

## **Pre-service teachers' experience with writing lesson outcomes at a South African university: an emerging reflective awareness**

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### **Abstract**

*Although lesson planning is widely regarded as a crucial skill that pre-service teachers must master, writing clear and measurable lesson outcomes remains a persistent challenge. This study investigates the experiences of 150 second-year Bachelor of Education students at a South African university as they engaged in writing lesson outcomes and reflecting on their practice. In this qualitative phenomenological study, data were collected through a formal assessment that required students to design and reflect on their lesson plans. Thematic analysis revealed four key themes: lack of clarity, ambiguous verb selection, challenges in curriculum implementation, and difficulties in applying knowledge of Bloom's taxonomy and SMART criteria to practice. A significant finding is that, despite these challenges, participants demonstrated a growing awareness of the importance of reflection in writing lesson outcomes. They expressed the need for a more scaffolded approach and practical opportunities to translate theory into practice. Integrating iterative feedback, peer review, and contextualised exemplars could empower pre-service teachers to design authentic, engaging, and practical lesson outcomes as a foundational step in lesson planning.*

**KEYWORDS:** pre-service teachers, lesson planning, lesson outcomes, reflection, Bloom's taxonomy, constructive alignment

### **Introduction**

Lesson planning is a crucial skill that pre-service teachers must master. As an integral part of a lesson plan, lesson outcomes convey instructional intent, the direction of the lesson, and how time is allocated (Cevikbas et al., 2023; Lumbreras & Rupley, 2020). They also specify the cognitive level of learning and provide measures to assess learning (Achmad et al., 2023;

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Sebullen, 2023). Importantly, they recognise the unique context in which the lesson will take place. Literature, however, shows that most pre-service teachers report experiencing significant challenges with planning lessons, specifically with writing learning outcomes. Despite the time and effort spent on this skill as part of their coursework, pre-service teachers continue to struggle with this component. This study explores not only the quality and feasibility of the outcomes second-year students conceptualise, but also, more importantly, their emerging reflective awareness of the challenges they experience.

## LITERATURE OVERVIEW

### **An evolution of theories and practice**

For decades, Tyler's linear rational means-end model (Tyler, 1950) was the most popular guidance for lesson design. He proposed using rigid templates to identify objectives, design activities, and ultimately develop assessments to measure the outcomes. Critiques of this model, including seminal work by John (2006), postulated that the process should be more flexible, with teachers first selecting instructional activities and then developing learning outcomes that are assessed through various methods. John concludes that "the creative, problem-solving, 'intelligent' aspects of planning and teaching become lost as students are encouraged to conform to rigid templates" (John, 2006, p. 495). Other critics, such as Clark and Yinger (1977) and Lammert and Godfrey (2025), further argue that lesson planning should be a dynamic and organic process that is highly contextualised and dependent on the individual, rather than on a prescribed and linear model. This initiated the development of the integrated ends-model (Calderhead, 1996; Mutton et al., 2011). Embracing similar ideas, Wiggins et al. (1998) suggested a backwards design model for lesson planning. Later, Flynn et al. (2004) refined this model through a two-step planning framework, including a discovery phase that focuses on what learners need to accomplish and an exploratory phase that unpacks the scaffolding required to reach those objectives. Exploratory tasks should only be conceptualised after the outcome of the discovery phase has been established. This proposal confirms the backwards planning perspective that ensures constructive alignment between lesson outcomes, activities, and assessments.

Since the work of these scholars remains reputable and relevant, it seems that regardless of whether a teacher chooses to conceptualise lesson outcomes as the first step of planning, or whether they followed a more organic approach where objectives are a component that could be planned during any stage of the process, it seems inevitable that creating effective lesson

outcomes alongside instructional activities and assessment practices, is crucial for successful lesson planning.

### **Persisting challenges with lesson planning**

Despite efforts made to revolutionise lesson planning over the past few decades, a growing body of research continues to highlight that students in various contexts persistently report challenges with lesson planning. Sahin-Taskin (2017) and Achmad et al. (2023) confirmed that, although their students recognise the importance of lesson planning, they still experience significant challenges with the process. Whilst studying Philippine students' experiences with integrating ICT in lesson planning, Sebulen (2023) noted the creation of lesson outcomes as one of the most significant struggles pre-service teachers experience. In a South African context, scholars like Botes et al. (2022), Gravett and van der Merwe (2023) and Kola (2021) report that while some students enjoy the creative process of lesson planning, others find the process difficult and even stressful. These authors concur that writing lesson outcomes using prescribed templates are experienced as significantly challenging. Literature and university course materials remain heavily dominated by theories and practical guidelines supported by standardised lesson plan templates and fixed linear models of practice.

