

Reflective Practice in Teaching and Learning: An Analysis from Experts' Perspectives

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Abstract

Effective implementation of teaching and learning in vocational education is essential to prepare students with the competencies and skills required for the job market. Reflective practice enables students to gain deeper insights into how the skills acquired in school are closely aligned with industry demand. This article presents qualitative findings from experts regarding reflective practice in teaching and learning. The study identified key elements that support reflective practice, its effectiveness in enhancing instructional quality and the challenges of applying reflection in vocational education contexts. Using an inductive and exploratory approach, data were collected through expert interviews to identify the essential components that facilitate reflective practice, its impact on teaching and learning quality and the challenges educators face in embedding reflection into their pedagogical routines. Findings suggest that reflection must be systematically and deliberately integrated into instructional planning. The use of reflection rubrics, journals and authentic assessment support objective evaluation of student's reflection. Moreover, reflective practice contributes to the development of student's soft skills such as problem solving, communication and leadership. However, challenges remain, including limited training in reflective outputs. The implications of the study are significant for educators, students and educational institutions in reinforcing reflective practice as a core strategy to improve teaching and learning effectiveness.

Keywords: Strategy, Effectiveness, Teaching And Learning, Reflective Practice, Vocational Education

Reflective Practice in Teaching and Learning

The field of vocational and technical education in daily secondary schools encompasses various subjects such as Elective Professional Subjects (*Mata Pelajaran Elektif Ikhtisas*, MPEI),

the Upper Secondary Vocational Programme (*Program Vokasional Menengah Atas*, PVMA), and Vocational Subjects (*Mata Pelajaran Vokasional*, MPV). This field places strong emphasis on practical learning, providing students with the opportunity to acquire both knowledge and hands-on skills relevant to industry. Consequently, students are better prepared to pursue careers in technical fields upon graduation.

As part of their preparation, students are engaged in practical activities, project-based tasks and industrial training related to their area of study. Such involvement enables them to learn through practical experiences, which are important for understanding the application of theoretical knowledge in real-world contexts. The main objective is to equip students with relevant industry-recognised skills that enhance their employability. Furthermore, direct engagement with industry provides them with the readiness to enter the job market or to further their studies in higher-level technical fields upon completing their secondary education.

However, vocational education faces challenges in realising the main aspiration of its existence within the mainstream of secondary education. The challenges in implementing the vocational education curriculum include aligning the existing curriculum content with the dynamic demands and needs of industry. In addition, vocational education is confronted with the rapid advancement of digital education in line with the educational revolution. However, the integration of digital technology in the teaching and learning process has not yet been fully implemented. This, in turn, affects efforts to produce competent students who possess 21st-century learning skills.

Furthermore, vocational education also faces challenges related to the shortage of technically skilled educators. This situation results in the quality of technical education delivery being at a weak level and requiring serious attention. The final challenge concerns the relatively weak collaborative networks and strategic partnerships between educational institutions and industry particularly in providing students with authentic and relevant industry-based learning experiences (Kirior, 2017; Koros, 2021), as well as the emphasis on the development of soft skills (Tang, 2020) such as communication (Qizi, 2020) and problem-solving (Ogunsola, 2023).

Therefore, this study will focus on issues related to the challenges of implementing the curriculum in alignment with industry needs (Rikowski, 2001; Mian et al., 2020) through reflective practice. This is because the education sector plays an important role in producing graduates who can meet future workforce demands equipped with both knowledge and skills (Hanushek & Woessmann, 2021). A knowledgeable and skilled workforce can be developed through meaningful learning. Meaningful learning occurs when students are able to establish connections between theoretical knowledge and real-life contexts in order to solve problems. Such meaningful learning can be achieved through reflective practice.

Based on theory, reflective practice is a process that encourages individuals to examine and evaluate their experiences within the context of learning or profession (Moon, 2013). It involves the process of identifying, understanding and reviewing actions as well as knowledge gained from those experiences (Boyd & Fales, 1983). This process stimulates individuals to critically examine their thinking, identify strengths and weaknesses and seek

improvements for performance and personal development (Perusso, Blankesteyn & Leal, 2020). Reflective practice motivates individuals to become excellent learners by fostering continuous self-development within their chosen field (Colomer et al., 2020). Therefore, vocational education needs to strike a balance between curriculum, infrastructure, teaching personnel and the integration of skills required by students.

To meet the dynamic demands of the labour market in the industry, educational institutions must ensure that students possess technical skills. In addition to technical skills, students also need to acquire soft skills. The acquisition of both technical and soft skills by students is supported through the empowerment of educators, the implementation of a curriculum relevant to industry demands, as well as adequate infrastructure and technological resources. Reflective practice serves as an effective tool to address several issues in teachers' teaching and learning practices. Reflection enables teachers to critically evaluate the alignment of the curriculum with current industry needs and adjust it accordingly (Karami et al., 2012). Similarly, in terms of technology integration in teaching, reflection allows teachers to assess the effectiveness of the technologies used and reorganise their approaches towards improvement (Jafar et al., 2020).

