From task-oriented to meaning-making: beyond ‘assessment drives learning’ in promoting medical student engagement in narrative reflection

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Abstract: Reflective writing has been widely employed to teach and assess medical students’ reflective ability. However, challenges in assessing narrative reflection reduce students’ engagement, which further risks them becoming reflective zombies. This study aimed to explore student engagement processes in constructing reflective writing and how instructional design and assessment shape those engagement processes. We employed a qualitative descriptive approach and conducted three Focus Group Discussions (FGDs) involving 20 undergraduate medical students from year 2 (preclinical), year 4 (early clinical), and year 6 (late clinical). Participants were recruited through maximum variation sampling, and data were analyzed thematically. Our findings revealed how students’ perceptions of reflective writing assignments evolved across academic levels. Preclinical and early clinical students tended to view reflective writing primarily as an assignment to be completed, while late clinical students, drawing on more frequent exposure towards authentic clinical experiences, perceived it as an opportunity for personal and professional growth and engaged more deeply in the meaning-making process. Students further emphasized how their engagement in reflective writing was shaped by instructional design and assessment strategies. To maximize the impact of reflective writing, instructional design must transition from a reliance on explicit prompts and rubrics toward the integration of authentic experiential opportunities. A multi-layered framework highlighting longitudinal reinforcement across the curriculum, individual and group reflective dialogue, and adoption of creative methodologies would collectively transform reflective writing into a robust driver of personal and professional growth.

1 INTRODUCTION

Medical and health professionals are expected to uphold professionalism and continuously develop their professional identity for a lifetime as form of social contract with society (Birden et al., 2014).

Professional identity forms through active exploration and commitment to one’s future professional role. It is transformed through interactions, role modeling, and experiential learning with teachers, patients, and peers (Irby & Hamstra, 2016). Supporting students’ active engagement and facilitating reflective practice on their learning experiences is therefore essential to foster professional identity formation in medical and health professions education (Monrouxe LV, 2016; Ng et al., 2015).

Students’ reflective ability can be nurtured through various creative methods, including reflective writing. This approach has been widely employed to promote students’ reflection-on-action, allowing them to thoughtfully examine their performance and learning experiences (Aronson, 2011).

Despite the well-documented benefits of reflective writing assessment for students, following the notion of “assessment drives learning”, challenges in evaluating their reflective ability persist. Numerous assessment instruments and feedback strategies designed specifically for reflective writing are widely available, yet capturing the depth of reflection and genuine

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student engagement continues to be difficult. These difficulties arise from raters (e.g., unstandardized understanding of reflection components, limited time and fatigue) (Lim et al., 2023), students (e.g. fatigue, lack of motivation, and reluctance to discuss their mistakes) (Patel et al., 2015), and the instruments (e.g., assessing only completeness of reflection components, serving as mere checklists, and low interrater reliability) (Moniz et al., 2015; Soemantri et al., 2022). Consequently, feedback provision is often suboptimal.

If left unaddressed, students risk becoming "reflective zombies", in which students develop narrative reflections without genuinely reflecting on their experiences (de la Croix & Veen, 2018). Ultimately, this hinders the internalization of professionalism values and professional identity formation.

These challenges highlight the need to improve the design of reflective writing assessment. In line with instructional design principles, a focus on the assessment process should be complemented an understanding of how students engage with reflection and construct their writing (Li-Sauerwine & King, 2019). Therefore, this study aims to explore the students' engagement process in constructing reflective writing and the ways in which instructional design and assessment shape that engagement process. Such insights will inform the development of meaningful interventions that enhance both the learning and assessment of reflective writing, supporting students' professional identity formation.

2 METHOD

2.1 Context

This study was conducted in the Undergraduate Medical Program (UMP), Faculty of Medicine, Universitas Indonesia in 2025. This is the oldest medical school in Indonesia, which admits approximately 200 students each year from different regions in Indonesia. The program applies an outcome-based education, and students are introduced to the self-reflection concept and practice in their first academic year. Students practice reflective writing longitudinally, from year 1 to 6. It is particularly emphasised in courses addressing Humanism, Professionalism, and Interprofessional Collaboration. Reflective writing is also employed in several clinical rotations during the years 5 and 6. Most reflective writing assignments serve as summative or prerequisite assessments. At the end of the clinical year (year 6), students are required to write a reflection essay as part of the summative portfolio examination, which determines their eligibility to take the final exit exam. The rubric used to assess reflective writing is the Reflective Ability Rubric, which was developed based on Boud, Mezirow, and Schon's Theory on Reflection and Deliberate Practices. (O'Sullivan et al., 2010) .

