Educational prerequisites to ensure the use of students’ reflection practice in the learning process

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ABSTRACT

Purpose: The objective of this study is to analyse the relationship between teachers and the pedagogical requirements of the learning process that ensure that students use reflective practice in the learning process by studying the theoretical framework of the concept of reflection.

Design/Methodology/Approach: A phenomenological research design was chosen which is based on the paradigm of humanistic research. The method of inductive content analysis was chosen for the analysis of qualitative data.

Findings: The empirical findings of the research indicate that setting goals is essential for the reflection process. Students must actively participate in the process by focusing on, evaluating and applying critical thinking to specific content in order to achieve those goals.

Conclusion: The study highlights the importance of reflection activities in the learning process which allow students to base their decisions on their previous experiences, choose and verify the correctness of learning concepts, focus on growth, improve research skills and create new experiences. Teachers need to incorporate this into practice by actively involving students in the learning process to facilitate the reflection process.

Practical Implication: The result indicates that reflection practice is crucial in the learning process. Teachers need to incorporate this into practice that allows the students to be actively involved in the learning process and take responsibility for their progress.

Keywords: Education, Learning process, Professional competence of teachers, Reflection, Student, Teacher.

1. INTRODUCTION

The labour market demands and educational trends in today’s society emphasise the critical need for competitive and professional educators. These educators must possess the ability to adapt to constantly changing life situations, think creatively and focus on achieving set goals while continuously developing their professional skills. The Council of the European Union (European Commission, 2019) has identified eight key competences essential for lifelong learning, personal growth, healthy lifestyles, sustainable employment, active civic participation and social inclusion. One of these core competences is the personal, social and learning-to-learn competence. It encompasses various skills such as reflection, effective time and information management, constructive cooperation with others, resilience in different situations, self-directed learning and career management to cope with uncertainty and complexity. Furthermore, it includes the capacity to maintain one's physical and mental health, lead a future-focused and health-based life, show empathy and manage conflict in a constructive and inclusive manner (European Commission, 2019). Balancing educational objectives to meet the needs and expectations of a changing and polarized society presents a significant challenge in the learning process. Reflection plays a vital role in this process as it encourages a deeper understanding of a teacher’s professional activities, strengthens critical thinking, improves practice and fosters a student’s belief in their own learning abilities. This study aims to analyse and summarize the relationships of teachers regarding the pedagogical prerequisites of the learning process to recognise the importance of teachers in promoting and ensuring the effectiveness of the reflection process as well as the direct connection between reflection practice and teachers’ knowledge and...
experience. This research seeks the answer to the question raised by studying the theoretical framework of the concept of reflection: what educational prerequisites ensure the use of students' reflection practice in the learning process?

2. LITERATURE REVIEW

Professionals are expected to be competitive and adaptable, capable of thinking creatively and focusing on achieving goals. As a result, education in the 21st century faces the challenge of balancing educational goals with the changing needs of society. According to Huyhn (2022), McGarr (2021), and Seitova (2019), reflection plays a valuable role in the development and understanding of teaching and learning. According to the European Qualifications Framework (European Commission, 2018), reflection is one of the most important competencies for university graduates. It equips learners and future specialists with the ability to navigate problems and changing situations both personally and professionally. Reflection supports lifelong learning and enhances professional practice by fostering self-awareness and deepening analysis and evaluation skills, ultimately strengthening critical thinking and improving practice (Kirkham, 1997).

Reflection can be defined as a cognitive process that involves thinking, analysing and reflecting on experiences to gain knowledge (Johns, 2009). Reflective problem-solving allows people to change their own behaviour in the future (Arms, 2018; Treacy & Gaunt, 2021). Dewey (1933) describes it as an active and ongoing cognitive activity that starts with confusion and leads to the observation of difficulties and the experimental testing of solutions. Similarly, Schon (1983) links reflection to experience, developing the concept of reflective activity which involves discovering, criticizing, restructuring and testing intuitive understanding in real-time.

Reflective learning is a process of introspection and exploration of a concern triggered by experience that helps individuals create and clarify meaning from their experiences, resulting in a changed conceptual perspective (Boyd & Fales, 1983). It has also been described as adaptive learning (Van Woerkom, 2004), self-construction (Dempsey, Halton, & Murphy, 2001), self-awareness (Loo, 2002), coordinated understanding (MacLellan, 2004) and critical self-reflection (Cope, 2003). In the context of education, practitioners engage in critical reflection by taking a step back from a situation or experience, posing thoughtful questions and bridging the gap between theory and practice leading to changes in their teaching practice (Russell, 2018). It investigates and seeks the facts surrounding an experience because contexts are frequently taken for granted but influence our understanding (Bateson, 2000).