In addition, reflection assists teachers in identifying weaknesses in their own skills. Teachers need to recognise opportunities and methods to enhance their technical knowledge (Karnieli-Miller, 2020). Through reflection, teachers are also able to evaluate the effectiveness of their collaboration with industry and explore ways to enhance student's practical experiences through field involvement (Embo et al., 2014). Soft skills can also be strengthened through reflection by identifying strengths and weaknesses in areas such as communication, teamwork, leadership and problem-solving (Lyz et al., 2020). By engaging in reflective practice consistently, teachers are better able to address these issues effectively and make the necessary adjustments to improve the quality of teaching and learning particularly in the vocational field.

Reflective practice was introduced by Donald Schön in 1983. He proposed two concepts related to reflection; thinking about the actions to be taken during a particular situation (reflection-in-action) and reviewing past events (reflection-on-action) for future improvement. Both concepts are highly significant for professional development across various fields (Anderson, 2019). Reflective practice is a cognitive skill that enhances learning from experience and strengthens professionalism in multiple domains such as education and healthcare (Kashiwagi et al., 2016). Reflective practice is carried out through the continuous encouragement of individuals to question assumptions that arise in certain situations. Through these assumptions, individuals are able to integrate ideas from multiple perspectives for further improvement (Loughran, 2002).

According to Patel and Metersky (2022), reflective practice aims to encourage teachers to engage in a continuous cycle of reflection and action. It also involves the process of analysing one's teaching practice, making judgements and making adjustments based on insights gained through reflection (Milovanovic & Gero, 2020). Farrell (2020) asserts that reflective practice generally means teachers critically examine their philosophies, principles, theories and practices so that they can take greater responsibility for their actions. Meanwhile, Karnieli-Miller (2020) highlights that reflective practice in the context of teaching

and learning refers to the process whereby teachers systematically reflect on their teaching to understand, evaluate and improve their pedagogical practices. This involves a critical process in which teachers examine their teaching experiences with the aim of improving instructional strategies, understanding the impact of their actions on student learning and enhancing their overall effectiveness in teaching and learning (Nguyen et al., 2014).

Reflective practice in vocational teaching and learning has increasingly gained attention as an effort to enhance the quality of student's learning experiences, particularly in the context of Technical and Vocational Education and Training (TVET). A study by Ali et al. (2025), emphasised that experiential learning approaches such as the Design-Build-Test project not only improve student's academic motivation but also encourage them to actively reflect on their learning processes. Reflection that occurs within this experiential cycle enables students to identify strengths, weaknesses and areas for continuous improvement. As a result, reflective practice is regarded as an important mechanism for instilling self-awareness in the learning process and for developing 21st-century skills such as problem-solving, creativity and the ability to make critical decisions.

Reflective practice also plays a strategic role in enhancing the teaching efficiency of TVET lecturers. Pharamela and Singh-Pillay (2025) highlighted that lecturers need to build awareness of 21st-century skills and adapt their pedagogical practices to meet both industry and student needs. In this context, reflection serves as a key tool for educators to reassess the effectiveness of the teaching and learning strategies employed and to adjust their approaches to address the ever-changing learning requirements. An analysis of expert perspectives on reflective practice not only helps to identify essential elements in its implementation but also provides practical guidance for TVET educators in constructing teaching and learning processes that are both responsive and transformative.

Rohanai et al. (2024) emphasised the importance of reflective practice in the implementation of work-based learning within TVET. A qualitative study using structured interviews with TVET instructors found that teachers who provided opportunities for students to engage in reflective practice regularly on their work experiences proved to be highly effective and had a positive impact on the teaching and learning process. Reflections conducted either orally or in written form were shown to enhance soft skills such as critical thinking, adaptability and problem-solving. This indicates that systematically practised reflection is an important mechanism in building the identity of TVET students. It enables students to self-assess their achievements and subsequently make more effective plans when they are placed in real work contexts.

Based on the thematic analysis of interview findings with experts, five key aspects of reflective practice were identified: (i) the design of teaching and learning that encourages reflection among educators; (ii) strategies and instruments that promote reflective practice in teaching and learning; (iii) the effectiveness of reflective practice in enhancing the quality of teaching and learning; (iv) the challenges of reflective practice in teaching and learning; and (v) the factors supporting the success of reflection in teaching and learning. This indicates that reflective practice involves the process of teachers observing, recording and reviewing various aspects of their teaching (Farrell, 2020). According to Farrell's (2020) study, teachers can systematically reflect on their practice through classroom observations of their actions

during or after teaching. These observations may be carried out individually, with a facilitator, supervisor, mentor, or peers. In classroom observation, teachers are able to compare what they had planned and envisioned with what they actually implemented in the classroom and examine whether there were similarities or differences. The gaps that exist between planning and implementation often create a certain degree of conflict between beliefs and practices and such situations lead to further improvement (Freeman, 2016).

