

Self-assessment in the context of visible learning

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Abstract

Visible learning is an imperative of the current instructional process. Visible learning is a concept that refers to the fact that students have a clear understanding of the learning objectives, learning processes, and success criteria, so they can assess their own progress (Hattie & Anderman, 2013). Through active involvement, students become partners in the learning process and are involved in making decisions about their own goals and learning strategies. The active involvement of students facilitates their self-assessment, which is one of the key components of visible learning. In this context, visible learning involves the use of didactic strategies that make learning transparent to students, by providing specific and timely feedback, and by promoting collaboration and self-assessment (Fisher, Frey & Hattie, 2016). Self-assessment is a process by which students monitor and assess the quality of cognitions and skills while learning and identify strategies for improving their acquisitions. This aspect of formative assessment involves setting objectives and evaluation criteria, which can facilitate the self-assessment process. Self-assessment is a condition of visible learning, as it involves students to take responsibility for assessing their own learning, to adjust their learning based on the feedback received, and to set specific objectives to improve their performance. In this article, we highlight the specifics of students' self-assessment by presenting theories (cognitive control theory, self-determination theory) and self-assessment models used in practice. Based on the theoretical analysis, we identified the principles that can make the process of student self-assessment more efficient in the context of visible learning. Methodologically, a questionnaire and a test were applied, based on which we ascertained the students' opinion regarding their self-assessment process and the level of implementation of self-assessment in the didactic process. As a result, we formulated conclusions and recommendations for improving the process of self-assessment and formative assessment of students.

Keywords: assessment, formative assessment, self-assessment, learning, visible learning.

1. Introduction

In the context of innovations in the educational field, the concept of learning has evolved. Nowadays, learning is not just about the simple transfer of knowledge, but it

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emphasizes transparency, interaction, and the involvement of students in their own learning process. This process demands visibility on the progress and on the responsibility of each student for their own academic development.

In the current instructional process, visible learning is a concept that focuses on the transparency and clarity of learning for students. This approach fosters a culture of responsibility, where students are encouraged to explore their own learning, identify their strengths and weaknesses, and develop their metacognitive processes. The term „visible learning” was introduced by John Hattie, who notes that the „visible” aspect involves making the students' learning visible to teachers, thereby ensuring the clear identification of the attributes of progress. Visible learning also refers to the fact that everyone involved in the didactic process must visibly know the impact they have on learning (Hattie, 2014). J. Hattie (2012) argues that teachers who adopt the principles of visible learning promote a culture of success, develop a common understanding of the direction of learning and success, and help students become their own teachers.

Hattie and Anderman argue that in the process of visible learning, students clearly understand the learning objectives, learning processes, and success indicators, for the purpose of monitoring and evaluating their own progress (Hattie & Anderman, 2013). By clearly understanding the learning objectives and assessment criteria, students become more engaged in their own learning process. In a visible learning environment, students are actively involved in the learning process and become partners in their own development. The active engagement of students facilitates self-assessment, a crucial component of visible learning. In this regard, teachers encourage students to participate in setting learning objectives, to assess their own progress, and to reflect on their own learning. This approach promotes self-assessment and students' responsibility for their own learning. Thus, Fisher, Frey and Hattie assert that visible learning involves providing specific and timely feedback, promoting collaboration, and self-assessment (Fisher, Frey & Hattie, 2016). In this context, self-assessment becomes a key component of visible learning, facilitating the process by which students become aware of their own progress, understanding their abilities, and identifying ways for continuous development.

Self-assessment is a process whereby students monitor and evaluate the quality of their cognitions and skills while learning and identify strategies to enhance their acquisitions. This facet of formative assessment entails the establishment of objectives and assessment criteria, which can streamline the self-assessment process. Self-assessment necessitates that learning be visible because it requires students to take responsibility for assessing their own learning, to adjust their learning based on the feedback received, and to set specific goals to improve their performance.

J. Hattie asserts that one of the most powerful effects on learning stems from self-assessment, which involves the ability to assess one's own learning process and to adjust learning strategies accordingly (Hattie, 2008). According to the theory of cognitive control, students play an active role in the learning process by monitoring and adjusting

their own cognitive processes. This is a central aspect of visible learning where students are seen as active partners in the learning process.

