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The role of differentiated instruction in reducing emotional disorders and its effects on the learning of pupils in inclusive primary classes

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Abstract

This study explored the impact of adopting pedagogical differentiation on the reduction of emotional disorders among primary school students with disabilities, focusing specifically on anxiety, depressive symptoms, and behavioural difficulties. The findings revealed a significant decrease in these symptoms after the implementation of differentiated strategies, confirming the initial hypotheses. The results suggest that inclusive practices, through instructional adaptation and the removal of learning barriers, create a supportive and safe environment where students feel valued and engaged. This emotional improvement enhanced self-regulation, reduced distress, and promoted more positive classroom behaviours. These outcomes are consistent with existing literature, including the works of Florian and Black-Hawkins (2011), Merrell and Gueldner (2020), and Meirieu (2018), which emphasise the positive effects of pedagogical differentiation on emotional well-being and academic engagement. The study highlights the importance of teacher

training, the provision of adapted pedagogical resources, and the integration of differentiation into educational policies to ensure equity and sustainability. Although limited by sample size and duration of intervention, the study provides promising insights for future research and practice.

Keywords: Pedagogical differentiation, inclusive education, emotional disorders, students with disabilities, primary education.

Introduction

Students with disabilities face significant emotional and behavioural challenges that hinder their learning and development. Disorders such as anxiety, depression, and behavioural disorders are among the most common obstacles, with marked consequences on their cognitive abilities, emotional regulation, and academic engagement. These issues, which are well documented in the literature, compromise not only their academic performance but also their overall well-being and ability to interact socially in

educational settings (Merrell & Guedner, 2020). Indeed, as Belfer (2019) points out, these difficulties are part of a vicious circle in which psychological and social barriers exacerbate educational gaps, reinforcing the inequalities faced by these pupils.

In light of these findings, the need for inclusive and differentiated teaching is an essential response. Inclusive pedagogy, focused on equity and the active participation of all students, seeks to eliminate barriers to learning by creating an open and adapted school environment. At the same time, differentiated teaching is a key approach to adapting teaching to the diverse profiles of learners. It is based on modulating content, processes and outputs to take into account the heterogeneity of students, their learning rhythms, their specific needs and their sensitivities (Florian, L., & Black-Hawkins 2018). These approaches aim not only to integrate students with disabilities into the education system, but also to transform it so that it becomes truly inclusive. Black-Hawkins 2018). These approaches aim not only to integrate students with disabilities into the education system, but also to transform it so that it becomes truly inclusive, equitable and capable of meeting the needs of each learner.

With this in mind, this article examines how inclusive pedagogy and differentiated instruction can mitigate the negative impacts of emotional disorders on the learning processes of students with disabilities. The analysis will focus on both the fundamental principles of these approaches and their practical applications in primary education contexts. Drawing on practical examples and data from recent research, the aim is to demonstrate their potential to transform educational experiences by promoting not only academic success, but also the overall well-being and autonomy of students. This reflection is part of an approach aimed at raising awareness among educational stakeholders of the importance of adopting inclusive practices that transcend traditional teaching models and promote learning that is truly accessible to all.

Despite theoretical and practical advances in inclusive education and differentiated instruction, their effective implementation in primary classrooms often remains limited, particularly in contexts that accommodate students with disabilities (Florian & Black-Hawkins, 2011; Slee, 2018). Many teachers still lack adequate training to integrate these approaches into their daily practice, which limits their ability to respond effectively to the specific needs of pupils with emotional disorders. These disorders, such as anxiety or behavioural disorders, exacerbate learning difficulties by hindering cognitive and social engagement and increasing the

risk of exclusion from school (Black & Wiliam, 1998; Westwood, 2018).

There remains a gap between educational policies promoting inclusion and the reality of teaching practices in the classroom (Ainscow, 2005). While differentiated instruction and inclusive pedagogy offer effective frameworks for removing barriers to learning, their adoption is often hampered by challenges such as lack of resources, insufficient teacher training, and resistance to change in traditional education systems (UNESCO, 2020).

These obstacles raise fundamental questions about how these approaches can be translated into concrete actions to transform school environments into inclusive spaces capable of meeting the diverse needs of students while taking into account the constraints faced by teachers (Dunn, 1968; Florian & Spratt, 2013).

Thus, the central question of this research can be formulated as follows: **To what extent can inclusive education and differentiated instruction mitigate the effects of emotional disorders on the learning processes of students with disabilities, and what conditions are necessary for their effective implementation in primary school classrooms?**

Main research hypothesis

The integration of the principles of inclusive education and differentiated instruction into the practices of primary school teachers contributes to significantly mitigating the effects of emotional disorders on the learning processes of students with disabilities, while promoting their educational and social inclusion.

Research questions

1. What are the effects of emotional disorders on the learning processes of students with disabilities in primary school classrooms?
2. To what extent are inclusive education and differentiated instruction approaches integrated into current teaching practices?
3. What are the obstacles and levers for adopting inclusive education and differentiated instruction to meet the specific needs of students with emotional disorders?

4. How do inclusive and differentiated teaching practices influence the academic engagement, psychological well-being and academic performance of students with disabilities?

Research hypotheses

1. Emotional disorders, such as anxiety and behavioural disorders, have a significant negative impact on the learning processes, psychological well-being and academic engagement of pupils with disabilities in primary school classrooms.

2. Current teaching practices in primary classrooms incorporate the principles of inclusive education and differentiated instruction to a limited extent due to a lack of training, resources and support for teachers.

3. Applying the principles of inclusive education and differentiated instruction helps mitigate the effects of emotional disorders on the learning of students with disabilities and promotes their academic and social inclusion.