Design of Teaching and Learning that Encourages Reflection among Educators

In the context of teaching and learning (T&L), particularly vocational education, reflective practice involves the design of T&L that supports the reflection process to encourage students to construct their own experiences. Teachers' instructional strategies focus on critical thinking and practical application within the vocational teaching context (Christiansen et al., 2021). Teachers select appropriate teaching strategies after analysing how theoretical concepts and vocational knowledge can be applied in the classroom. In addition, the suitability of teaching techniques to the needs and background of students who are practically oriented must be taken into account during the planning process (Lubbe & Botha, 2020). Strategic planning is required to ensure that reflective practice can be implemented effectively. Reflection does not occur spontaneously; rather, it requires structured and systematic planning, such as through the use of the Backward Design approach.

"For the concept of KPPB (Collaborative Professional Learning), we use the Backward Design approach. Backward Design means that previously, we would start with pedagogy first and then decide what we wanted to achieve... at what level... for example, which Performance Standard (TP). But with KPPB, we set the Performance Standard (TP) first. So, if we aim for a higher level, only then can we determine the pedagogy and select the appropriate method to ensure that the intended TP is achieved."

[Expert 2]

Meanwhile, Expert 1, Expert 3, and Expert 4 agreed that experiential learning is an appropriate approach to encourage reflective practice in teaching and learning.

"The experiential learning approach is a learning method that encourages students to learn through practical experiences as well as the reflections they undertake throughout the teaching and learning process."

[Expert 1]

"Usually the strategy... when we have discussions, there will be two-way questioning... group work... and we give them the opportunity to search for their own ideas on the internet before carrying out the practical work."

[Expert 3]

"In this practical session... it should start with a demonstration by the teacher... then the students do it themselves... and reflect on what they can improve..."

[Expert 4]

All experts emphasised that effective reflection can only occur if teaching and learning (T&L) is planned with a clear structure. Among the approaches highlighted are the use of "Backward Design," demonstrations and group activities, which are practised to determine the learning objectives followed by the selection of appropriate activities to support students in achieving those objectives. Meanwhile, experiential learning approaches and student-

centred strategies ensure that meaningful learning can be realised. This is because reflection is not merely contemplation, but rather a process that can be translated into actions leading towards meaningful learning.

Instruments and Methods for Conducting Reflective Practice

Systematic and structured methods of reflection are required to ensure its effectiveness. Teachers need to use appropriate instruments and comprehensive assessment methods, as well as implement activities such as presentations, forums and journal writing to help evaluate the effectiveness of reflective practice and foster deeper reflection. To strengthen reflection in teaching and learning (T&L), authentic assessment strategies and the use of rubrics can assist both teachers and students in objectively assessing the level of reflective thinking. This is supported by the expert's perspective:

"Most of my students tend to process their learning experiences through both group and individual reflections... In that context, there are also discussions after activities, and journal writing has been included... if it is required in the Course Learning Outcomes (CLO), then they need to do journals... reflective writing is also included."

[Expert 1]

"In Project-Based Learning (KPPB), we use Backward Design... and then there is the practice of the Competency Model that applies the 6Cs. From there, we can determine and be prepared with the type of pedagogy to be used."

[Expert 2]

In addition, teachers need to integrate data based on student's performance with their own experiences during the reflection process. This helps them identify patterns, tendencies and aspects that require improvement in their teaching. Teachers do not only reflect, but also apply the outcomes of their reflections in subsequent teaching situations. They may restructure the curriculum, choose more appropriate teaching techniques or align teaching materials with industry needs (Suharno et al., 2020). Creative and innovative reflection enables teachers to design more effective and engaging teaching methods for students. They are able to develop new strategies or adapt their teaching approaches to enhance student's interest in vocational subjects.

Teachers have various ways of collecting data about their teaching during classroom observations, such as using category instruments or audio and video recordings of lessons (Farrell, 2011). For example, Farrell (2011) reported on a short classroom observation in which a facilitator used a focused category instrument called the *Seating Chart Observation Record* (SCORE) to gather evidence on a teacher's classroom practices. The positive impact of using the SCORE instrument enabled the teacher to visualise patterns of communication in their teaching and consequently, to examine whether there were similarities or differences between their stated beliefs and their actual classroom practices.

In addition, Eröz-Tuğa (2012) investigated how self-reflection through discussions of recorded teaching sessions could lead to the development of critical perspectives on classroom practices. Eröz-Tuğa (2012) reported that, as a result of reviewing video recordings, teachers became more aware of the strengths and weaknesses of their practices and improved their ability to provide positive and constructive feedback.

Similarly, Yukselir (2020) reported on four ESL teachers and their beliefs and practices regarding “wait time” that is, the length of time they paused after asking questions in class. Before being observed through the use of facilitators, video recordings and transcripts, the four ESL teachers believed that an appropriate wait time was essential for students to process the question and formulate a response. Each teacher suggested a wait time of more than 5 seconds. However, although each teacher’s wait time varied slightly, observations revealed that the average wait time was only about one second before the teacher spoke again after asking a question.

Thus, the use of observers, video recordings and transcripts enabled these teachers to note the differences between the wait times they had expected before teaching and the actual wait times observed during their lessons. Consequently, when teachers engage in classroom observation using multiple sources such as audio or video recordings of their teaching, they can enhance their awareness of both their teaching practices and their student's learning. Observations can also be made regarding student's reactions, the teaching strategies employed and classroom interactions.