2.2 Study design and study participants

This study adopted a qualitative descriptive approach, which allows us to understand students' unique experiences in reflective writing and present findings that closely reflect these experiences, thereby contributing to changes and improvements of reflective writing assessment in real settings (Doyle et al., 2020). Undergraduate medical students in years 2 (preclinical), 4 (early clinical), and 6 (late clinical) from UMP FMUI were purposively selected using the maximum variation approach, considering representation of gender, academic performance (upper and lower Grade Point Average, GPA), and cultural background (originating from urban and rural area, enrolling in regular and international class). During the data collection, year 2 students have passed the Interprofessional Education 1 Module, the Humanism, Professionalism, and Cultural Competence Module, and the Empathy, Ethics, and Professionalism 1 and 2 Modules. Year 4 students have completed the Empathy, Ethics, and Professionalism 3 and 4 Modules, and one major clinical rotation. Year 6 students have passed all clinical rotation modules, both the major and minor clinical rotations, with one participant having also completed the Pre-Internship Module and the Interprofessional Education 2 Module.

2.3 Data Collection

Three focus group discussions (FGDs) were conducted, each with eight year 2 students, seven year 4 students, and five year 6 students. Focus group questions were informed by Boud, Mezirow, and Schon's reflection and deliberate practice theory and framework. These questions were designed not only to elaborate on items assessed on the reflective essay rubric, but also to explore students' feelings and perceptions during the development of the reflective essay, as well as challenges and support needed in reflecting towards the learning experiences. Each focus group is conducted through Zoom Meeting, moderated by the lead author, video recorded, and transcribed. All students signed the consent form prior to the FGDs.

2.4 Data Analysis

Inductive thematic analysis was conducted to obtain the emerging themes and subthemes. Moderator's notes taken during the FGDs were also used to support the analysis. Relevant curriculum documents, i.e., instructional design books from the

modules mentioned by students, which outline learning outcomes, learning experience reflected, reflection prompts, and summative assessment weight, were also used as part of the analysis to provide contextual understanding. Authors conducted independent analysis to generate codes from the data and each held a reflexive journal, to record their own thinking when reading the data. They then discuss and formulate a coding template, supported by the reflexive journals, to guide the analysis of the remaining data. After the initial themes were formulated, the findings were discussed with the other authors. This systematic process was conducted iteratively until the final themes were established. Thematic analysis was carried out using NVivo 15.

3 RESULTS

Three FGDs were conducted with 8 (40%) year 2 students, 7 (35%) year 4 students, and 5 (25%) year 6 students. Ten male and ten female respondents were equally distributed. Our findings revealed two main themes. The first theme highlighted how students' perceptions towards reflective writing assignments evolved across academic levels, whilst the second theme emphasised how teaching, learning and assessments shaped this engagement process.

3.2.1 Theme 1: Shifting values in reflective practice: From task-oriented compliance to practice-oriented meaning making

Preclinical and early clinical students understand the importance of regular reflection, yet they often view reflective writing mainly as a to-do list to complete, as their prior exposure to reflective writing in high school varies.

"In my opinion, reflection is important. Back in high school, we were taught to reflect as well. We had a special session after school, where we wrote [our reflection] in our own book. It was something our school encouraged, so I became used to doing it." (AU, year 2)

This task-oriented minded was further aggravated by the preclinical curriculum timeline. The Professionalism Modules, which were scheduled only a few discussions per semester, ran parallel with system-based modules that had more structured schedules and greater demands for assignments and examinations. Moreover, reflective writing was also included as a summative assessment component in these professionalism modules, meaning that students' final grade depends on their reflection essay. Consequently, students tended to prioritise and engage more with their academic performance in system-based modules, while completing reflective writing merely to fulfil requirements and achieve good grades rather than to genuinely engage in the reflective process.

"If the assignment is only scheduled once a semester like now, I think that's not enough. Especially since there's a target, which we need to write at least a thousand words, of course we won't do [reflective writing] for ourselves, but for the grade. If we only write [reflection essay] once and it counts for something like 40% [for the final grade], our mindset will definitely shift. We won't think about personal growth anymore, we just think about that 40% weight." (AY, year 2)

"If the assignment is part of formative assessment, such as in another module, I feel at ease in writing." (DAC, year 4)

Preclinical and early clinical students described several strategies to achieve high scores in reflective writing. Many reported relying heavily on the reflective prompts provided in the assignment guide and the assessment rubric components when composing their essays, although they also noticed how engagement in the reflection process is overlooked.