Hatcher and Bringle (1997) argue that reflection provides an opportunity to gain a broader understanding of a field and develop self-evaluation skills. Individuals can experience a change in perspective through the process of inquiry and self-examination as they gain new knowledge and experiences (Hay, Peltier, & Drago, 2004). Research has been conducted on reflection in education (Billing, 2007; Boud, Keogh, & Walker, 2005; Moon, 2004; Rogers, 2001). There is no unified definition of reflection or standardized approach to incorporating reflection into the teaching and learning process.

Research suggests that reflection deepens the learning process and enables students to develop a more complex and integrated structure of knowledge (Billing, 2007; Moon, 2004). In the context of learning, reflection encompasses intellectual and emotional activities that allow individuals to explore their existing experiences and gain new understanding (Boud et al., 2005). It is a crucial aspect of the learning process as it allows students to reinforce what they have learned, make improvements and engage in immersive learning. Students are able to document their learning, provide feedback and build upon and share their experiences through reflection. It also helps students recognize their accomplishments and fosters a continuous learning mindset (Helyer, 2015).

The analysis of concepts related to reflection reveals that it is a cognitive process that generates knowledge about cognition and how it is regulated (Benammar, 2004; Cowan, 1998; Dewey, 1933; Mezirow, 1991; Schon, 1983). According to Boud et al. (2005), the cognitive dimension, the emotional dimension and the role of experience are also significant in reflection (Dewey, 1933). Dewey (1933) proposed the theory of reflective thinking which highlights the interconnectedness of action and thinking occurring simultaneously. Reflective processes have been described using various complex terms such as reflection in action, metacognitive reflection, reflective learning, critical reflection and reflective thinking (Rogers, 2001). Defining reflection in the teaching and learning context can be challenging but Rogers (2001) identifies key elements: reflection requires active involvement which is triggered...
by unusual or ambiguous situations and involves exploring one’s experiences and beliefs to gain new understanding and experiences.

In competency-based education, teachers need competencies to support the reflective processes of students. Currently, teacher competence is defined as an integrated concept that denotes the knowledge, skills and attitudes of teachers in a certain context when performing professional tasks (Sultana, 2009). In the context of developing students' reflection skills, it is desirable that teachers' support be specifically tailored. This means that teaching, tasks, learning and feedback are related to the students' zone of proximal development: the range of skills that the student can achieve with assistance but cannot perform independently (Vygotsky, 1978).

One of the prerequisites for reflective practice to take place in the classroom is to create a positive atmosphere. A good relationship between teachers and students increases opportunities for cooperation in the classroom while reducing the frequency of negative emotions (Taxer, Becker-Kurz, & Frenzel, 2019). At the same time, Rolfe and colleagues (Rolfe, Freshwater, & Jasper, 2001) believe that the practice of reflection is based on three questions that can help students and teachers achieve goals: “what?” is related to describing an event and defining the self-awareness associated with it. The second one is “so what?” related to the cycle analyses the situation under consideration and begins to evaluate the circumstances under consideration and the third one is “now what?” related to synthesizing information and knowledge because based on previous elements, one thinks in more detail about what to do differently in the future and be prepared for what could be done if similar situations repeat themselves again. The three stages of the model invite consideration of what happened and the consequences of future actions. The pattern is cyclical indicating continuity. Changes in behaviour or approach resulting from reflection can then be analysed and either further revisions made or changes deemed appropriate (Rolfe et al., 2001).

Researchers (Rolfe et al., 2001) believe that these questions can be used to refine reflective thinking and isolate key elements of a situation or event so that they can be understood in greater detail.

Students can become more culturally inclusive and confident in their learning process by engaging in reflective practices (Butville, Hanrahan, & Wolkenhauer, 2021; Carrington & Selva, 2010; Durden & Truscott, 2013; Slade, Catalana, & Waters, 2019). When teachers are appropriately educated about reflective practices, they can provide meaningful opportunities for students to engage in intentional and critical reflection. This results in long-lasting modifications to the students’ learning process that enhance their capacity and make them better at solving problems (Butville et al., 2021; Taylor, Newberry, & Clark, 2020).

3. METHOD

A phenomenological research design was chosen that is based on the humanitarian research paradigm followed by a qualitative approach that describes the meaning of the lived experience of several individuals in relation to a concept or phenomenon in order to find out the teachers’ ideas about the pedagogical prerequisites that ensure the use of students' reflective practices in the learning process (Denscombe, 2003; Pipere, 2016; Todres & Holloway, 2004). In phenomenological research, the emphasis is on describing the experiences of the research participants without paying attention to the researchers’ interpretation and then analysing the themes and meanings (Moustakas, 1994).