After a teaching session, teachers are expected to conduct an in-depth analysis of their instructional experiences by examining the effectiveness of the strategies employed, the level of student's understanding and the aspects of delivery that may be improved. The reflective process requires teachers to pose critical questions to themselves such as “*What worked well?*”, “*Which areas can be improved?*” and “*How did my actions influence student learning?*”. Such reflective inquiry enables teachers to identify their strengths and weaknesses more objectively within the teaching and learning (T&L) process.

Based on the outcomes of reflection, teachers are encouraged to take concrete actions to enhance their instructional practice. These may include redesigning teaching approaches, selecting more relevant learning materials, improving modes of delivery or adapting pedagogical strategies to better meet the needs of vocational students. Reflection, therefore, should not merely be regarded as retrospection but rather as a mechanism for continuous improvement towards more effective teaching and learning (Suharno et al., 2020).

In the context of vocational education, reflective practice is an important foundation for teachers to evaluate the effectiveness of their teaching methods, particularly in supporting the mastery of practical skills. This process typically begins with careful observation of classroom activities, including recording student responses, teaching strategies employed and the extent to which these strategies promote comprehension. Subsequently, teachers must critically analyse the suitability of teaching techniques for vocational learners and their direct impact on the student's ability to apply practical skills in authentic contexts.

Through this process, teachers can assess aspects such as the effectiveness of demonstrations, the clarity of instructions and student's comprehension of the vocational content delivered. Such evaluation enables them to identify areas requiring refinement and take corrective measures, such as restructuring pedagogical strategies, planning activities that are more aligned with industry requirements and providing broader opportunities for students to apply practical skills (Suharno et al., 2020). Hence, reflective practice in vocational

education functions not only as retrospection but also as a deliberate and sustained action mechanism to strengthen teaching effectiveness and improve student learning outcomes.

Effectiveness of Reflective Practice in Enhancing the Quality of Teaching and Learning

Effective reflective practice has a positive impact on teachers' instruction, student's learning, and ultimately contributes to the professional growth of teachers as knowledge providers and skill facilitators. Within the academic community, reflective practice is recognised as an essential tool for improving the quality of teaching and learning (T&L). This practice can be implemented through multiple approaches tailored to specific needs and contexts, such as the documentation of lesson records and teacher reflections, feedback obtained from students, as well as peer observations and evaluations of classroom teaching sessions (Van Phan Thi et al., 2024).

Teachers play a vital role in guiding, mentoring and transmitting knowledge to students. Hence, it is crucial for teachers to engage in effective reflective practice to ensure that their teaching yields positive outcomes. According to Zoelfakar and Charles (2024), reflective practice has the potential to transform an individual's thinking process from instinct-driven to critical thinking. This perspective is further supported by Althaqafi (2022), who asserts that individuals who engage in reflection are more likely to think critically rather than rely solely on intuition. When reflective practice is consistently carried out by teachers, it has the capacity to significantly enhance their professional development (Moradkhani et al., 2017).

Moreover, reflective practice positively contributes to the enhancement of teachers' self-efficacy. Teacher self-efficacy refers to the belief in one's own ability to overcome challenges and barriers encountered during the teaching process (Moradkhani et al., 2017). Teaching is a dynamic process that is influenced by a range of internal and external factors. These factors often create obstacles that may affect the quality of teaching and hinder the achievement of intended learning objectives. Nevertheless, such challenges can be effectively addressed when teachers adopt a positive mindset and maintain confidence in their ability to devise optimal solutions. Moradkhani et al. (2017) further argue that the strengthening of teachers' self-efficacy is aligned with their capacity to address problems and overcome the challenges they face.

In addition, Moradkhani et al. (2017) emphasise that reflective practice extends beyond critical thinking, as it involves the process of metacognitive reflection. Metacognitive reflection is a process in which individuals think about their own thinking. Several scholars have described metacognitive reflection as a cognitive process of regulating subconscious thought, which involves planning, monitoring and evaluating one's learning strategies (Silver, 2023; Cromley & Kunze, 2020). Furthermore, metacognitive reflection fosters self-awareness, self-regulation, and lifelong learning skills (Medina et al., 2017).

Ying (2008) also highlights that reflective practice should be prioritised to ensure the effectiveness of teaching and learning, particularly in contexts that involve both theoretical and practical instruction in vocational education. This is because vocational education emphasises the integration of theory with practice. Student's ability to connect theoretical knowledge with real-world problem-solving in practical contexts can be significantly

enhanced when teachers apply reflective practice effectively in planning strategies and delivering lessons. According to Berglund, Gustavsson, and Andersson (2020), effective integration of theory and practice requires both experience and critical thinking. Through reflective practice, teachers are able to re-examine the relevance of curriculum, teaching methods and assessment approaches, while identifying strengths and areas for improvement to align instructional quality with industry demands and maximise the impact on student learning (Pratiwi, 2012).