"The first thing I do is open the student guide book and really try to understand what the task expects from me. From there, I identify the key points so I can relate them to, for example, [learning empathy from] a film or a book. There are certain pointers that must be included in the reflection. Then I write my essay, using my own words, what the main point of each part is. After that, I choose one main key message, and from there, I continue developing and connecting it to how I see this [key message] in my life." (AM, year 2)

"… before writing reflection, I always look closely at the assessment rubric first. I don't know why, it's almost become a reflex. Because if we plan to structure our reflection for a grade, the essay should be very organized. But if I want to truly reflect on an event that happened, I don't think it would need to be as structured as outlined in the rubric. I could just identify the key things." (D, year 4)

Students reported several challenges to engage with reflective writing. The word count requirement and prompt for the reflection were perceived to restrict students' ability to produce meaningful reflections.

" … I feel like there was restriction and asked us to follow a step-by-step format. And with a thousand words of maximum word limit, when I wanted to mention other things, it felt difficult to fit them in. I just wish reflections were assessed based on the sincerity behind them, not just on whether they match the expected format. It should be more about whether someone is genuinely sincere and truly understands their own reflection, rather than just ticking off all the points." (T, year 2)

Another obstacle identified in engaging with reflection was the difficulty in recalling specific events. In response, students tended to choose moments in which they made mistakes, as these left a stronger impression on them.

"To be honest, I usually choose 'negative' experience, in the sense that it's one where I made a mistake. This is because they are the most memorable ones for me and make me remember them more vividly." (V, year 4)

Students in preclinical and early clinical years also hesitate to openly discuss their feelings and thoughts. They were afraid that showing vulnerability would be negatively judged and lower their grade.

" … I think the content related to empathy, ethics, and professionalism [in the required movie to be reflected] was limited, and it was impossible for me to say that [in my essay]. I felt that I would be judged, 'This person didn't really grasp the empathy, ethics, and professionalism aspects of the movie.'" (V, year 2)

"Sometimes I have this fear of writing too much about my reflections rather than the actual content [about what happened]. (A, year 2)

Despite students' efforts to follow the provided instructions, prompts, and rubric, their grades often varied. Some students noted that when they genuinely derived meaning and learning from an experience, their scores were sometimes lower than when they wrote reflections by simply answering the prompt questions, which made the task feel less meaningful to them.

"When I saw my grade, I was like, 'Why is my score only this much?' I felt like I had done it properly. I wonder if it was because I didn't directly answer point by point as listed in the module handbook. I wrote it more like a personal summary of what I felt after reading the book, so not everything was laid out step by step in the essay. All answers were there, but not right in the first paragraph, sometimes they appeared in the fourth paragraph. Then, I asked some friends who got higher scores, and it appeared that they followed the exact order [as listed in the handbook]. That made me a bit disappointed, because I thought, 'So we really have to follow the order, huh?' Even though I actually worked on it wholeheartedly and carefully for each part." (T, year 2)

"I was aware that the order of my essay parts was 'wrong'. But in my opinion, that 'wrong order' actually showed that I was thinking. Because in my logic, it didn't make sense to dig into the background later. I felt it made more sense to start with it at the beginning. So when my essay structure was considered wrong and the score went down because of it, I thought, 'Then what's the point of thinking and trying to make [this reflection essay] make sense to me?'" (F, year 2)

This mismatch between students' perceived efforts and the received grade leads to boredom and disengagement from reflection. In the longer term, students perceive reflection as an autopilot process, which they think and write automatically following the usual template steps. This gradually became a habit as they progressed to higher academic years, resembling the "reflective zombies" phenomenon.

"Over time, I started to feel bored and found it all monotonous because I had to follow that template [from the assessment guide]. … So those kinds of feelings came up, like monotony and boredom. Eventually, it just became routine. For example, after finishing this part, I already knew I had to write the next part, and it all just turned into something I did out of habit." (DAC, year 4)

"During the preclinical year, we were always provided with a rubric, and I guess subconsciously started to follow it, like on autopilot, to synthesize my reflection. In the end, I never really went beyond that rubric or stepped outside the boundaries." (IV, year 6)

Late clinical students reported different experiences. As they are more exposed towards authentic clinical experiences, students perceived reflective writing as an opportunity for personal and professional growth and engaged more deeply in the meaning-making process.