Regarding the issue of self-assessment, existing research has addressed various aspects of this process, revealing valuable insights into how students assess their own progress. However, there are certain aspects that have not been addressed yet or have been insufficiently explored in the specialized literature, such as the theoretical and methodological landmarks of self-assessment in higher education. From the analysis of the literature on self-assessment, a significant gap has been identified concerning the level of understanding of existing theories compared to the actual practices of self-assessment implemented in the academic environment. Therefore, the identified gap indicates the need for further and more in-depth research that explores not only the theoretical aspects of self-assessment but also provides a more detailed perspective on actual practices in the context of visible learning.

2. Theoretical background

„Self-assessment is both pivotal and requisite, as it facilitates self-knowledge and fosters self-awareness—fundamental facets that, progressively, empower individuals to ascertain the meaning of their own value, an indispensable precursor for any form of transcendence. This readiness, when examined through the lens of continuous education, demands an individual's dedication not only to their own formation but also to the act of evaluating their own progress towards self-enhancement” (Cerghit, 2008, p. 373). Relating this methodology to the functions of evaluation, we posit that self-assessment regulates instruction by implementing modifications in its method of delivery.

Panadero et al. defines self-assessment as „wide variety of mechanisms and techniques through which students describe and possibly assign merit or worth to the qualities of their own learning processes and products” (Panadero et al., 2016, p. 804). Epstein and his colleagues delineated self-assessment as „ongoing self-monitoring” (2008, p. 5). „Self-monitoring is characterized by an ability to attend, moment to moment, to our own actions; curiosity to examine the effects of those actions; and willingness to use those observations to improve behavior and patterns of thinking in the future” (Epstein et al., 2008, p. 5). Recently, the formative perspective of self-assessment is taking shape in various educational contexts. For example, Sargeant noted that most researchers define self-assessment from a formative perspective and consider it an activity that relies on both external and internal data to inform and make decisions regarding the performance of learners. Sargeant also emphasizes that self-assessment is effective if guided by assessment criteria: „multiple external sources can and should inform self-assessment, perhaps the most important of which being the performance standards” (Sargeant, 2008, p. 1).

Other research has shown that self-assessment can influence academic performance (Hamodi et al., 2017; Yan & Brown, 2017; Zulliger et al., 2022).

Although self-assessment is primarily an introspective action, it transcends the concept of „self“. The presence of „others“, in addition to the „self“, plays a pivotal role in the self-assessment process (Boud, 1999; Brown & Harris, 2013; Yan & Brown, 2017). The proactive role of students in the self-assessment process aligns with the feedback provided from the learning environment.

To achieve an efficient self-assessment process, Rolheiser (1996) proposes the implementation of a staged self-assessment process, identifying stages and levels of student involvement in assessing their own acquisitions. Subsequently, we elucidate the essence of each stage of self-assessment implementation (table 1):

1) Stage I - the teacher involves students in setting the assessment criteria. Often, students come with ideas to negotiate with the teacher to reach the final criteria. At the beginner level, the teacher provides the assessment criteria to the students, and as the students develop a deeper understanding of the assessment process, they can be actively involved in setting the criteria.

2) Stage II - the teacher demonstrates how to use the criteria for assessment tasks. At the beginner level, students apply the criteria following specific examples. At the intermediate level, students are responsible for applying the criteria following the description and explanation provided by the teacher. At the advanced level, students apply the criteria based on a model provided by the teacher. In other words, they are able to develop and elaborate their own model for applying the criteria. This advanced approach reflects a deep understanding of the criteria and the ability to apply them in various contexts.

3) Stage III - the teacher provides feedback on the students' application of the criteria. At this stage, feedback should refer to the assessment criteria. At the beginner level, feedback is provided exclusively by the teacher. As students learn how to provide feedback, they are encouraged to offer reciprocal feedback. This level of implementation assumes that students start developing their critical analysis skills and feedback provision. At the next level they can be involved in assessing their own progress.

4) Stage IV - involves identifying subsequent learning objectives and strategies that can help achieve the objectives. If at the beginner level, the learning objectives and strategies are set by the teacher, then as the self-assessment skills develop, students become capable of formulating objectives and setting learning strategies independently. The advanced level at this stage involves a deep understanding of one's own learning styles and how students can achieve the best results.