This persistent over-reliance on a generic step-by-step model, almost like a recipe to be followed, may come at a cost. Several scholars have critiqued prescribed lesson planning templates and reminded us that planning is contextual and adaptive, rather than merely following step-by-step procedures. Afdal and Maaranen (2023) and König et al. (2021) warn that templates often reduce learning to a checklist rather than embracing the complex and engaged nature of the process. In accordance, McCreary (2022, p. 1) calls for a shift in focus from constantly rehashing the “wicked problem” of relying on concrete strategies to more nuanced and intuitive decision-making, and, in turn, more autonomy for teachers. Scholars agree that acknowledging the complex nature of lesson planning and teaching should serve as the premise from which training is conducted. Guiding pre-service teachers to be reflective practitioners who can make informed decisions, rather than expecting them to be mere recipe-followers, could create an environment where the reflective and professional judgment capabilities of the pre-service teachers are enhanced. This will enable them to better balance the structure required for effective lesson plans with the autonomy to adapt these plans when needed.

## **Pedagogical design tools for writing lesson outcomes**

An extensive range of pedagogical design tools are available to guide students towards effective lesson planning, specifically, lesson outcomes. They support conceptualisation and scaffolding in thinking to ensure measurability and constructive alignment, while also creating space for contextuality and creativity. One such tool that seems popular in teaching programmes is SMART tasks. Originally developed by Doran (1981) for use in the human resources and business management sectors, the SMART mnemonic depicts five criteria used to set and measure goals. Effective goals should be *specific, measurable, attainable, realistic, and time-related* (Doran, 1981). In the 1990s, the use of these criteria in educational contexts gained traction in the United Kingdom first as a tool for setting targets as part of curriculum reform and later, on a more global scale, as a viable and reliable source to clarify intentions in lesson outcomes (Chatterjee & Corral, 2017).

In the mid-1990s, post-apartheid curriculum reform in South Africa introduced outcomes-based education (OBE) (South Africa, 2002) and later the Curriculum and Assessment Policy Statement (CAPS) (South Africa, 2011) as national policy and curriculum documents for basic education. Critiques of the current CAPS curriculum are abundant and include a focus on content coverage rather than deep learning and an exceptionally heavy assessment load (Ajani, 2021; Ojo & Mathabathe, 2021). In a comprehensive report on the implementation of the Foundation Phase CAPS, Pretorius and Murray (2023) fear that the prescriptive nature of the curriculum leaves little room for autonomy and creativity – exactly what seems to be required for effective lesson planning.

Amidst the struggles South African teachers experience in adhering to the requirements of the CAPS document, SMART tasks are set as a benchmark for lesson plans as they rely heavily upon learning outcomes and assessment standards to regulate progression and scaffold learning. Combining SMART tasks with the core pedagogical elements of constructive alignment creates a more flexible, yet theoretically grounded framework for lesson planning.

Biggs (2003) argues that constructive alignment, more than a curriculum or taxonomy, should be at the core of teaching, and especially of lesson planning:

*The ‘constructive’ aspect refers to what the learner does, which is to construct meaning through relevant learning activities. The ‘alignment’ aspect refers to what the teacher does, which is to set up a learning environment that supports the learning activities appropriate to achieving the desired learning outcomes (Biggs, 2003 p 2).*

Such a systematic and aligned approach provides a context for teachers to interpret the curriculum, ensure active learning, meet prescribed outcomes, and strive towards diverse cognitive functioning. The components of constructive alignment, measured against the SMART criteria, have become the basis for many lesson planning templates that pre-service teachers use (Lumbreras & Rupley, 2020; Seherrie & Solomon, 2021). Although SMART tasks provided a lens through which lesson plans could be evaluated, various taxonomies have also been a popular tool to guide planning and setting lesson outcomes.

In 1956, Benjamin Bloom and colleagues developed arguably one of the most well-known structures for teachers to identify the learning they can anticipate from their students (Bloom et al., 1956). Hierarchical levels of cognitive complexity facilitate the plotting of learning, as each category represents an increasingly complex type of thinking. Anderson and Krathwohl (2001) revised the original Bloom's taxonomy with a shift from the original classification to an updated framework with a two-dimensional structure<sup>1</sup>. As an additional tool, several master lists with illustrative verbs were later developed for each of Bloom's taxonomy levels. These are categorised according to intent, learning outcomes and assessment. Despite the reliance of many pre-service teachers on these supporting tools, such as Bloom's taxonomy and SMART criteria, there still remains a gap in research regarding the responsibility of teacher educators and pre-service teachers to develop their skills as reflective practitioners in this process. This article attempts to address that gap by exploring the experiences of a cohort of pre-service teachers regarding writing lesson outcomes.

## METHODOLOGY

I teach a second-year core module in the Bachelor of Education (B.Ed.) programme at a university in South Africa, which focuses on teaching strategies, lesson planning, and assessment. From the outset, it is essential to acknowledge that student challenges with lesson planning and preparation are not limited to this module but appear to be an institutional phenomenon. In addition to dealing with lesson planning in core modules, students hone these skills in their specialised disciplines and during school-based practicum placements, where they experience real-world classroom environments. Using multiple lesson plan templates and receiving multiple inputs on best practices in lesson planning from various sources may partially explain some of the difficulties that I suspect students are experiencing.