"What becomes significant change for me [in clinical year] is when choosing experiences to reflect. I usually choose a patient case that I've followed from beginning to end. For example, I

might first meet the patient in the emergency department, then happen to see them again during inpatient care. Meeting the same patient allows me to get a complete story, from the start to the end of the management process. It also helps me reflect on my attitude and role throughout the patient's care. That kind of continuity makes it easier for me to choose an experience to reflect on." (NS, year 6)

However, they faced several challenges in fully engaging with reflection, i.e., time constraints and the perceived benefits of reflection, especially as the timing of reflective assignment tasks are due at the end of the respective clinical rotation.

"… there are times when I genuinely want to reflect, but the desire to finish the assignment quickly is stronger. So, I usually prefer to just get it done fast." (AH, year 6)

"When reflection assignments are scheduled at the end of the module, they're often submitted even after the exam. By then, the vibes are that 'the module is already over!' and we're already starting a new rotation next week and busy preparing to move on. As a result, very few people actually take the time to sit down for hours and reflect seriously. The reflection process ends up being just a look back at the past. Listening to my friends here just now made me realise that my reflections during clerkship were mostly about describing what had happened, rather than identifying what I could learn for the future, which is what a reflection should be about. In the end, it feels like… I've lost the meaning of reflection itself." (IV, year 6)

Students from all stages reported being able to recognize differences in their behaviour when they engaged in reflective writing wholeheartedly versus superficially. They noted that reflections written in a strictly chronological manner, emphasizing structural components or the use of sophisticated language, often indicated lower engagement compared to when they were genuinely involved in the reflective process.

"… the simpler and more straightforward the wording reflects the more effort I put into it. If I'm not really in the mood, I can just do it easily. For example, just write down the main points, put them into AI, then rephrase the sentences, run it through AI checkers, and if everything looks fine, I submit it. But when I'm genuinely motivated to do it on my own, the words just flow naturally." (AY, year 2)

3.2.2 Theme 2: Role of teaching learning and assessment in fostering students' engagement in narrative reflection

Students agreed that the design of the reflective writing assignment influenced their approach to composing the essay, particularly the prompt. It should be carefully and contextually constructed, with more explicit prompts provided to support early-stage students.

"In the assignment instruction, we were only asked to focus our empathy on one person [note: referring to a character from the required reading]. So, like it or not, I can only empathize with the child since he was the main character [of the book]. But while reading, I also felt empathy for the mother [of the main character]. She had her own reason to leave, as she was exhausted from taking care of her autistic child. I also felt empathy for the father, who ended up killing their dog out of frustration after his wife left. So, when I was working on the reflection, I was confused about how to approach it." (V, year 2)

Students, particularly late clinical students, perceived reflection skills as essential to support their learning and professional growth. Therefore, they expressed the need for early introduction of the self-reflection concept and scaffolding throughout the academic level to further master reflective writing.

"I feel that during our education, ideally, we should already be capable and confident in writing a reflection by the preclinical year. But in my case, I only really started learning what an ideal reflection looks like during the clinical phase, during clerkship. In my opinion, by that [clinical] stage, the skill should already be something we bring with us from the beginning, not something we're still discovering along the way. Because of that, there were some clinical rotations where my reflections couldn't go very deep, since I was still experimenting with what an effective and ideal reflection should be like." (IV, year 6)

In terms of teaching and learning, students suggested utilizing varied and creative modalities resonant with their generation characteristics, e.g., video, mind map, social media post, and PowerPoint. This is to prevent reflective writing from becoming a monotonous activity. These modalities should also be less susceptible to cheating through generative Artificial Intelligence (AI).

"… reflection can actually take many forms, not just written ones. In this AI era, where AI has become so sophisticated that it can closely mimic human writing, we might need to explore other methods that are not easily manipulated by AI, for example, a 1–2-minute video, a reflective PowerPoint, a mind map, and so on. I often chat with my peers before exams, 'Hey, have you done your reflection yet?' and often the answer is, 'Ah, that's easy, I'll just do it at the end using ChatGPT.'" (IV, year 6)

"One of the most ideal ways to mitigate this issue [academic dishonesty using generative AI] might be by adapting reflection methods to suit Generation Z, who tend to be more social media users and creative. For example, reflections could be done in the form of Instagram posts, story templates, and similar formats. My generation seems to have a different interest in writing, and typing out our feelings in a Word document may no longer be as relevant." (IV, year 6)

Students also mentioned that the feedback they received was mainly as a score. There was no narrative feedback describing why they got a particular grade. This then led to confusion about whether they had done a good reflection and if there was any room for improvement. Feedback is perceived to be essential as it would improve their reflection skills, motivate them to be more engaged with the process, and enrich the lessons learned from the experiences.