For students, reflective practice also contributes to the development of essential skills such as problem-solving, effective communication, and leadership competencies. This is supported by experts who argue that ...

"In addition to the enhancement of knowledge, student's problem-solving skills have also improved. Referring to the 6C framework, it is evident that without communication, students would not be able to effectively solve problems or make decisions. This process also requires critical thinking and creativity. Furthermore, it contributes to the development of character, as students gradually build and strengthen their personal values."

(Expert 2)

According to Expert 1, soft skills are closely related to 21st-century learning. He highlighted that within experiential learning, many of the elements overlap with those embedded in the 21st-century learning framework, particularly in areas such as communication and leadership. These soft skills are essential in supporting student's holistic development, especially when they are entrusted with responsibilities in project-based tasks.

The three aspects highlighted problem-solving, communication and leadership are fundamental for enhancing student's soft skills and are aligned with the requirements of 21st-century learning. Reflective practice, therefore, plays a significant role in facilitating growth for both students and teachers. For students, engaging in reflective processes not only enhances their problem-solving abilities but also strengthens their capacity to manage tasks and time more effectively, thereby fostering greater autonomy in learning. For teachers, the effectiveness of reflective practice is evident when reflection opens opportunities to evaluate and refine their teaching approaches and strategies, ultimately contributing to improved quality of instruction and professional development.

Reflective practice in vocational education has a positive impact on student learning. Feedback from students, along with self-assessment conducted by teachers, provides valuable insights that enable teachers to design more suitable teaching strategies. Appropriate teaching strategies act as a catalyst in enhancing learning outcomes (Torres-Goens & Farley, 2017). Optimal learning outcomes can be achieved when teachers align student's learning styles with the selection of effective teaching strategies. Teachers who engage in reflective practice are able to foster a more positive and conducive learning environment that encourages active student participation (Ward & McCotter, 2004). Furthermore, reflective practice enhances student's critical thinking skills (Baporikar, 2021), particularly when embedded in authentic and holistic learning, compared to conventional methods of teaching (Chiva-Bartoll et al., 2020).

In addition, reflective practice supports more meaningful learning experiences for students. When teachers revisit and examine their teaching approaches, they are able to restructure the curriculum and design learning activities that emphasise practical application in real-world contexts. This makes learning more relevant and provides students with a clearer understanding of how vocational skills can be applied within actual industry settings (Suharno et al., 2020). As a result, students are more motivated and engaged, as they are able to see the value and direct impact of their learning. This assertion is also supported by Noviani (2019), who noted that reflective learning influences not only teaching but also the learning process itself, particularly through its emphasis on reflection. It is expected that such practices can nurture critical behaviours among students (Erdogan, 2019), which in turn motivates them in their learning journey.

Reflective practice also nurtures a culture of lifelong learning among students. When teachers demonstrate their willingness to continually enhance their teaching through reflection, they provide a positive example for students on the importance of continuous learning. In this context, students engage in reflective thinking activities where they review, evaluate and make judgments about their learning experiences. Such reflective thinking can improve student's critical thinking skills (Erdogan, 2019).

These skills include the ability to analyse, evaluate, and make informed decisions critically based on the information obtained (Karami et al., 2012). The application of this approach positively contributes to student's development by sharpening their problem-solving abilities, fostering fact-based reasoning, and cultivating careful and critical evaluation of situations encountered in the learning process (Xu, Wang & Wang, 2023). This, in turn, encourages students to reflect on their own learning. Consequently, students become more proactive, engaged and participative in the learning process, while deepening their understanding of the skills they acquire. Ultimately, reflective practice not only benefits teachers in refining their pedagogy but also exerts a positive and lasting impact on student's learning in the field of vocational education.

In addition, through reflective practice, teachers are able to strengthen their commitment to continuous professional development. The process of reflection encourages teachers to identify areas of skills, knowledge and teaching approaches that require enhancement. This fosters continuous self-development and greater readiness to adopt best practices that are aligned with the dynamic changes in the vocational field. Reflective practice is crucial for teachers to improve their effectiveness in teaching and guiding students. It involves an ongoing process of evaluating, adapting and refining their teaching and learning approaches, while simultaneously promoting continuous professional growth. By engaging in deep reflection on their practices, teachers can ensure that the learning experiences they provide are more meaningful and responsive to the needs of students in vocational education (AP & Motta, 2021).

Challenges of Reflective Practice in Teaching and Learning

The implementation of reflective practice in teaching and learning faces several challenges that affect its overall effectiveness. One of the primary challenges lies in time management when putting reflective practice into action (Curtis, 2020). Teachers are often caught in a dilemma between allocating time to deliver knowledge and skills while simultaneously

managing classroom activities. At the same time, they are also expected to design interactive teaching approaches to effectively convey lesson content (Gabureanu & Tripon, 2019).

For students, the difficulty lies in applying reflective practice to their own learning. According to Expert 2, students are required to revisit and reflect upon their learning experiences while completing assigned tasks or projects. However, they often face time constraints in completing these projects:

“To ensure students submit their work within the given timeframe, teachers should ideally prepare a Gantt chart... It should indicate what needs to be done in each particular week... and, more effectively, this authority could be given to the students themselves so that they can plan accordingly. Then, teachers can monitor and guide them to achieve what they have planned within the stipulated time.”