Table 1. Scheme for Progressive Implementation of Self-assessment
(adapted from Rolheiser, 1996)

<i>Stages of self-assessment implementation</i>	<i>Levels of Implementation</i>		
	<i>Beginner level</i>	<i>Intermediate level</i>	<i>Advanced level</i>
<i>1. Setting the criteria</i>	<i>Teacher provides the criteria.</i>	<i>Students select criteria from those proposed.</i>	<i>Students establish the criteria.</i>
<i>2. Teaching students to apply criteria</i>	<i>Providing examples of criteria application.</i>	<i>The teacher describes how the criteria are applied.</i>	<i>The teacher's model of criteria application.</i>
<i>3. Providing feedback following criteria application</i>	<i>Teacher provides feedback.</i>	<i>Feedback is provided by both the teacher and the students.</i>	<i>Students' involvement in arguing their own feedback.</i>
<i>4. Setting objectives and learning strategies</i>	<i>Teacher sets objectives and learning strategies.</i>	<i>Students select objectives and learning strategies.</i>	<i>Students establish objectives and learning strategies.</i>

Theories of self-assessment

The theory of cognitive control focuses on how individuals manage and control cognitive processes to accomplish tasks. Cognitive control refers to those flexible mental processes that allow the dynamic selection of ideas and, correspondingly, actions, in symbiosis with the objectives specific to the context (Kounieher et al., 2009). This theory elucidates the manner in which cognitive resources are directed, coordinated, and adjusted to meet the requirements of different cognitive activities. Cognitive processes are governed by control mechanisms that assist in the selection of relevant information, inhibition of irrelevant information, and adjustment of cognitive strategies based on task requirements. Additionally, the theory of cognitive control also addresses the concept of metacognition. Metacognition involves awareness and understanding of one's cognitive processes and learning capabilities; it encompasses the control and regulation of cognitive processes, such as planning, monitoring, and assessing learning.

In this regard, the theory of cognitive control provides a clear understanding of how students direct their cognitive processes (thinking, attention, memory, etc.) and other cognitive resources to assess their own abilities and acquisitions. Through the lens of this theory, we underline the importance of metacognition in the self-assessment process, meaning that during self-assessment, students must be aware of their own thoughts, feelings, and actions, as well as their efficacy in achieving the proposed objectives. According to research, self-assessment involves the flexible and adaptive allocation of mental resources to evaluate and adjust one's own performance. This process demands metacognitive skills, that is, the awareness and understanding of one's own cognitive processes, actions, and achievements (Miller, 2000). Consequently, self-assessment helps students become more responsible for their own learning and take an active role in managing their cognitive resources.

In a study conducted by Kouneiher et al. (2009), it was demonstrated that self-assessment relies on executive control processes, which allow the dynamic selection of ideas and actions based on objectives and context. Executive control facilitates self-assessment by managing cognitive resources and attention (Diamond, 2013). In the self-assessment process, students direct their attention towards their own ideas and cognitive strategies, and executive control facilitates this process consciously and intentionally.

Executive control processes are essential for monitoring performance and adjusting cognitive strategies based on received feedback. Efficient self-assessment involves using relevant feedback from the learning environment. Thus, the self-assessment process must be dynamic and adaptable, with students using information from feedback to adjust and improve performance and learning. In this context, feedback becomes an essential element of the self-assessment process. According to the theory of cognitive control, the self-assessment process involves metacognitive skills, the use of executive control processes, and the appropriate reception of feedback received from external sources (teacher, peers, etc.). Through the lens of the cognitive control theory, visible learning can be understood as a pedagogical approach that encourages students to be aware and responsible for their own learning, using metacognitive strategies and executive control to achieve progress.

The self-determination theory, initially developed by Edward L. Deci and Richard M. Ryan in 1985, represents an important approach in the psychology of motivation and is successfully applied in the educational context. This theory focuses on satisfying the fundamental psychological needs of the individual for autonomy, competence, and social relatedness, having a significant impact on the learning process.

According to the self-determination theory, people have basic psychological needs that must be satisfied to actively engage in various activities, including learning. These needs are autonomy, competence and social relatedness.

- *Autonomy*, which means the individual's need to have control over their own actions and decisions.

In the context of visible learning, satisfying this need means encouraging students to take an active role in their own learning process, set personal goals, and make decisions regarding learning methods. By encouraging autonomy, students become responsible for their own self-assessment. They become more aware of their own strengths and weaknesses and can make decisions to improve their performance.

- *Competence*, refers to the need to feel competent and capable in performing tasks and objectives.