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<sup>1</sup> Currently suggestions are made to again revise Bloom's taxonomy to include knowledge and learning in the era of large language models and artificial intelligence

Considering the above, I wondered about the factors my students consider when planning lessons and specifically when conceptualising lesson outcomes. Driven by my curiosity, I conceptualised a formative assessment task guided by the following research questions:

- How do pre-service teachers experience the process of writing lesson outcomes?
- How do pre-service teachers select action verbs for lesson outcomes?
- To what extent did they utilise the curriculum document to guide their outcomes?
- How, if at all, do pre-service teachers reflect on lesson outcomes?

This qualitative study adopted a phenomenological approach and a transformative paradigm to explore the experiences of a sample of 150 full-time B.Ed students enrolled for a second-year core module at a South African University. Although qualitative research is traditionally associated with smaller samples, whole-population sampling was used to capture the full range of lived experiences of all pre-service teachers enrolled in the module. The diverse perspectives, challenges, and reflections of all participants were necessary to not only present the findings of this study but also respect the essence of shared experience. The intention was never to generalise findings, but rather to obtain a deep, rich understanding of individual and collective pedagogical experiences within the unique context of this module and programme. I believe that this departure from traditional qualitative research, grounded in a phenomenological paradigm, presents a nuanced and authentic view of a relevant topic.

As a lecturer and researcher, I was fully committed to a rigorous and iterative process of first grading the assignments and subsequently coding the data. This cross-checking ensured trustworthiness within the large sample. Repeatedly engaging with the data further ensured that credibility and transferability were supported by providing complete and rich descriptions of the lived experience of participants that could also be applicable to other contexts. A clear audit trail and triangulation ensured dependability as another component of trustworthiness. As a researcher and lecturer, I had to ensure that personal bias was excluded from data analysis and interpretation, and therefore all data were anonymised before analysis.

Ethical clearance for the study was obtained from the relevant stakeholders, and students provided informed consent. Data were collected through two primary sources. Firstly, written assignments from a formative assessment task that students were required to complete as part of the module's assessment plan. In this assignment, students were required to create a lesson plan for their chosen subject. In the second part of the assignment, they were encouraged

to critically reflect on the process of creating the lesson plan, rather than merely on the final product itself. They were invited to critically think about their competency and identify areas where they might need more guidance or practice. To analyse the data, I first performed a content analysis of the lesson outcomes they produced, identifying strengths, weaknesses and searched for patterns and trends. Secondly, I critically evaluated the section of their reflective essays, where they considered their experiences, successes, and challenges in writing lesson outcomes. I identified themes and categories after conducting an inductive thematic analysis on the lesson plans (specifically focusing on lesson outcomes) and the reflective essays. Atlas TI was used to assist with initial coding. The themes identified from critically analysing the lesson outcomes were confirmed in their reflections on their experiences and challenges with setting lesson outcomes. Verbatim quotations were used to support this. Validity and reliability were ensured through triangulation and member checking in feedback sessions with the students.

## FINDINGS

### Clarity versus complexity in lesson outcomes

Analysis of lesson outcomes and student reflections indicates a lack of clarity in most lesson outcomes. Outcomes are vague, complex and laden, which makes them challenging to execute, monitor, and evaluate. Table 1 elucidates common errors that contribute to complex lesson outcomes rather than clear and direct outcomes.

Table 1: Common student errors that compromise clarity

Action	Example	Findings
<b>Using multiple verbs in one outcome</b>		
<b>Including more than one verb per outcome</b>	<i>At the end of the lesson learners should identify and describe and analyse the poem (P111, Sen/FET phase<sup>2</sup>, Grade 9 English).</i>	It will be difficult to measure mastery of the outcome.  Students will struggle to meet all the outcomes in a limited time period.

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<sup>2</sup> Pre-service teachers in South Africa specialise in one of three phases, namely Foundation phase (Grade 1 – 3), Intermediate Phase (Grade 4 – 7), Senior and Further Education and Training phase (Sen/FET) for learners in grade 8 – 12. Students in all phases are enrolled for this generic module of the B.Ed programme.

<p><b>Randomly selecting verbs</b></p>	<p><i>...learners should explain the importance of recycling and how it impacts the environment and compare it to other waste methods. (P29, Intermediate phase, Grade 5 Social Science)</i></p>	<p>Some students admitted to randomly selecting verbs like a checklist without contemplating the intent or level of thinking that the verb entails.</p>
<p><b>Using multiple concepts in one outcome</b></p>		
<p><b>Including multiple concepts in one lesson</b></p>	<p><i>Lesson outcome 1: At the end of the lesson learners should define and identify verbs and nouns.</i></p> <p><i>Lesson outcome 2: At the end of the lesson learners should write and edit verbs and nouns (P68, Intermediate phase, English Grade 7)</i></p>	<p>A lack of clarity on the concept addressed by the lesson outcome can lead to a lack of coherence in the lesson.</p> <p>It would be very challenging to measure the success of this lesson, as a learner might be able to identify a verb, but not a noun, or they might be able to write a paragraph, but not have the skills needed to edit, which is also required by the outcome.</p>
<p><b>Using activities rather than competencies</b></p>		
<p><b>Including multiple competencies in one outcome</b></p>	<p><i>...know how to respect family and be able to make tea for their grandmother (P101, Foundation phase, Life Skills Grade 1).</i></p>	<p>Students find it challenging to distinguish between knowledge, skills and values. This outcome includes both skills (the steps to making a cup of tea) as well as values (the importance of respect in a family). Again, the teacher's ability to measure the success of this outcome is doubtful.</p>