A survey with closed and semi-closed questions was chosen including four demographic closed questions and one semi-closed question, asking the research participants to describe their experience and complete the pedagogical prerequisites that ensure the use of students’ reflection practice in the learning process. It was also indicated that there was no need to explain the concept.

Respondents completed an online survey created on the Google Survey form, so respondents could provide answers at a more convenient place and time for themselves following the basic principles of academic honesty. 50 surveys were sent out and 44 completed surveys were received.

The method of inductive content analysis was chosen for the analysis of qualitative data. In the process of organizing qualitative data, the following were performed: decoding, creation of categories, grouping and generalization (Pipere, 2016).

4. RESULTS

44 research participants (teachers) are involved in the study. Targeted selection was chosen by selecting participants with typical experience (Pipere, 2016). All 44 study participants are mostly women. In describing the...
age of respondents, it should be noted that 28 (63.64%) of study participants are aged 51 to 60 years, 8 participants (18.18%) are aged 41 to 50, 5 participants (11.36%) are aged between 31 and 40 years, 3 participants (6.82%) are above 61. In describing the education of respondents, it should be noted that 18 (40.91%) respondents have a master's degree while 26 (59.09%) have a bachelor's degree. Empirical research shows that 33 (75%) respondents have more than 20 years of professional experience in school, 6 (13.64%) respondents have 6-15 years' experience in school and 5 (11.36%) respondents have 16-20 years of experience in school. By grouping the codes obtained in the process of open coding, 11 subcategories were created which were combined into 8 general categories in the process of generalization (time, plan, teacher-led process, critical thinking, involvement, content, teacher competence and goal) (see Table 1).

Table 1. Category generalization process

<table>
<thead>
<tr>
<th>Descriptive phrases (Codes)/Amount of them</th>
<th>Category</th>
<th>Generalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time /4</td>
<td>Time</td>
<td>Time</td>
</tr>
<tr>
<td>Frequency of reflection /1</td>
<td>Frequency</td>
<td></td>
</tr>
<tr>
<td>Plan how and what to do /2</td>
<td>An action plan</td>
<td>Plan</td>
</tr>
<tr>
<td>Teacher's explanation, questions /3</td>
<td>Teacher's help</td>
<td>Teacher-led process</td>
</tr>
<tr>
<td>Use of critical thinking/5</td>
<td>Critical thinking</td>
<td>Critical thinking</td>
</tr>
<tr>
<td>Student involvement in the process /5</td>
<td>Student’s involvement</td>
<td>Involvement</td>
</tr>
<tr>
<td>Problem/reason to reflect on/10</td>
<td>Content</td>
<td></td>
</tr>
<tr>
<td>Knowledge about a topic /1</td>
<td>Knowledge</td>
<td></td>
</tr>
<tr>
<td>Teacher’s reflective abilities /3</td>
<td>Competence of the teacher</td>
<td>Competence of the teacher</td>
</tr>
<tr>
<td>Setting different goals /7</td>
<td>Purposefulness</td>
<td>Goal</td>
</tr>
<tr>
<td>Criteria that the student must know /2</td>
<td>Criteria</td>
<td></td>
</tr>
</tbody>
</table>

The process of generalization into general categories has made it possible to see the pedagogical prerequisites that ensure the use of students' reflective practices in the learning process. When conducting an additional analysis of the codes obtained in the open coding process, the following trends can be seen:

1) Prerequisites related to the students such as their involvement in the reflection process and critical thinking. Reflection must be ongoing, connected challenging and context-based in order to make sense (Eyler, Giles, & Schmiede, 1996). Students must collect, interpret and analyse their learning experiences or critically consider the context in order to ensure such compliance. This involves engaging in the reflection process.

2) Prerequisites related to the teacher: A teacher's role in promoting a successful reflection process is integral. By guiding students through the reflective process with open and advancing questions, teachers can help students reach their desired learning outcomes more effectively than if they were to attempt it alone (Sargeant et al., 2015). Additionally, teachers should encourage both cognitive and emotional reflection because understanding facts or data is only one part of learning in order for students to gain knowledge (Sargeant et al., 2015).

3) Prerequisites related to both students and teachers such as time planning, goal setting, content research and analysis and operational planning. The reflection process begins with identifying the problem and deciding to seek a solution. A plan or decision to act is developed through cognitive activities (Rogers, 2001) where cognitive actions include comparison, analysis, evaluation, questioning, drawing conclusions and planning (Stokking, Van Det Schaaf, & Erkens, 2004).