(Expert 2)

The Need for Continuous Training and Support

Colomer et al. (2020) argued that reflective practice can be sustained and effectively realised when teachers undergo mentoring sessions. Such sessions serve as a platform for teachers to revisit and critically examine their teaching practices. Aspects of teaching such as instructional strategies, student engagement and assessment must be refined so that the process of reflection provides meaningful input to improve instruction, particularly within the context of vocational education, which is largely focused on practical applications. The selection of appropriate teaching strategies such as simulation, demonstration, case studies and similar approaches can foster a more meaningful learning environment. Students are provided with opportunities to apply theoretical knowledge acquired in the classroom to real-life problem-solving. This, however, can only be translated into effective student learning if teachers possess the necessary competencies.

Furthermore, teachers need to take proactive steps to improve their teaching practices through specialised training that focuses on reflective practice. Through such training, teachers are introduced to reflection techniques relevant to the vocational teaching context. They learn how to analyse their teaching experiences more critically, identify successes and challenges encountered when teaching practical skills and refine their approaches accordingly. This training also assists teachers in exploring reflection methods that are aligned with the vocational setting, guiding them in adapting reflective practice to the realities of the industry (Suharno et al., 2020). Teachers are exposed to practical strategies that can be integrated into each teaching session. These include emphasising student-centred learning, designing practical tasks that encourage reflection and maximising experiential learning approaches within vocational education (Berglund, Gustavsson, & Andersson, 2020).

With teaching that focuses on application, teachers are able to observe how reflection influences and improves student learning in the vocational field. These courses or training programmes also introduce ways to design effective reflection. Teachers are taught to structure reflection in a systematic and organised manner, providing space for in-depth and critical analysis of each teaching session. They are guided in formulating relevant reflective questions and in monitoring the progress of their teaching. Altogether, these practices help teachers to better understand, implement and enhance their reflective practices within the

dynamic context of vocational learning. Razali (2006) explains that specialised training refers to practical experiences or training provided to vocational teachers in the education sector. Such training often involves teachers' participation in industrial activities, fieldwork or direct engagement with industry practices to strengthen their knowledge in vocational fields.

The positive effects of in-service training on the quality of teaching and learning in vocational education are significant. Teachers involved gain direct exposure to current practices in the industry, understand workplace requirements, as well as the latest technologies and advancements in technical fields. Specialised training enables teachers to update their knowledge, understand current challenges in the industry and align their curriculum with the latest industrial needs. This ensures that students receive more relevant and practical instruction, preparing them more effectively for the demands of the labour market. Furthermore, the practical experience gained through specialised training allows vocational teachers to bring real-life industry examples into the classroom, enliven theoretical concepts and provide illustrations of application in authentic situations for students. This offers students greater exposure to how theories are translated into industry practices.

In addition, specialised training received by teachers can strengthen the relationship between educational institutions and industry. This may open up opportunities for closer collaboration between schools and industrial companies, providing students with better opportunities for industrial training and a deeper understanding of their future work scope. Razali (2006) emphasises that the specialised training undertaken by teachers has a significant positive impact on the quality of teaching and learning in technical and vocational fields. This not only benefits teachers, but also provides positive outcomes for preparing students to face an increasingly complex and rapidly changing labour market.

Sharing Sessions among Teachers

Developing a sharing platform for vocational teachers is an important step in enhancing reflective practice. Through such a platform, teachers are able to interact, share teaching experiences and discuss best strategies. The exchange of ideas derived from their practical experiences can enrich each teacher's knowledge of effective reflective approaches. Teacher-to-teacher sharing enables the growth and exchange of perspectives on the impact of reflective practices on vocational learning. They are able to assess the suitability of reflection techniques within the vocational field, stimulate innovation and improve teaching processes. This motivates them to experiment with new approaches and adapt teaching methods based on reflections conducted collectively.

Awareness of various reflective approaches helps vocational and technical teachers to be more responsive to student's needs and industry demands (Suharno et al., 2020). Furthermore, such sharing fosters a culture of continuous learning and mutual support among teachers, strengthening a professional community that is oriented towards self-development and overall improvement in the field of vocational teaching.

Support from School Management

Leadership and educational institutions play an important role in supporting reflective practice among vocational teachers (Daniëls et al., 2020). They need to provide active support by ensuring the availability of necessary resources, such as reading materials, reflective tools

and access to training related to reflection. In addition, it is important for institutions to provide adequate space and time for teachers to carry out the reflection process. This includes granting teachers the freedom to conduct regular and in-depth reflections without being constrained by other pressing tasks.

Reflective practice should be integrated into teacher training programmes and school education policies (Fund et al., 2002). Teacher training programmes should incorporate systematic reflection sessions as part of teachers' professional development. According to Ottesen (2007), there are three modes of reflection during teaching practice in teacher education. First, reflection as an introduction to thoughts and actions that are considered appropriate and acceptable in the teaching context. Second, reflection as conceptual development, meaning that teachers develop new understandings and concepts related to their teaching through the reflection process. Third, reflection as practice, which refers to situations where teachers critically review their teaching sessions in depth. This demonstrates to teachers that reflection is not merely an additional task but an essential element for enhancing their teaching competence.