<p><b>Include activities in outcomes</b></p>	<p><i>...explain and understand photosynthesis and draw a diagram (P55, Grade 10 Life Science)</i></p>	<p>Participants' outcomes included activities rather than competencies. Worksheets, puzzles, posters, etc., were frequently used. It is unclear whether students consider activities as a means to measure learning, rather than using action verbs for that purpose.</p>
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In the reflections, it seemed that the students had some awareness of these trends, but they did not feel confident or possess the necessary skills to address the challenges. Many participants were honest about their struggles with writing lesson outcomes and acknowledged that they underestimated the importance of this in facilitating learning. Participant 38 (Foundation phase, English first additional language) admitted that in the past she randomly selected verbs, but after reflecting on this assignment, she realised that *“I always thought it was so easy, but I didn’t expect that choosing the correct verb and keeping to one concept would be this tricky.”*

Comments in the reflections also highlighted that, although these students received theoretical guidance on lesson planning in various core and elective modules, they struggled to translate the theory into practice. As a result, many of their intended outcomes were vague and complex and often misaligned with the intended learning and prescribed curriculum. From their limited practical experience, they could recognise that poor outcomes made tracking progress and assessing learning in various forms difficult, and prevented constructive alignment in their proposed lessons. These findings were corroborated by scholars such as Sebulen (2023) and Kola (2021).

This potential problem is exacerbated in the next theme, where the ambiguous verb choices are further unpacked.

### **Ambiguity versus certainty in selecting action verbs**

A significant finding in this study was that many students repeatedly use vague and non-measurable verbs and emphasise lower-order verbs. Table 2 elucidates common errors reflected in lesson outcomes.

Table 2: Common student errors in selecting action verbs

Action	Example	Findings
<b>Over-emphasis on lower-order verbs</b>		
<b>Excessive use of lower-order verbs like define, describe, etc.</b>	<i>...describe economy</i> (P45, Sen/FET phase, Grade 10 Business studies)	It is difficult to assess progress and scaffolding throughout the curriculum when only lower-level verbs are selected. It is also difficult to measure skills with lower-order verbs.
<b>Over-reliance on vague verbs</b>		
<b>Ambiguity caused by non-measurable verbs</b>	<i>...learners should understand interior decorating</i> (P47, Sen/FET phase, Grade 10 Home Economics).  <i>Learners should be know about water safety</i> (P28, Foundation phase, Grade 3 Life Skills)	Action verbs are intended to assess learning, whereas vague verbs make it impossible to ascertain which cognitive level the teacher is aiming at.  It is not feasible to measure progression and scaffolding by these types of verbs.
<b>Verb-content discrepancies</b>		
<b>Selecting higher-order verbs without considering time requirements</b>	<i>Learners should analyse World War II</i> (P40, Sen/FET phase, Grade 11, History)	Students do anticipate the extent and time commitment of higher-order action words like analysis, evaluation and creative thinking. This would inevitably lead to them being unable to cover everything they envisaged for that lesson.
<b>Random selection of higher-order verbs</b>	<i>They must improve their reading</i> (P103, Foundation Phase, English Home language, Grade 1)  <i>...be able to analyse the poem and answer questions correctly</i> (P55,	Choices of higher-order verbs often seemed random, rather than well thought through. It might be considered that students merely selected higher-order verbs because they were taught that it is expected of them, rather than basing their selection on the necessity for teaching specific content or skills.

	Intermediate phase, Grade 7, English Home language)	
<b>Action verbs are not age-appropriate</b>	<p><i>At the end of the lesson learners should create and evaluate a water safety plan</i> (P58, Intermediate phase, Grade 4 Life Skills)</p> <p><i>...analyse basic shapes</i> (P79, Foundation phase, Grade 2, Mathematics)</p>	Lesson outcomes are not age-appropriate or relevant to the skills of that age group of learners. The higher-order verb students select seems unsuitable for the basic concept it links to. Additionally, it does not accurately reflect the intent of the curriculum document for that topic and specific year.

Students reveal that they consider these non-measurable verbs “easy” to choose because they are used more often in the general vernacular that teachers use. They think that using words like “understand” or an overreliance on lower-order verbs might allow them to gauge learning without considering the deeper meaning of learning. Reflections often reveal a lack of confidence or difficulty in breaking down complex concepts and effectively connecting the necessary competencies required for higher-order tasks to that concept. Students found it easier to focus on outcomes, often neglecting other competencies needed for a successful learning experience, such as critical thinking, problem-solving, and creativity. This seems to have been a challenge that pre-service teachers have been experiencing for decades (Lee & Zhai, 2024; Walton et al., 2011).

