning. These schools pursue two closely connected aims: strong academic education and the development of athletes who compete at district, state, national, or higher levels. The resulting dual-career environment includes training sessions, competitions, travel, variable attendance, physical fatigue, and the continuing expectation that students meet curricular requirements. Research on student-athletes has shown that the combined demands of study and sport can affect academic self-regulation and increase vulnerability to procrastination and burnout when support is insufficient [6, 7]. A practicum in this setting therefore provides an opportunity to examine how a pre-service teacher adapts instruction without lowering academic expectations.

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Teacher preparation is often organised around conventional classroom conditions, and fewer reflective accounts have considered how pre-service Biology and Science teachers learn within a specialised dual-career setting. This commentary examines how a practicum in a state sports secondary school contributed to flexible pedagogical practice, adaptive classroom management, and professional identity formation. It addresses four questions: how the pre-service teacher responded to students' variable readiness and attendance; how academic learning was balanced with athletic commitments; how mentoring, co-curricular participation, and institutional change shaped professional growth; and how systematic reflection influenced the teacher's developing identity. The paper is an interpretive account of one placement rather than an evaluation of the school or a claim that the experience represents all sports schools.

Methodology

This paper adopted a reflective narrative approach to examine the professional learning of the pre-service teacher, Fatin Nur Insyirah Mohamad Yusniza, during a teaching practicum at Sekolah Menengah Kebangsaan Seksyen 11 (SSN Selangor), Shah Alam, Selangor, Malaysia, from 30 March to 31 July 2026. The school combines formal secondary education with structured sports training and boarding provision. The practicum involved lesson planning, Biology and Science instruction, assessment, classroom management, co-curricular participation, school programmes, and engagement with the daily professional routines of the school. A reflective narrative approach was appropriate because the purpose was to interpret learning through experience and critical reflection rather than to measure outcomes quantitatively [4, 8].

The placement was supported by university and school-based supervision. Professor Dr. Chee Kong Yap supervised Science teaching, Miss Nur Atikah Saleh Hodin supervised Biology teaching, and Mrs. Suzila Shafiee served as the school mentor teacher (*guru pembimbing*). The supervisory process included lesson observations, feedback, professional dialogue, and guidance on planning, instruction, and classroom management. This partnership created opportunities for the pre-service teacher to examine her decisions with experienced educators and progressively strengthen her confidence and pedagogical judgement. Collaborative mentoring is most productive when pre-service teachers participate actively in inquiry and reflective dialogue rather than observe practice passively [9].

Throughout the placement, the pre-service teacher maintained reflective records of lesson delivery, student engagement, classroom challenges, instructional adaptations, interactions with colleagues, co-curricular participation, and perceived professional growth. After the practicum, these records were consolidated into a reflective report and presented to the university supervisors. The presentation enabled significant experiences to be discussed, interpretations to be clarified, and the written account to be checked against the teacher's oral explanation.

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 organised them into themes concerning responsive teaching, the relationship between academic and athletic development, school engagement and adaptation, mentoring, and professional identity. Interpretations were discussed among the authors and refined for

coherence with the original reflective record. The oral presentation provided an additional opportunity to clarify the meaning of specific experiences. Because this paper analyses one pre-service teacher's reflections, its contribution is interpretive and context-specific; it does not claim statistical generalisability. No student names, individual performance data, or other personally identifying student information are reported.

Reflective Observations and Discussion

Figure 1 illustrates how teaching student athletes involves three interconnected dimensions. Responsive Biology and Science teaching addresses variable attendance, fatigue, concentration, and readiness through practical work, collaborative learning, movement, educational games, adjusted pacing, and immediate feedback. Academic and athletic balance is supported through adaptable lessons, recovery of missed learning, clear expectations, and equitable support, while recognising that sport can strengthen discipline, teamwork, resilience, and time management. Professional growth develops through mentoring, school engagement, collaboration, adaptation to disruption, continuing learning, and deliberate reflection. Together, these dimensions support a responsive professional identity and the holistic intellectual, physical, emotional, and social development of student athletes.

Teaching biology in a student athlete environment

Teaching Biology and Science in a state sports secondary school required close attention to the conditions under which students were learning. Training, competitions, and travel occasionally affected attendance, energy, concentration, and continuity of learning. Some students found it difficult to sustain attention during lengthy teacher-led explanations, particularly after demanding physical activity, while competition-related absences produced differences in progress within the same class. These observations encouraged the pre-service teacher to interpret disengagement within its context rather than simply as a lack of interest or effort. The central instructional question became how to preserve curricular expectations while making learning accessible to students whose readiness could vary from one lesson to the next.