"I actually wish there was feedback given. I've written so many reflections, but the last time I received feedback was during the first-year module. Since then, I've been writing reflection after reflection without ever getting any feedback. I really hope to know whether what I've written is actually good or not, beyond just the score. For me, when it comes to reflection, what I value most isn't the score, but the feedback, encouragement, or appreciation, and also suggestions on what needs to be improved, either related to the reflection itself or the plan of action that follows." (DAC, year 4)

" …After I discussed with my teacher, they specifically gave me the insight to focus on one particular event and to explore not only what I learned cognitively, but also what feelings the experience brought up. That was something completely new to me." (IV, year 6)

"It really increased our motivation, our motivation to be better because we knew that our reflections were actually being read and responded to, and that we might even receive some personal feedback." (DEA, year 4)

Students acknowledge that there are difficulties that teachers might face in providing timely feedback. They perceive that feedback towards reflection writing does not necessarily have to be written feedback. Face-to-face, one-on-one reflective dialogue was highly preferable as reflection is perceived to be something personal, and private dialogue would allow for deeper reflection. However, considering time and human resources limitations, group mentoring serves as an alternative. Moreover, the assignment due dates were typically set before any plenary session, which can be a venue to give feedback.

"In my opinion, either form [written or verbal] of feedback would be fine. However, written feedback is something I seldom get, so expecting personal feedback seems even less likely. But, in an ideal condition, I would hope for some kind of dialogue process." (DAC, year 4)

"I think there should be a mentor, someone who can supervise us. … Would there even be enough human resources to provide one mentor for each student? Maybe the most feasible option would be to hold focused group discussions, like what we're doing now." (ANP, year 4)

When a face-to-face session is not possible, a short note through the Learning Management System (LMS) or even simple annotations on their reflection essay suffice to let students know what the teachers think about their essay.

"… face-to-face discussions would be quite difficult, since doctors [teachers] are usually very busy. So, I think written feedback would be more feasible, given to us personally, maybe through LMS or other platform. The feedback could include validation, like acknowledging our feelings … and perhaps also provide their perspectives, such as whether our plan of action makes sense or if they have other suggestions." (DEA, year 4)

Aside from feedback dialogue and creative teaching modalities, students perceived that leadership and organizational culture that emphasize reflective practice also improve their engagement with reflective writing.

"I was placed at one of the academic hospitals and they had an academic culture that adopted Gibbs' reflective cycle. … at the end [of their placement], there was also a special session for each

of use to take some time to reflect, together with the consultants and the midwives." (NS, year 6)

4 DISCUSSION

This study aimed to explore how students engage in reflective writing and how instructional design and assessment shape that process. Our findings show that students across all academic levels faced challenges in engaging with reflective writing, e.g., limited time and lack of feedback. These challenges often led to disengagement and completing reflections in an "autopilot" mode—treating them as routine tasks without properly thinking and exploring their experience. This aligns with de la Croix and Veen (2018), who explained it as a "reflective zombie", referring to students who appear to reflect without genuinely reflecting. The "reflective zombie" occurrence is usually reinforced by the focus on fulfilling the expectation of what a reflective writing essay should be (de la Croix & Veen, 2018). We observed a similar situation, as our students reported that their focus often shifted toward achieving higher grades because the reflection essay assignment was part of a summative assessment. Such findings highlight the urgent need to address instructional and assessment design to prevent the perpetuation of "reflective zombie" phenomenon.

We also observe students understand the importance of reflection, and this becomes more evident in the late clinical students, who see reflection writing as a meaningful avenue for professional growth and development. This is a promising indicator to encourage the shift from task-oriented to meaning-making earlier. Therefore, they would gain the benefits of deep reflection sooner, thereby strengthening their professionalism and professional identity, as well as fostering a more reflective practice culture throughout their learning journey (Dulloo et al., 2024). This finding also reassured how students' reflective ability, their ability to make meaning of learning experiences, is developed over time in a dynamic process, showing how reflective ability is an integral part of their professional identity formation (Findyartini et al., 2022).