The data suggests that students view taxonomies like Bloom’s as linear hierarchies rather than as a complex and dynamic approach to engaged learning. Not a single student envisioned a higher-order thinking skill to help their students complete lower-level tasks. It can be postulated that students consider lesson outcomes as silos, each linked to a specific action verb, rather than considering constructive alignment, where all outcomes coherently align with learning tasks and assessments to form a complete and effective learning engagement.

### **Coverage versus Coherence**

#### ***Interpreting the curriculum***

In South Africa, teachers in public schools derive lesson outcomes from a national curriculum statement document, known as the Curriculum and Assessment Policy Statement (CAPS) for

their specific phase and subject (South Africa, 2011). This document, however, does not provide pacing for individual lessons as the content is presented in weekly cycles. It remains the teacher's responsibility to determine the tempo and pacing for daily lessons. To illustrate, Figure 1 provides an extract from the CAPS document for Grade 10 Geography.

**GEOGRAPHY in Grade 10**

Grade 10	FET Band		Term 1
<b>Topic:</b>  <b>THE ATMOSPHERE</b>	<b>Time:</b>  <b>± 36 hours</b> (includes consolidation, revision as well as formal and informal assessment)	<b>Recommended teaching and learning support material:</b> <ul style="list-style-type: none"> <li>• Atlases</li> <li>• Websites like <a href="http://www.weathersa.co.za">http://www.weathersa.co.za</a></li> <li>• Weather measuring instruments</li> <li>• Synoptic weather maps and satellite images</li> <li>• Weather reports from the media</li> <li>• Selected DVDs, e.g. <i>An Inconvenient Truth</i></li> </ul>	
<b>GEOGRAPHICAL KNOWLEDGE</b>			
<b>Composition and structure of the atmosphere</b> <ul style="list-style-type: none"> <li>• Importance of the atmosphere</li> <li>• The composition and structure of the atmosphere – troposphere, stratosphere, mesosphere, thermosphere</li> <li>• The ozone layer – in the stratosphere</li> <li>• Causes and effects of ozone depletion</li> <li>• Ways to reduce ozone depletion.</li> </ul>			<b>[5 hours]</b>
<b>Heating of the atmosphere</b> <ul style="list-style-type: none"> <li>• Processes associated with the heating of the atmosphere - insolation, reflection, scattering, absorption, radiation, conduction, convection.</li> <li>• The Greenhouse Effect – impact on people and the environment.</li> <li>• Factors that affect the temperature of different places around the world - latitude, altitude, ocean currents, distance from oceans.</li> <li>• Global warming- evidence, causes, and consequences with reference to Africa.</li> <li>• The impact of climate and climate change on Africa's environment and people - deserts, droughts, floods, rising sea levels.</li> </ul>			<b>[8 hours]</b>
<b>Moisture in the atmosphere</b> <ul style="list-style-type: none"> <li>• Water in the atmosphere in different forms – water vapour, liquid, ice.</li> <li>• Processes associated with evaporation, condensation and precipitation.</li> <li>• The concepts of dew point, condensation level, humidity, relative humidity - factors affecting relative humidity.</li> <li>• How and why clouds form.</li> <li>• Cloud names and associated weather conditions.</li> <li>• Different forms of precipitation – hail, snow, rain, dew, frost.</li> <li>• Mechanisms that produce different kinds of rainfall – relief, convectional, frontal.</li> </ul>			<b>[8 hours]</b>
<b>Reading and interpreting synoptic weather maps</b> <ul style="list-style-type: none"> <li>• Weather elements – temperature, dew-point temperature, cloud cover, wind direction, wind speed, atmospheric pressure.</li> <li>• Weather conditions – e.g. rain, drizzle, thunderstorms, hail, snow as illustrated on station models.</li> <li>• Reading and interpreting a selection of synoptic weather maps.</li> </ul>			<b>[6 hours]</b>

Figure 1: Excerpt from the CAPS document for Geography, Grade 10 -12 (South Africa, 2011)

Analysing the content of this figure reveals that pre-service teachers must determine how much content can be covered in one lesson and then select a relevant and suitable action word to indicate the depth of knowledge appropriate for that age group of learners. Further analysis reveals that this document contains very few action words. The only action words in these examples are “reading and interpreting a selection of synoptic weather maps”. Other statements are vague and open to interpretation, e.g. “mechanisms that produce different kinds of rainfall – relief, convectional, frontal”. It would be up to the pre-service teacher to determine whether this kind of rainfall needs to be defined, identified, described, or whether the learner might need to employ higher-order skills, such as comparing or interpreting. South African researchers and teachers alike have been vocal about their critique of the current CAPS as the national curriculum (Ajani, 2021; Ojo & Mathabathe, 2021).