Thus, the results of the empirical research allow to conclude that reflection is associated with the teacher who leads the reflection process and is actively involved in studying specific content, analysing it, using critical thinking and planning his further action. The collected results show that the research participants (teachers) have both knowledge and experience in reflection because the general and subcategories obtained in the process of generalization reveal the emergence of associations based on concepts, knowledge and experience. During the compilation and comparative analysis of the answers given by the research participants to the semi-closed questions of the survey questionnaire and the answers to the closed demographic questions of the survey, no common characterizing factors such as age, acquired education or length of work experience at the school...
could be seen that could influence the teachers' association about the pedagogical prerequisites for using reflection in the learning process.

5. DISCUSSION

Using reflection as a teaching and learning strategy is not a novel concept. According to a previous literature review, reflection plays an important role in the learning process. Teachers who use reflection seem surprised by its importance. The findings of the study show that the realization of reflection is largely to be welcomed and this reflection later becomes the focus of teaching and learning which brings many benefits. A significant challenge for teachers is to encourage students to reflect on their learning and actively participate in it. The study’s results indicate that participants generally have an understanding of reflective teaching and are aware of its value and shortcomings. Reflection is practiced in various ways during lessons. Teachers may not always be confident in their approach. They constantly reflect on their actions in the classroom and strive to improve, aiming to become better educators. Teacher learning groups in schools provide a platform for discussing teaching and learning-related issues with colleagues. Moreover, they foster reflective learning among their students by involving them in decision-making and seeking their feedback. However, an important finding of this study reveals that some research participants hold misconceptions about reflective teaching and the different ways students can reflect on their actions in the classroom. They may also be uncertain about what encourages students to reflect. These misconceptions or ambiguities suggest that some participants lack accurate or sufficient information about reflective teaching and its various aspects, highlighting the need to provide teachers with the necessary information about reflective practice. Additionally, consistent encouragement to reflect on learning and the teaching process serves the purpose of reflection. Students who engage in reflection develop the ability to analyse teaching and learning processes more comprehensively, drawing on theory and criteria. They become skilled at identifying reflective situations from different perspectives in a controlled manner.

Schon (1983) emphasizes that reflection is not an isolated process but is directly linked to action. According to him, reflection aids in understanding performance and improving it. Students need to explore the problems they face by evaluating different interpretations and adjusting their behaviour accordingly. The goal is to enhance one's actions, develop additional competencies and cultivate a positive and open attitude towards professional skills (Leitch & Day, 2000).

Reflection instruction aids students in understanding the value of previously learned material and solidifies newly acquired knowledge. Thus, at the end of each task, teachers should ask students to reflect on the work done and the value of the work done and to conclude what the students themselves have gained and what they still need to do to improve their performance which in turn will help students understand how they learn, discover the value of learning and to reveal those problems that still need to be solved (Roskos, Vukelich, & Risko, 2001). Teachers can also ask questions during the activity process in order to improve students' metacognitive knowledge through reflection (Van Velzen, 2016).

Teachers should be encouraged to adopt reflective practice as part of their professional development. Teachers can not only improve their own learning but also foster a culture of reflection in their students by understanding and using the benefits of reflective practice. The Ministry of Education should provide guidelines and facilitate exchange programs for sharing experiences between educators to ensure that teachers are able to successfully implement reflective practices. This will help create consistent and systematic reflection activities which will ultimately result in improved teacher competencies across all educational institutions.

6. CONCLUSION

According to the theoretical analysis of the research, the concept of reflection both demonstrates the complexity of the reflection process and supports its significance in the field of education. Consequently, the specific characteristics of reflection must be taken into account when using the concept of reflection in all its possible forms and in all related contexts.

Reflection allows students to build on their previous experiences, choose and verify the correctness of learning concepts, focus on growth, improve research skills and create new experiences. Students review and re-examine the acquired knowledge, explore its depth and strengthen it. Reflection is effective if the teacher guides the
student through the process by asking open-ended questions thereby involving the students' cognitive and emotional capabilities.

The results of the empirical research show that in order for the reflection process to take place, it is necessary to set goals and to achieve them, the student must be actively involved in the process, studying specific content, analysing it, using critical thinking and planning his future actions. In order to focus on further development, the reflection process should be guided and conducted on a regular basis. Reflection in the learning process should be designed as a dialogue in which the students can actively participate and thus understand, review and take responsibility for their learning progress.

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INSTITUTIONAL REVIEW BOARD STATEMENT
The Ethical Committee of the Liepaja University, Latvia has granted approval for this study (Ref. No. 7).

TRANSPARENCY
The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

COMPETING INTERESTS
The authors declare that they have no competing interests.

AUTHORS’ CONTRIBUTIONS
All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

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670