In fostering their reflective ability, students expressed the need for an early introduction of reflection and more frequent opportunities to practice it. While this idea aligns with the wider literature (Mount et al., 2022), longitudinal reflective writing should be complemented by carefully designed and contextually relevant instructions and assessment formats (Sandars, 2009).

Students also emphasized the need for clearer and more explicit prompts, particularly for those in the early stages of their education. Given that reflective ability is a complex learning process that requires the integration of knowledge, skills, and attitudes, as well as the capacity to construct meaning from experience, instructional design approach that carefully considers both the learning tasks and the required level of support is essential. High levels of guidance at the outset, with a gradual reduction as learners progress (as conceptualized in the 4C/ID instructional design model), could be thoughtfully incorporated into the development of reflection-related instructional strategies (Frerejean et al., 2019).

Students also demanded a more flexibility on word limits, and opportunities to reflect on relevant, authentic experiences, rather than simply summarizing or describing events. Allowing students to reflect through various creative modalities was also suggested as a way to enhance engagement. This is in line with their generation characteristics, the Generation Z (Gen Z), who are generally creative, value personalization and flexibility, and are highly connected to social media (Takeuchi et al., 2025).

While these approaches may increase relevance and motivation, they also introduce new challenges in the assessment of students' reflective ability. Teachers may not yet be accustomed to evaluating reflections presented in formats such as social media posts, raising questions about the suitability of available rubrics and how teachers can be prepared to assess reflective ability across diverse modalities (Brown et al., 2019). Another concern, particularly about reflection through social media, relates to professionalism, whether the public is ready to see medical students express vulnerability through such platforms, and whether students themselves are prepared to be seen that way (Bernard et al., 2014).

While assessment drives learning, instructional designers should reconsider including reflection writing as part of summative assessments, as this might shift students' focus toward grades rather than learning. Alternatively, narrative reflection could be included as a formative assessment or as part of a longitudinal summative assessment with minimal weighting for each task, as promoted in the programmatic assessment concept (Schuwirth & Van der Vleuten, 2011).

Our findings showed a lack of feedback practices towards narrative reflection. Considering this, effective instructional and assessment design should be complemented by opportunities for reflective dialogue. Such dialogue is essential, as it influences students' engagement with reflection writing and may help prevent the emergence of "reflective zombie".

Furthermore, various formats of reflective dialogue, e.g., group or one-on-one dialogue, and written feedback are suggested, which further highlight students' expectations for teachers to role model reflective practice, and they should be equipped with the skills to facilitate meaningful reflective dialogue.

However, given the current workload of teachers, additional support systems are needed to make feedback provision more feasible. In this era of automation, integrating automated reflection assessment tools could be explored as a strategy to assist teachers in providing timely and meaningful feedback (Maimone et al., 2024). Such tools could help with initial grading, including screening for AI-generated content. The initial grading would allow teachers to quickly grasp the quality, strength, and room for improvement in students' reflections. Along with an adequate faculty development program on the use of the tools and feedback provision, this process would enable teachers to devote more time to carefully examining students' reflective ability and providing personalised feedback.

A strength of this study lies in its inclusion of students across different academic levels, allowing us to capture the transformation of students' reflective engagement throughout their academic journey. We also use curriculum documents to help contextualize our analysis. The researchers' experience in reflective writing and assessment further supported a nuanced interpretation of the data.

This study was conducted within a single institution, which may limit the transferability of our findings to other contexts. We did not include observation or analysis of students' real-time reflection writing, which could have provided richer insights into engagement processes.

Future studies could further explore teachers' experiences in assessing narrative reflection, including the process involved, barriers encountered, and supporting factors in feedback provision for reflection essays. Students' written reflections may also be analyzed and serve as triangulation data alongside students' and teachers' perspectives. Such research would illuminate contextual strategies to improve the instructional and assessment design of reflective writing, including designing automated assessment tools.

5 CONCLUSIONS

Reflective ability is an integral component of students' professional identity formation, gradually evolving from task-oriented mindset to deeper meaning-making approach. Understanding this developmental process highlights how challenges occur in reflection on structured learning experiences. The findings underscore the importance of integrating evidence-based approaches into the instructional design process and assessment, through providing early opportunities on an authentic learning experience, offer detailed prompts, clear guidance, and opportunities reflective dialogue with gradual support reduction over time, and integration of technology-enhanced assessment tools to establish sustainable system that ultimately advances professionalism and professional identity formation.

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