Furthermore, an institutional culture that emphasises reflective practice will shape a school culture that values continuous improvement. Beyond providing support, it is also important for institutions and management to recognise and appreciate the value of reflection in teacher performance assessments. This serves as an additional incentive for teachers to actively engage in reflective practices. With strong support from educational institutions and school management, teachers will be able to appreciate the significance of reflection in their professional development and apply it effectively in their teaching, ultimately leading to a positive impact on student learning outcomes.

Utilisation of Reflective Tools and Self-Assessment

The use of reflective tools such as journals, checklists or digital applications is an important aspect in facilitating teachers' reflective practices (Ene & Riddlebarger, 2015; Ying, 2008). Reflective journals enable teachers to systematically record their daily teaching experiences (Farrell, 2013). In these journals, they can document positive aspects as well as the challenges encountered during teaching. This allows teachers to engage in deeper reflection on each teaching session. A study conducted by Muhammad & Ahmed (2021) found that participants perceived reflective practice and reflective journal writing as significant methods for enhancing teachers' self-confidence and improving their roles in delivering quality instruction (Pratiwi, 2012). Furthermore, journal writing can also serve as a guide for organisations to implement continuous improvement (Bain, 1999).

In addition to journals, reflective checklists assist teachers in evaluating the effectiveness of their teaching. Such checklists usually contain criteria that need to be assessed, such as the achievement of learning objectives, the effectiveness of teaching strategies, student engagement in learning activities and areas requiring improvement. The use of these checklists helps teachers to identify strengths and weaknesses in their instructional practices.

Beyond conventional tools, digital applications can also be integrated into the reflective process. These applications can record and manage teaching data conveniently

while providing more detailed and visual analyses of teachers' reflective practices (Hofer et al., 2021). The incorporation of technology makes the reflective process more efficient and effective. The use of reflective tools is not only about documenting experiences but also about assessing progress and fostering awareness of changes in teaching practices. It cultivates a culture of continuous reflection within the teaching profession, enabling teachers to become more responsive to student's needs and to enhance the impact of teaching within the vocational education landscape.

Mentorship and Peer Coaching

The mentorship and peer coaching system is a highly effective approach in enhancing awareness and competency in reflective practice among vocational teachers. In the mentorship system, more experienced teachers guide and provide direction to novice teachers in implementing reflection effectively. Mentors help facilitate the reflective process, share experiences and provide valuable advice based on their expertise in vocational teaching. Meanwhile, peer coaching involves interaction among colleagues in giving and receiving feedback. Teachers collaborate while offering objective perspectives on each other's teaching and provide suggestions for improvement based on their own experiences. This reciprocal process of giving and receiving feedback creates opportunities for deep reflection and supports professional growth among vocational teachers.

Both systems not only provide practical support in carrying out reflection but also foster a culture of mutual assistance and continuous learning among teachers. They encourage ongoing reflective processes and contribute to the collective improvement of the quality of vocational teaching (Pratiwi, 2012). Through involvement in mentorship and peer coaching systems, teachers can develop their reflective competence, increase awareness of student's learning needs and strengthen the positive impact of teaching on effective vocational learning. The implementation of these strategies enhances teachers' awareness of the importance of reflective practices in vocational education. Furthermore, it cultivates a reflective culture that contributes to the overall improvement in the quality of vocational teaching and learning.

Discussion

Reflective practice in vocational education is more oriented towards practical skills. Vocational teachers specifically reflect on how practical skills are learned, practiced and integrated within the real industry context (Suharno et al., 2020). In contrast, in the academic stream, reflection tends to focus on curriculum aspects, teaching strategies and theoretical learning without a particular emphasis on practical application. For instance, tools such as reflective journals are used to record practical teaching experiences, note discussions on student learning effectiveness and design improvement actions for teaching skills. However, in non-vocational education, reflection is more often used to evaluate academic performance, adjust teaching strategies or align the curriculum with educational standards without a strong focus on in-depth practical aspects.

Another important difference lies in the approach to assessing the impact of reflection within the learning context. In vocational education, the impact of reflection on student's learning is emphasized on the application of skills in real industry settings and achievements

in practical aspects. Conversely, in other educational streams, reflection assessment is more focused on improvements in academic performance and conceptual understanding.

A comparison between reflective practices in vocational and other education streams reveals significant differences in focus, reflective tools used and the evaluation of reflection impacts on learning. This underscores the uniqueness and importance of aligning reflection with practical needs in vocational education, which emphasizes the development of practical skills, soft skills and contextual understanding for students entering the professional world.

Firstly, evaluating the effectiveness of reflective practices in vocational teaching is an essential step in determining the impact and effectiveness of the reflection process on student learning. The evaluation process involves assessing teachers' readiness to implement reflection. This includes the extent to which teachers understand and apply the reflective process in their teaching, as well as how far they integrate the outcomes of reflection into vocational lesson delivery.