A range of student-centred strategies was therefore used to increase participation and provide multiple ways of engaging with scientific ideas. Biology lessons included experiments on digestion and balanced nutrition, case studies, quizzes, structured worksheets, reinforcement exercises, and collaborative investigations. Science lessons included gallery walks, seed-germination experiments, construction of menstrual-cycle models, group presentations, peer learning, mind maps, Educaplay activities, Quizizz paper mode, brief quizzes, and cooperative tasks. These approaches reduced prolonged passive listening and enabled students to learn through movement, discussion, visual representation, experimentation, and explanation. Students generally responded more positively to lessons that combined scientific inquiry with active participation than to extended teacher-centred delivery. This observation is consistent with evidence that active learning can improve student performance in science and related fields [10] and that well-designed student-centred approaches can strengthen engagement and responsibility [11].

Pedagogical adaptability involved more than varying classroom activities. It required the teacher to monitor students' physical readiness, recover missed learning, adjust pacing, provide immediate feedback, and decide when collaboration or movement would help

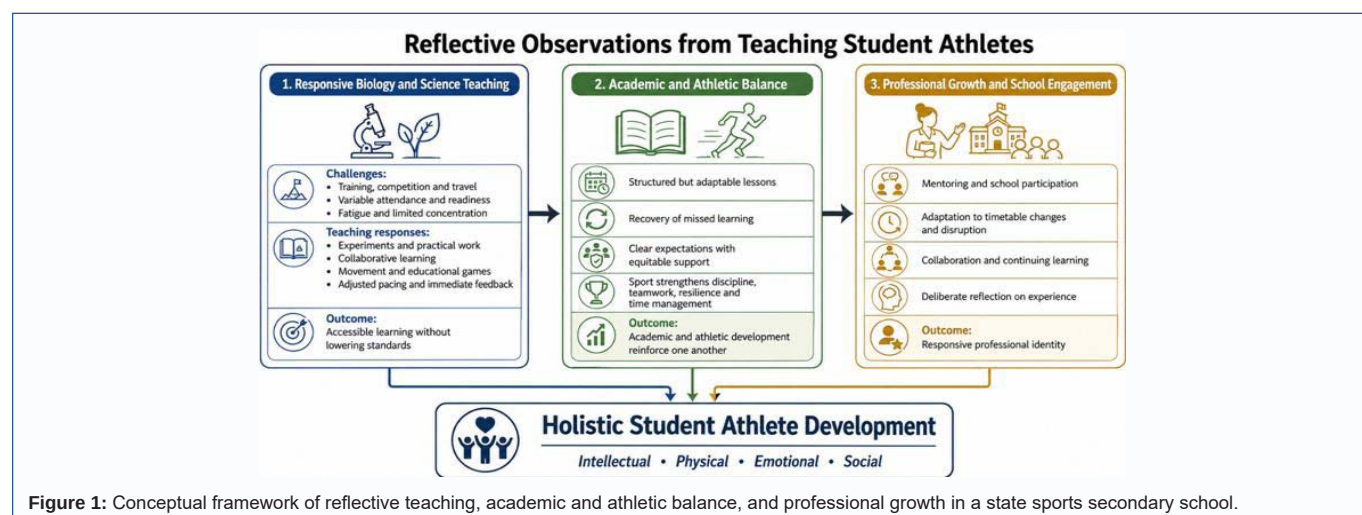


Figure 1: Conceptual framework of reflective teaching, academic and athletic balance, and professional growth in a state sports secondary school.

students re-engage. Practical work, educational games, positive reinforcement, and short, purposeful tasks were particularly useful when attention was limited. Flexibility did not mean lowering standards. Rather, it meant creating reasonable routes through which students could continue to develop scientific understanding despite competing commitments. The experience strengthened the view that rigorous Biology and Science teaching in a sports school must be responsive, compassionate, and reflective. Education and sport were most productive when treated as complementary parts of students' development rather than as separate domains.

Balancing academic learning and athletic development

A defining lesson of the practicum was that academic learning and athletic development should not automatically be treated as competing priorities. At SSN Selangor, students were expected to develop in both domains, yet training, competitions, and specialised coaching inevitably intersected with the academic timetable. Some students needed support after missing lessons, whereas others required adjusted pacing or concise reinforcement to reconnect with ongoing topics. These experiences made it necessary to see each student not only as a classroom learner but also as an athlete managing a demanding schedule. Such recognition helped the teacher respond to genuine constraints without making assumptions about ability or commitment.