To support the development of competence in learning, the educational environment must provide appropriate challenges and support for students in overcoming difficulties and improving performance. Visible learning promotes the clear establishment and communication of learning objectives. Thus, for the efficient conduct of self-assessment,

students can be involved in setting their own goals, establishing assessment criteria, which gives them a sense of competence and control over their learning.

- *Social relatedness*, refers to the desire to be connected and accepted by others.

Positive interactions with peers and teachers, as well as constructive feedback, contribute to satisfying this need, having a positive impact on intrinsic motivation. Thus, visible learning can be facilitated through active collaboration and communication between students and teachers. This interaction helps students develop positive interpersonal relationships, feel supported in the self-assessment process, and connected in the learning process.

In the context, we support the idea that self-assessment encourages students to take an active role in the learning process, which contributes to satisfying these psychological needs. Students can choose to plan and organize their own learning process, assess their progress, and identify ways to improve their results.

Self-assessment models

The „self-marking” model. This model is based on self-determination theory and the idea that students can become more aware of their own learning and development through active involvement in the self-assessment process. Within the self-assessment process, students use „a model of correct answers and assessment criteria (and possibly grading sheets) to compare with their own work” (Taras, 2010, p. 202). The criteria are provided by the teacher, and the students only apply them.

For the effective implementation of this self-assessment model, the following conditions are recommended to be taken into account:

- Formulating clear assessment criteria, understandable to the students, and providing examples if necessary. The assessment criteria allow students to correlate their answers with those provided as a model on the assessment sheet.
- Providing constructive feedback from the teacher. It is important for teachers to create an open learning environment and encourage students to be proactive in self-assessing their own learning.
- Encouraging collaboration among students, so they can provide each other with reciprocal feedback. Through positive social interactions, students feel more motivated and develop communication and cooperation skills.

The „sound standard” model. This model complements the self-marking model by providing a representative example for each level of performance for the assessment criteria. The same process as self-marking is used and, therefore, it can be considered a subcategory of this model (Cowan, 2006). This model encourages students to assess their own results by comparing their answers with provided models or reference examples from the teacher. This model requires students to develop (together with the teacher and peers) assessment criteria, to provide feedback based on criteria, and to grade their completed tasks before presenting them to the teacher. Upon submission of their work, students are asked to write the expected grade on a sheet, accompanied by the strengths and weaknesses of the work.

For the effective implementation of this self-assessment model, it is recommended to consider the following conditions:

- Providing representative reference examples for each level of performance aligned with the learning objectives.
- Establishing assessment criteria, which can be provided by teachers or collaboratively developed with students, depending on the proposed objectives.
- Offering reciprocal feedback among students, based on predetermined criteria.

Self-assessment with integrated tutor feedback model. This model requires the integration of feedback from the teacher and peers before the student self-assesses. The teacher and/or peers provide feedback on the activity (written or oral) in relation to predetermined criteria. This model aims for a more complex approach to the self-assessment process, allowing students to benefit from external guidance and feedback to improve their academic performance. „Student self-assessment with integrated tutor feedback is an efficient means of helping students overcome expectations and focus more on their achievements rather than the resources needed to accomplish their task” (Taras, 2003, p. 562).

Feedback can be provided in the form of observations, suggestions, or questions that help students identify the strengths and weaknesses of their work. Based on the feedback, students reflect on the observations and suggestions received, thus they can develop a deeper understanding of their own acquisitions and can identify strategies for improving performance.

For the efficient application of this self-assessment model, it is recommended to take into account the following conditions:

- Communicating the assessment criteria transparently, so that students know exactly what they need to assess.
- Providing examples of constructive feedback. The teacher should provide examples of feedback to guide students in the self-assessment process.
- Allocating sufficient time for self-assessment and feedback. It is necessary to allocate enough time for students to assess their own performance and to give and receive feedback. Only over time can a thorough analysis be made and opportunities for performance improvement be realized.
- Using online technological resources to facilitate self-assessment and feedback provision. Online platforms or digital tools can allow students to record their self-assessments, and the teacher and/or peers to provide feedback.

The learning contract design model. According to this model, self-assessment is understood as a learning contract, in which students make decisions about what, when, and how they will learn. This contract is an agreement between the student and the teacher, in which the assessment objectives, learning strategies, and assessment criteria are established (Taras, 2003). Students are actively involved in developing their own learning objectives, based on personal interests and abilities. They collaborate with the teacher to clearly define what they want to learn, how they will assess progress, and what

the concrete steps will be to achieve these objectives. Students can choose the learning methods and resources that work best for them and can adjust plans based on progress made. During the task completion, students receive feedback from the teacher on the activity's accomplishment.