Secondly, evaluating the effectiveness of reflective practices also considers the changes teachers make after engaging in deep reflection. Here, it is important to assess the extent to which teachers successfully apply reflective outcomes in their teaching. This includes improvements made, new methods implemented and how reflection helps align teaching with student's needs and industry demands (Suharno et al., 2020). Evaluating the effectiveness of reflective practices also involves assessing the positive impact on student learning. It measures how vocational learning changes and develops as a result of teachers' reflection, including changes in student learning, improvements in practical achievements, and their readiness to apply learned skills in real industry contexts (Suharno et al., 2020).

The evaluation of reflective practice effectiveness in vocational teaching not only assesses the reflection activity itself but also its impact on student learning and teachers' professional growth. This holistic evaluation enables the formation of more effective reflective practices, bringing positive impacts to vocational learning that is relevant to industry needs (Suharno et al., 2020).

Engaging in reflection within vocational teaching involves certain challenges that require solutions to ensure that reflective practices yield positive impacts. One of the main challenges is limited time. Vocational teachers are often engaged in teaching responsibilities, lesson material preparation and other administrative tasks, leaving limited time for reflection. Solutions to this challenge include scheduling consistent reflection time, integrating reflection into daily routines and providing institutional support to prioritize reflection during working hours.

Another challenge is the willingness to critically examine one's teaching. Teachers may feel uncomfortable scrutinizing weaknesses in their teaching or acknowledging areas for improvement. Solutions to this challenge involve cultivating an open culture towards learning through reflection, guiding teachers to view mistakes as opportunities for growth and building self-confidence in their teaching competencies. In addition, another challenge lies in measuring the impact of reflection on student learning. Teachers often struggle to observe the direct impact of their reflection on student's achievements and understanding. Effective

solutions include adopting holistic assessment methods, such as continuous monitoring of student progress and engaging students in practical learning processes that are based on teacher reflection.

Reflective practice in vocational teaching presents challenges but also provides opportunities for continuous professional growth. By being aware of these challenges and striving to overcome them with appropriate strategies, vocational teachers can surmount these barriers and gain substantial positive benefits from reflective practices in their teaching.

Conclusion

The findings of the study demonstrate that reflective practice in teaching and learning (T&L) is an element that produces positive effects on the quality of T&L. However, the implementation of reflective practice requires strategic planning, systematic evaluation instruments and continuous guidance. Five main patterns have been highlighted in this study: (i) the reflective process must be integrated into T&L planning in a structured and systematic manner; (ii) the use of reflection rubrics, authentic assessment and journals helps objectively evaluate reflective practices; (iii) soft skills such as problem-solving, communication and leadership can be enhanced through reflection; (iv) lack of training in reflection and difficulties in objectively evaluating reflection are major challenges; and (v) continuous training for teachers is necessary to ensure that reflection is effectively embedded in T&L.

It is clearly evidenced that this study contributes significantly to the existing body of knowledge, the underlying theoretical foundations, as well as the contextual understanding and the impact of reflective learning on teaching and learning. The findings indicate that teachers need to engage in structured and systematic planning in order to implement the reflective process effectively. This is further supported through the use of reflective instruments, such as authentic assessment, rubrics, and journal writing. The theory of reflective learning is further reinforced when reflective practice is shown to enhance soft skills. The mastery of soft skills, such as communication, leadership, and problem-solving, can be progressively improved over time. Consistent and continuous training ensures the effectiveness of the reflection being carried out.

Contextually, teachers are provided with guidance to plan teaching and learning in a more systematic manner by integrating reflective elements. The methods of assessment and the effectiveness of reflective practices are also discussed. This directly offers a comprehensive overview of the implementation of reflective practices in the field, particularly within the context of vocational education. This is because vocational education emphasizes the mastery of soft skills in addition to practical competencies. Such emphasis is demonstrated through the themes that emerged from in-depth expert interviews. These findings serve as a valuable reference for stakeholders in formulating policies that focus on the need for continuous reflective training in teacher professional development.

In relation to its significance for existing knowledge, this study reinforces prior findings that reflection is not merely a spontaneous activity. Rather, reflection constitutes a process that requires careful planning and clearly defined objectives. Through this study, knowledge concerning reflective practice has been further advanced by translating empirical evidence into scholarly understanding. The evidence obtained substantiates that reflective practice

contributes to both academic improvement and the enhancement of soft skills. These findings are consistent with and extend the results of previous research. Furthermore, the study identifies challenges and barriers to the implementation of reflection, such as insufficient training and the difficulty of assessing the attainment of objectives. Hence, the effectiveness of reflection necessitates sustained practice and continuous training.

Through this study, teachers are guided to consistently re-evaluate the effectiveness of T&L by engaging in continuous reflective practice. This process necessitates accurate measurement of the reflection undertaken, as T&L serves as a platform for shaping students' character, competitiveness, and skills. Through reflective learning, teachers are better positioned to assess the effectiveness of their instructional practices and to implement appropriate improvements that contribute to positive change.

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