As mentioned, the participants in this study are second-year students; at this stage of their studies, they are only grappling with individual lesson plans and have not yet been introduced to the concept of teaching in cycles or using a weekly plan. Consequently, they think of individual lessons in isolation and feel obliged to complete as much as possible within one period. The problems that this causes are evident in findings from this study:

Table 3: Common errors with curriculum implementation

Action	Example	Findings
<b>Interpretation of the curriculum document</b>		
<b>Struggle to align outcomes with curriculum guidelines</b>	<i>I did not really even use the CAPS document. I simply made up some outcomes.</i> (P7, Foundation Phase, Grade 3, Life Skills)	Due to their struggles with interpreting the curriculum document, it is simply ignored, and students choose lesson outcomes with only a theme in mind and without referring to the guiding document or considering progression through the term and across different years within the same teaching phase.
<b>Outcomes are not age-appropriate or relevant</b>	<i>...learners should critically evaluate the role of the media in shaping public opinion.</i> (P156, Foundation phase, Grade 3 Life Skills)  <i>“...evaluate the fairness of apartheid policies”</i> (P97,	These abstract lesson outcomes are not aligned with any prescribed topic in the relevant CAPS document for that year. Competencies like vocabulary, prior knowledge, and existing skills must be considered when conceptualising outcomes to avoid outcomes that are

	Intermediate phase, Grade 4 Social Science)  <i>“create their own word problems”</i> (P110, Foundation phase, Grade 2 Mathematics)	cognitively or emotionally too advanced and complex.
<b>Pacing</b>		
<b>Too many outcomes or too much content for one time period</b>	<i>I wanted to include everything CAPS stated about that topic, but then my outcomes were too long and had too many verbs.</i> (P55, Intermediate phase, Social Science)  <i>I struggled to make the outcomes realistic because the topic was too big for one period</i> (P129, Sen/FET phase, Life Science)	Lack of practical experience leads to struggles in determining the body of knowledge or skills that can be covered in one period. Students are challenged with allowing enough time to cover the breadth and depth of material in a very full curriculum; they do not consider time for differentiation, individualisation and adaptation where needed.
<b>Isolated focus on individual periods rather than cycles</b>	<i>...learners will be compare debit and credit transactions</i> (P18, Sen/FET phase, Grade 10 accounting)	The focus on an individual period rather than a week or a cycle highlighted their challenge to realise that higher-order tasks would take longer and could not be completed and achieved within a single lesson.

This was also evident in the subsequent theme, where outcomes were mostly content-heavy and focused on transmitting knowledge rather than creating knowledge and meaning-making.

### Recall versus reasoning

Pre-service teachers tend to set outcomes that mostly measure knowledge rather than skills and competencies. This is especially challenging when considering the need to incorporate metacognition and 21st-century skills into lesson planning. Popular taxonomies like Bloom's

do not pertinently address issues such as metacognition and self-directed learning, but again, these are only second-year students, so we should be aware of the need to address this in later years of study. It might, therefore, not be surprising that they focused on lower-level thinking, rather than compound competencies and higher-order tasks.

Such a rigid view of writing lesson outcomes creates a dilemma, where students do not have the ability to adapt lesson plans and outcomes when needed (Pietsch et al., 2024). This problem arises not only when the school day or circumstances suddenly change, but it is especially relevant when a teacher realises that the outcomes are too many, too complex, or too difficult, etc. In the assessment, students were required to set outcomes, then measure their progress against the SMART criteria and adapt where necessary. Most students chose not to adjust their initial lesson outcomes, which means they were unable to identify challenges when applying the SMART criteria to their outcomes.

### **Difficulty in translating SMART criteria to practice**

Although students are presented with theoretical knowledge of lesson planning and the value of taxonomies and tools such as SMART criteria (Doran, 1981), they lack the skills to put these into effective practice for writing lesson outcomes and ensuring constructive alignment in lessons. The data indicated that when asked to critically evaluate their own learning outcomes against these criteria, they mostly seemed unable to interpret the criteria and subsequently adapt their lesson outcomes. Most students opted to retain their original lesson outcomes after being asked to provide a detailed analysis of their outcomes against each criterion. This would include outcomes with all the challenges discussed above. Where they chose to adapt their outcomes, the reasons seemed aspirational and idealistic, rather than instructional and practical. Students did not identify their outcomes as too many for one lesson, non-measurable, vague, age-appropriate, or cognisant of the time required to meet the outcomes, etc. This finding indicates that second-year pre-service teachers are not yet proficient in reflecting on their efforts and making the necessary adjustments.

Aghera et al. (2018) postulated that introducing SMART criteria to the process of lesson planning for medical students did not improve the quality of the outcomes. This was supported by Bjerke and Renger (2017) who reported that the SMART criteria were ambiguous and did not contribute to practice. The question can therefore be asked whether introducing the SMART criteria to the students in this study truly contributed to their thinking process when

writing lesson outcomes, or whether it was just another theoretical concept they could define but struggled to find value in and apply.