Thus, the self-assessment process involves constant monitoring of progress and achievement of learning objectives. Students are encouraged to reflect on their own learning process, identify their strengths and weaknesses, and develop strategies to overcome obstacles. This model requires a high level of autonomy from the student and a commitment from the teacher to support this process. Students must have the ability to set their own learning objectives and plan strategies to achieve them. Also, the teacher must be prepared to provide support and guidance throughout this process, as well as monitor progress and provide constructive feedback.

For the efficient application of this self-assessment model, it is recommended to observe the following conditions:

- Maintaining collaboration between the teacher and the student throughout the task completion. It is recommended that the teacher be available to provide guidance, and the students be involved and responsible for achieving their learning objectives.
- Monitoring students' progress and providing optimal feedback. Feedback helps students to self-assess more efficiently and adjust their learning plan.

Based on the theories and models of self-assessment outlined, we highlight the *principles* that guide the process of student self-assessment:

The principle of transparency in assessment emphasizes the importance of clarity and transparency regarding the objectives and assessment criteria for students. This facilitates understanding of what is expected from them and how they can improve results. This principle is consistent with the theory of cognitive control, which highlights the need for a clear understanding of expectations and objectives to direct the self-assessment process efficiently.

The principle of ensuring optimal feedback in self-assessment emphasizes the importance of providing quality and relevant feedback to students, to support them in the self-assessment process and improve their academic performance.

The principle of contextualization suggests that self-assessment is more efficient when learning is integrated into a relevant and authentic context, reflecting how knowledge and skills will be used in real life. The principle of contextualization thus encourages the development of transfer skills and the application of knowledge in various contexts. Contextualized self-assessment allows students to develop complex skills, such as critical analysis, creative thinking, and problem-solving. This is achieved when students assess not only what they know but also how they can apply this knowledge to solve real challenges.

3. Empirical framework of the research

The empirical aspect presented in this article aims to find and analyze students' perceptions of the self-assessment process during courses and seminars, as well as to evaluate the level of implementation of self-assessment in the teaching process. The research questions underlying this study are:

- How do students perceive and describe the self-assessment process during courses and seminars?
- What is the level or degree of implementation of self-assessment in the teaching process?

To address these questions, the research methodology involved the development and validation of research instruments, including the use of a questionnaire and a test. Thus, the applied methodology is quantitative, focusing on obtaining numerical data through standardized instruments. The validation of research instruments was conducted using the Cronbach's Alpha coefficient on a sample of 73 students from the Faculty of Psychology, Educational Sciences, Sociology, and Social Work, State University of Moldova. A simple random sampling method was employed to ensure the representativeness and generalizability of the results. Students were informed about the research instrument validation study and were asked for their consent to participate.

The questionnaire assessing students' opinions regarding the self-assessment process and the test measuring the level of self-assessment implementation in the teaching process were constructed based on the theoretical model proposed by C. Rolheiser for the implementation of self-assessment in education.

The questionnaire assessing students' opinions regarding the self-assessment process consists of 7 questions. These questions evaluate students' perceptions and opinions regarding the self-assessment process, how students perceive their own involvement in the self-assessment process, and the utility of this process in developing their skills. Within the questionnaire, both open-ended and closed-ended questions were included to obtain a comprehensive and detailed understanding of students' perceptions.

The test measuring the level of implementation of self-assessment in the teaching process was designed to assess the extent to which self-assessment is systematically and coherently integrated into courses. The test consists of 12 questions related to various aspects of self-assessment, such as establishing evaluation criteria, teaching students to apply the criteria, providing feedback following the application of criteria, and setting learning objectives and strategies.

Both instruments, the questionnaire and the test, were administered online from March to April 2023 through Google Forms to a sample of 23 students. This was done to collect the necessary data for the analysis and interpretation of perceptions and the level of implementation of self-assessment in the context of visible learning. The representative sample included third-year students specializing in Psychology and Psychopedagogy at the Faculty of Psychology, Educational Sciences, Sociology, and Social Work at the State University of Moldova. Responses were collected electronically, and the data underwent statistical-mathematical analyses for calculating averages and frequencies.

4. Results

Following the applied questionnaire, we obtained results that reflect the students' opinion regarding the self-assessment process.