Effective teaching in this setting depended on lesson plans that were structured but adaptable. Building on the strategies described in Section 3.1, lessons incorporated movement, collaboration, practical investigation, educational games, and timely feedback. These formats offered entry points for students with different levels of readiness and helped the teacher identify misunderstandings quickly. Supportive relationships and positive reinforcement also encouraged participation. The experience suggested that equity does not require identical treatment in every circumstance. It requires access to meaningful learning while expectations remain clear. This interpretation is consistent with research showing that active learning can support participation and conceptual understanding across diverse learning conditions [10, 12].

Direct engagement with student-athletes also revealed ways in which academic and athletic development can reinforce one another. Discipline, perseverance, teamwork, time management, and resilience developed through sport were often visible in classroom

participation. Conversely, academic progress could strengthen confidence, judgement, and future options beyond competition. This interpretation accords with the developmental and holistic model of athletic careers, which regards sporting, educational, psychological, and social development as interconnected [13]. Teachers can support this balance through clear communication, coordinated expectations, careful monitoring, and flexibility when legitimate sporting commitments interrupt learning. UNESCO's quality physical education framework [14] similarly places physical development within a broader educational purpose. State sports schools therefore illustrate how educators can contribute to the intellectual, physical, emotional, and social development of young athletes.

Professional growth through adaptive teaching and school engagement

Professional learning extended beyond classroom instruction. Participation in the school-level Hari Raya and Teachers' Day celebrations, Hari Jalinan Prestasi, Hari Anugerah Kecemerlangan, mural painting, and co-curricular activities broadened the pre-service teacher's understanding of the profession. Involvement with the Peer Support Group (Pembimbing Rakan Sebaya), Puteri Islam, and the girls' football programme revealed teachers' roles as mentors, facilitators, organisers, and role models. Informal interaction during these activities also provided a fuller understanding of students' interests, aspirations, relationships, and well-being. The experience showed that professional competence develops within the wider life of a school, not only through lesson delivery.

The practicum also involved disruption and uncertainty. When the supervising teacher transferred to another school, opportunities for regular mentoring temporarily decreased. The pre-service teacher responded by consulting other Science teachers and using reputable digital educational resources to review concepts and explore instructional ideas. Frequent timetable changes, competition-related absences, and disciplinary concerns involving some hostel students also required revisions to lesson plans, flexible classroom management, and closer monitoring of learning continuity. These challenges showed that teaching competence is not demonstrated only when a prepared lesson proceeds as expected. It is also evident in the capacity to make defensible adjustments while preserving educational purpose, student dignity, and curricular quality.

Reflection on these experiences reshaped the pre-service

teacher's emerging professional identity. At the beginning of the placement, effective teaching was understood mainly as clear delivery supported by sound subject knowledge and suitable methods. By the end, teaching was understood more broadly as a relational and interpretive profession requiring mentorship, communication, collaboration, problem-solving, and continuing learning. Positive teacher-student relationships helped sustain participation and motivation while students managed academic and sporting demands. Equally important, reflection converted daily events into material for professional improvement: a difficult lesson prompted reconsideration of pacing, an absence prompted attention to continuity, and an institutional change prompted the search for new sources of support. Professional identity was therefore formed through the interaction of knowledge, experience, relationships, and deliberate reflection, a process also emphasised in research on work-integrated learning [15].

Conclusions

The teaching practicum in a state sports secondary school provided professional learning that extended beyond Biology and Science instruction. Working in an environment that pursued academic achievement and athletic excellence broadened the pre-service teacher's understanding of the responsibilities of educators in specialised settings. Effective teaching required subject knowledge and pedagogical planning, but also flexibility in response to variable readiness and attendance, empathy for the demands experienced by student-athletes, and the capacity to design engaging learning without weakening curricular expectations. Classroom instruction, assessment, mentoring, co-curricular participation, school programmes, and collaboration collectively strengthened pedagogical judgement and reinforced the importance of reflective practice.

This reflective commentary shows how a specialised practicum can contribute to the formation of a responsive professional identity. The placement required the pre-service teacher to connect academic and athletic development, adjust instruction to changing circumstances, participate in the wider school community, and learn constructively from disruption. Its conclusions are necessarily limited to one reflective account in one school, yet the experience offers a useful implication for teacher education: practicum placements should expose future teachers to varied educational contexts and provide structured opportunities for mentoring and reflection. Such experiences can help pre-service teachers develop the adaptability, collaboration, and ethical attentiveness needed to support diverse learners while maintaining academic purpose.

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 text and accept responsibility for its accuracy, originality, and integrity.

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