### **An emerging awareness of the value of reflection**

Although the findings of this study highlight the challenges that second-year pre-service teachers experience with conceptualising lesson outcomes, the data also shows that, in a portion of students, an emerging awareness of the value of reflection is evident:

*I would like more examples of good and poor outcomes so that I can compare my efforts: (P94, Foundation phase, Grade 2, Mathematics)*

*I think I understand the idea now, I need to break down the CAPS document more when writing lesson outcomes” (P79, Sen/FET phase, Grade 11, Geography)*

*Next time I will try to get some feedback before I finalise my outcomes” (P52, Intermediate phase, Grade 6, Mathematics)*

In their personal reflections, some students indicated that they experienced professional growth through completing this assignment, in which they were motivated to critically reflect on writing lesson outcomes rather than consider them as an often-overlooked or rushed step in the lesson planning process. Participant 149 (Foundation phase, English home language) acknowledged that “*I never realised that lesson outcomes actually guided everything else in my lesson*”, whilst participant 99 (Sen/FET phase, Physical Science) grasped that “*taking my time in writing the outcomes made it easier to plan the activities and assessments.*” These realisations showed that some students started considering constructive alignment as a pedagogical tool and a cornerstone of lesson planning. Many students admitted that they knew the term 'constructive alignment,' but had never, before this assignment, understood its practical implications or importance. This is aligned with the findings of Lumbreras and Rupley (2020), who also explored alignment within lesson planning.

A selection of participants showed greater awareness of cognitive levels through the choice of more appropriate action verbs as a result of conscious, critical reflection on the suitability of their lesson outcomes.

*I realised that I most of the time use the wrong actions verbs like “understand”... I need to consider action verbs that can be measured and analysed” (P4, Intermediate Phase, Grade 5, Arts and Culture)*

Participant 107 (Intermediate phase, Grade 6, Mathematics) showed the value of reflecting on action verbs when she stated, *“I initially used analysed, but later realised that might be too difficult for my Grade 4 learners.”* Such a growing awareness is promising, but most students unequivocally indicated a need for more guidance on interpreting and utilising their chosen taxonomy. Participant 129 (Sen/FET, grade 8 Science) created a lesson outcome where she expected her students to *“explain and give examples of solids, liquids, and gases.”* (lower order). After using the SMART criteria to reflect on her outcome, she rephrased it to *“...compare the properties of solids, liquids, and gases.”* (higher order and using only one action verb).

It was encouraging to see some students demonstrate the beginnings of a shift from merely transmitting knowledge to creating knowledge. The most significant feedback from reflection was related to pedagogical skills and professional development. Participants acknowledged that it was more complex than they had expected; they needed more practice in writing and executing lessons, specifically in terms of lesson outcomes, and a greater critical awareness of their own needs and challenges. Continued struggles with pacing, curriculum implementation, and time management were evident. According to participant 1 (Sen/FET phase, Business Studies)

*...the only way one can learn is through trial and error. You need to have the lesson in practice, then you will be able to see that a lot of outcomes might not be attainable.*

## DISCUSSION

This study makes two significant contributions to the growing discourse on the importance of lesson plan skills, particularly lesson outcomes, as an essential component of the pedagogical process.

- Firstly, it corroborates the findings of other studies (both globally and locally) that pre-service teachers find writing lesson outcomes very challenging. A variety of challenges were identified and elucidated through themes in this study.
- Secondly, there was a positive response to the invitation to, with guidance, critically reflect on their experiences and current practice. In a crucial aspect of the emerging awareness that some students show,
  - they concede the value of selecting appropriate action verbs and striving towards constructive alignment within their lessons;

- present a crucial plea for a deliberate move away from only relying on the recipe-model and rigid discipline-specific templates for lesson planning. They argue that simply completing a template inhibits their own contextual and pedagogical judgment; and
- probably most significantly, they express a dire need for more opportunities to test their lesson outcomes in real-life environments.

The findings emphasise gaps that higher education institutions can use as a gauge for assessing their students' practice and experience. It further highlights opportunities for developing competence through reflection and trial and error. The growing awareness of the value of reflection strengthens the view of students as emerging professionals rather than novices.

The unique context of each institution, however, must serve as a lens through which to consider findings. Issues such as student enrolment numbers can drastically impact how lesson planning skills are taught and practised. An interesting systemic issue to consider within the South African context, where there are 11 official languages, is that most students do not write lesson plans in their mother tongue (except when they choose that specific language as a major). Whether students might rely on “easier” verbs that they better comprehend than higher-order verbs that require greater language proficiency should be explored. One might question whether the central issue in this case stems from an over-reliance on lower-order verbs or from selecting inappropriate verbs due to a lack of understanding of the relevant taxonomy and cognitive levels. It is possible that these students opted for verbs with which they were most familiar, rather than those that accurately aligned with the desired cognitive levels.

A more nuanced approach to choosing action verbs and selecting cognitive levels could increase students' critical engagement with the process and the quest for constructive alignment, rather than merely viewing lesson planning as a tick-box item. The structure of predetermined lesson templates provides guidance and a safety net to students who might not yet feel confident enough to follow their own plan. The use of templates in the early years of study does have merit, but the question can be asked whether a greater focus on cycle and weekly planning in the later years could provide space for individual and creative thinking.