The *question related to the degree of student involvement in self-assessment* generated the following findings:

- 14% of students do not get involved in the self-assessment process. This may indicate a lack of awareness or understanding of the benefits of self-assessment, or it may suggest that these students face difficulties in self-assessment.
- 30% of students sometimes get involved in self-assessment, especially when teachers request it.
- 26% of students often get involved in self-assessment, being proactive in monitoring their own performance progress. This indicates a deeper understanding of the role of self-assessment for personal development and for improving academic performance.
- 30% of students always get involved in self-assessment, considering it a constant practice in their learning process. This group represents students who have strongly internalized the importance of self-assessment and are developing skills in managing this process.

Therefore, most students either often or always get involved in the self-assessment process. This aspect indicates a positive trend among students to monitor and self-assess their performances.

The *question related to the perception of the effect of self-assessment on the learning process* generated the following findings:

- 9% of students believe that self-assessment does not influence their learning.
- 17% of students argue that self-assessment stimulates the motivation to learn, but to a small extent.
- 22% of students believe that self-assessment motivates them to be more responsible in learning.
- 35% of students state that self-assessment increases confidence and the desire to learn more.
- 17% of students argue that self-assessment develops intrinsic motivation and determination for academic success.

These results demonstrate the diversity of students' perceptions regarding the effects of self-assessment. Most students perceive positively the effects of self-assessment on responsibility, self-confidence, and the desire for continuous learning, on motivation and academic success. A small portion of students believe that self-assessment does not influence learning or has a small influence on motivation; thus, we can suggest that these students do not clearly perceive the benefits of self-assessment or may encounter difficulties in its efficient application.

At the question referring to the level of involvement in setting the criteria and requirements for evaluating one's own performance, we obtained the following results:

- 39% of students receive the assessment criteria set by the teacher. In the case of these students, teachers play a dominant role in setting criteria, and they apply the provided criteria.
- 61% of students collaborate with the teacher to establish the assessment criteria.

Thus, most students mention that they actively participate in establishing the assessment criteria, collaborating with the teacher. This suggests a positive and constructive dynamic during lessons, where students have the opportunity to actively participate in defining the requirements by which they are assessed.

At the question referring to the level of application of the established criteria in self-assessment, we obtained the following results:

- 55% of students state that they receive from teachers concrete examples (e.g., papers, projects, etc.) that were appreciated based on the assessment criteria.
- 43% of students apply the criteria following the description and explanation provided by the teacher.
- 2% of students develop their own model for applying the assessment criteria.

These findings demonstrate that students use various strategies to apply the established criteria in the self-assessment process. Most rely on concrete examples provided by teachers or the descriptions they provide. At the same time, a small percentage of students choose to develop their own models for applying criteria, which implies an independent perspective in the self-assessment process.

At the question referring to the extent to which students provide feedback in the self-assessment process, we obtained the following results:

- 22% of students do not get involved in providing feedback, as it is only provided by the teacher;
- 39% - request feedback from the teacher and colleagues;
- 39% - actively get involved in arguing their own feedback.

Therefore, an equal proportion of students (39%) request feedback and actively get involved in arguing their own feedback. This demonstrates that most students have a proactive approach to self-assessment and are motivated to improve their performances. However, there are 22% of students who rely exclusively on the feedback provided by the teacher. This shows a tendency for students to rely on the teacher's authority for performance validation, which may limit the student's autonomy and self-reflection capacity in the long term.

At the question referring to the students' involvement in setting future learning objectives, we obtained the following results:

- 26% of students follow the objectives and learning strategies proposed by the teacher;
- 35% - select learning objectives from those proposed by the teacher according to their own needs;

- 39% - individually establish objectives and learning strategies.

These results reflect the variety of ways in which students approach the learning process and their degree of autonomy in setting objectives. A significant percentage (39%) indicates the students' tendency to have control over their own training and to actively direct their academic path.

At the *question referring to the measures taken following self-assessment to improve academic performance*, we find that:

- 13% of students do not take measures to improve performance, being dependent on teachers' feedback. These results may indicate either high confidence in the guidance provided by teachers or a lack of initiative or resources in carrying out self-assessment and self-regulation of learning.
- 22% - try to improve performance without asking for help from the teacher and/or colleagues, which reflects a higher degree of independence and confidence in their own self-assessment abilities.
- 23% - request feedback and advice from teachers or colleagues and develop an action plan to improve identified weaknesses, thus combining self-assessment with external feedback, which may lead to a deeper understanding of one's own capabilities.
- 32% - identify aspects requiring improvement based on self-assessment, and request feedback and advice from teachers or colleagues when necessary, meaning that students have self-assessment and metacognitive capabilities in terms of progress improvement.