This study has confirmed that students struggle to identify shortcomings in their lesson outcomes and adjust accordingly. If higher education institutions can better translate theoretical concepts into practice, this could foster development and enhance critical reflection. A deliberate focus on constructive alignment as a tool to measure complexity and provide a

starting point for lesson planning, rather than simply following a step-by-step recipe without valid reflection, could enable students to link concepts and consider writing lesson outcomes as part of a holistic endeavour to create authentic and engaging learning opportunities. As a result, they might practice the skill of adapting lesson plans where necessary.

To achieve this, the architects of training programmes should consider a scaffolded approach across all years of pre-service teacher training. This should be supported by a clear progression in learning that starts in the first year of pre-service teacher training. Such progression would scaffold learning rather than requiring the entire lesson planning process. More practice in setting lesson outcomes, rather than focusing on planning lessons, will improve the overall experience. A more explicit focus on the utilisation of Bloom's and SMART criteria, rather than merely on their theoretical comprehension, is needed. Teacher trainers should create practical opportunities where students can engage in higher-order engagement with these concepts and apply them to conceptualised lesson outcomes, rather than merely engaging in lower-order practices such as defining and describing theoretical knowledge.

The inclusion of real-life examples across various educational contexts can also provide valuable exposure to the realities of teaching. In this way, students are invited to reflect not only on their lesson outcomes and lesson plans in isolation, but also holistically, including the context, the curriculum as a whole, and soft skill development, among other aspects. For students, this encourages self-directed learning and metacognition. This would also better enable students to make adjustments to lesson outcomes when needed.

The value of feedback on writing lesson outcomes cannot be underestimated. The lecturer is a crucial link in the feedback loop and in scaffolding students' understanding of writing lesson outcomes. In addition, they should model good practice in their own planning. Reflecting on their own practice can motivate students to do the same.

Fostering a robust feedback culture ensures that pre-service teachers perceive lesson outcomes not just as abstract requirements but as practical tools that enhance the overall learning experience. Feedback should focus on more than just illuminating errors; it must equip the student with constructive strategies to rethink and revise their outcomes, reinforcing clarity, measurability, and alignment with the curriculum goals. Timely feedback, especially after writing lesson outcomes, can help prevent misconceptions from becoming deeply rooted and enable the student to grapple with the ideas while the learning and experience are still fresh in

their memory. Additionally, incorporating opportunities for peer feedback alongside lecturers can help students compare different approaches and hone their critical evaluation skills, which are essential for reflective practice. Although practices like micro-teaching are popular in many universities, the findings in this study suggest that using peer review or lecturer feedback solely for collaborative discussion of lesson outcomes could enhance overall lesson planning and the subsequent micro-teaching experience. In this way, learning is not only scaffolded in the theoretical domain, but a feedback loop is created that also leads to scaffolding (and improved reflection), in practice.

Lastly, the role of a teacher educator should also be considered differently from that of lecturers in many other disciplines. Training pre-service teachers offers the opportunity and responsibility to model best practice. The lecturer's role extends beyond correction; it includes demonstrating alignment in their own planning, making explicit how effective lesson outcomes guide teaching decisions and assessment choices. By sharing real-world examples and modelling iterative improvement, lecturers normalise reflection and adjustment as part of professional growth. This approach not only demystifies lesson planning but also empowers students to internalise reflective habits, ultimately bridging the gap between theory and practice and promoting agency in the formation of their professional identity.

### **Limitations and further studies**

A limitation of this study is that it did not consider the potential role of generative AI as both a tool and a hindrance in lesson planning. Lee and Zhai (2024) explored students' experiences of using ChatGPT during lesson planning, and they confirmed that the teacher still plays a leading role in deciding on lesson outcomes and in critically evaluating the proposed lesson plan generated by ChatGPT. A basic understanding of lesson planning is, therefore, crucial for critically evaluating the proposed lesson. Exploring pre-service teachers' expectations and experiences of using AI tools not only to create lesson outcomes, but also to act as a critical friend for reflection and as an integral and ethical part of the feedback loop, should be explored further.

In addition to exploring the role of large language models in students' experiences with writing lesson outcomes, large-scale longitudinal studies could be conducted to examine the progression and scaffolding across pre-service teacher training programmes. Future research can further explore the value of reflection in addressing students' challenges.

## CONCLUSION

*I have learned through this assignment that there is a lot more to lesson planning than just planning. (P2 )*

This study highlights that while lesson planning is widely taught in pre-service teacher programmes, writing effective lesson outcomes remains a significant challenge for many second-year students. Their outcomes were often vague, overloaded, or misaligned with curriculum expectations, making it challenging to achieve constructive alignment. However, amidst these difficulties, the study also found that some students were developing a growing awareness of the need to choose suitable action verbs, plan their pacing realistically, and utilise tools like taxonomies and curriculum documents more effectively.

This study's significance is twofold: it highlights the challenges that students encounter and emphasises the importance of providing structured reflection opportunities to enhance lesson planning skills. By intentionally supporting the development of outcome-writing abilities and allowing time for practice, feedback, and reflection, teacher educators can help pre-service teachers progress from formulaic planning to a more sophisticated, critical, and context-responsive approach.

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