In conclusion, students acknowledge the value of self-assessment as a tool to improve their own learning. There is a clear trend towards autonomy and proactivity, with a majority of students actively participating in the self-assessment, feedback, and objective setting processes. However, support and guidance from teachers remain essential for most students in the self-assessment process.

Based on the applied test, we obtained the following results that reflect the level of self-assessment implementation in the didactic process, as well as the degree of student involvement in self-assessment process :

- 22% of students have low involvement in the self-assessment process.

Their results suggest that there is a lack of clarity regarding the evaluation criteria or a difficulty in applying them correctly. The feedback provided after self-assessment may be limited or inefficient. Students have difficulties in setting their learning objectives and strategies based on self-assessment.

- 45% of students have moderate involvement in the self-assessment process.

They demonstrate a clearer understanding of the evaluation criteria and begin to apply them more adequately. The feedback received after self-assessment may be more relevant, but may still require improvement. Students set their learning objectives and strategies, but not to a very advanced extent.

- 33% of students demonstrate high involvement in the self-assessment process.

They have a clear understanding and efficiently apply the evaluation criteria. The feedback provided and received is relevant, detailed, and significantly contributes to the improvement of academic performance. Students set their learning objectives and strategies with the help of self-assessment, constantly adjusting them to achieve their learning goals.

Thus, the results of the applied test reflect various levels of student involvement in the self-assessment process. This highlights the fact that consistent guidance and direction from teaching staff is necessary for involving students in the self-assessment process, so that students develop a clear understanding of the evaluation criteria and apply them appropriately, provide constructive feedback in the context of self-assessment, which will lead to the efficient establishment of learning objectives and strategies.

5. Conclusions

Student involvement in the self-assessment process is essential for developing proactive behavior of students towards their own learning process. Through self-assessment, students not only become more aware of their own knowledge, abilities, strengths, and weaknesses, but they also take an active role in monitoring and regulating their own learning. When students identify their strengths and weaknesses, they become capable of setting goals and establishing learning strategies. Analyzing the data collected based on the questionnaire and test, a moderate tendency of student involvement in the self-assessment process can be observed. This suggests that, although a significant percentage of the student sample recognizes the value and importance of self-assessment, there are still barriers in the process of implementing it at an advanced level. Obviously, for students to reach their full potential within self-assessment, both teaching staff and students need to collaborate together. In the context of visible learning, self-assessment facilitates the connection between what students know and what they need to learn further. This approach encourages better awareness and accountability, placing students at the center of the educational process and promoting thorough learning.

The conclusions of this research confirm and support the theories of cognitive control and self-determination, emphasizing the importance of self-assessment in the development of metacognitive skills and the promotion of visible learning. The results indicate that the implementation of self-assessment in the visible learning process can foster a culture of responsibility and encourage students to explore their own learning, identify strengths and weaknesses, and develop metacognitive processes, in line with the concept developed by J. Hattie.

In the context of visible learning, it is recommended for teaching staff:

- Providing assessment criteria. This facilitates a clear understanding of expectations and allows students to assess their own results against these criteria.
- Involving students in the development of assessment criteria. Thus, the criteria become more relevant and closer to the experiences and perspectives of the students.

- Providing timely and objective feedback during the self-assessment process. This feedback can offer guidance for students regarding their strengths and aspects that require improvement.

The conclusions have significant practical implications for teachers and practitioners in the field of education, highlighting how visible learning strategies can be enhanced through the integration of self-assessment in the instructional process. Despite the valuable contributions made, the research does not exhaust the subject. There is an ongoing need for further studies to explore in more detail the variability in the implementation of self-assessment in various academic contexts and to investigate the effectiveness of specific strategies.

While the presented study makes significant contributions, it is accompanied by several limitations. The specific context of a particular faculty may limit the applicability of the findings in other academic environments. Although the validity of the research instruments has been ensured, it may not fully cover the diversity of concepts associated with self-assessment. The acknowledged limitations underscore the importance of caution in generalizing the results and emphasize the need to adapt methods to account for the contextual and methodological specificities identified in this research.

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