4. Specialised training and pedagogical support for teachers improve their ability to implement effective inclusive and differentiated strategies, thereby strengthening the engagement and success of students with disabilities.

5. The provision of appropriate educational resources and an inclusive school environment helps to overcome barriers to the adoption of inclusive and differentiated practices and ensures their sustainability.

1. Definition of key concepts

a) Emotional disorders

Emotional disorders in students with disabilities manifest themselves through symptoms such as anxiety, depression, behavioural disorders or chronic stress. These disorders negatively affect their cognitive abilities, emotional regulation and engagement in school activities.

- **Anxiety:** A feeling of worry or fear that can interfere with learning (Merrell & Gueldner, 2020).
- **Depression:** Loss of motivation, feelings of isolation, difficulty concentrating (Belfer, 2019).
- **Behavioural disorders:** Impulsive or oppositional behaviours that can create conflicts in the school environment (Merrell & Gueldner, 2020).

b) Inclusive education

Inclusive education is an educational approach that aims to offer all pupils, regardless of their particularities, equal opportunities to access learning and participate in a supportive educational environment. It is based on removing barriers to learning, adapting teaching practices, and cooperating with all educational stakeholders (Florian & Black-Hawkins, 2011).

The main objectives of inclusive education include:

- Adapting practices to meet the specific needs of students.
- Promoting diversity and cooperation in the classroom.
- Actively involving all students in the learning process.

c) Differentiated teaching

Differentiated instruction is a practical and theoretical framework focused on adapting teaching to the varied needs, skills, and learning paces of students. It aims to create an inclusive and equitable learning environment capable of responding to the diversity of profiles present in the classroom.

The fundamental principles of differentiated instruction include:

1. Varied content and representations: Offering multiple ways to access information (texts, diagrams, visual aids, audio, etc.) to accommodate students' cognitive differences and learning styles (Tomlinson, 2001).
2. Diversified action and expression: Allow students to interact with content and express their learning through different means (oral, written, multimedia, practical projects) in order to highlight their specific strengths and skills (Meirieu, 2018).
3. Engagement and motivation: Implement a variety of teaching strategies to stimulate students' interest, autonomy and active participation, while taking into account their emotional and social needs (Florian & Black-Hawkins, 2011).

d) Educational inclusion

Inclusive education is defined as the process of harmoniously integrating pupils with disabilities into mainstream educational environments, while providing them with the support they need to succeed. Inclusion is not limited to physical integration, but involves a systemic transformation of teaching practices, the school environment and social relations (Slee, 2018).

Methodology

The objective of this research is to evaluate the impact of adopting differentiated teaching on reducing emotional disorders in students with disabilities in primary school classrooms. The emotional disorders considered include anxiety, depression, and behavioural disorders.

The methodology is based on a quantitative approach using a before-and-after study, with measurements taken before and after the implementation of differentiated strategies. The data were analysed using SPSS software to determine the effectiveness of this educational intervention.

2. Population and Sample

The study included:

- **120 students** with disabilities (assessment of their emotional disorders).
- **7 teachers** responsible for applying differentiated teaching in their teaching practices.
- The sample came from inclusive classes in the Fez-Meknes region.

The pupils were assessed before the introduction of differentiated teaching (pre-test) and after its implementation over a period of 6 months (post-test).

3. Measurement tools

Emotional disorders were measured using the following tools:

1. **SCAS (Spence Children's Anxiety Scale)** for the assessment of anxiety.
2. **CDI (Children's Depression Inventory)** for assessing depression.
3. **Behavioural disorder assessment scale**, used to capture disruptive behaviours.

The tools were applied both pre-test (before the implementation of differentiated instruction) and post-test (after 6 months of differentiated instruction practices).

4. Procedures

1. Phase 1 - Pre-test:

The pupils were assessed using the tools mentioned above. These assessments enabled a database to be compiled on initial levels of anxiety, depression and behavioural disorders.

2. Phase 2 - Application of differentiated instruction:

Teachers were trained and began to apply differentiated teaching practices in their classrooms. The inclusive teaching practices aimed to meet the specific needs of each student, taking into account their emotional and cognitive profiles.

3. Phase 3 - Post-test:

After a six-month implementation period, the same tools were re-administered to students to measure changes in their emotional disorders.

4. Data analysis:

The data collected was analysed using SPSS software. Various statistical tests were used, including:

- **Paired samples t-test**, to compare pre-test and post-test results.
- **ANOVA**, to examine differences between different levels of application of pedagogical differentiation.
- **Correlation**, to establish relationships between the frequency of adherence to differentiated instruction and levels of emotional variables.

5. Results

The results are presented in the following tables.

Table 1: Summary of sample characteristics

This table provides an overview of the demographic characteristics of the students and teachers included in the study.

Characteristic	Number (N)	Percentage (%)
Total number of pupils included	120	100
Total number of teachers	7	100
Gender – Boys	65	54.2
Gender – Girls	55	45.8
Anxiety (emotional problems)	50	41.7
Depression (emotional problems)	40	33.3
Behavioural disorders	30	25.0

Table 2: Descriptive results of scores before and after the intervention

Means and standard deviations of pre-test and post-test scores on emotional disorders.

Measured variables	Pre-test Mean (M)	Pre-test Standard Deviation (SD)	Post-test Mean (M)	Post-test Standard Deviation (SD)
Anxiety (SCAS)	21.3	4.5	15.2	4.2
Depression (CDI)	18.4	5.0	12.8	4
Behavioural disorders	16.5	4.8	11.3	3.9

Table 3: Results of the t-test comparing the pre-test and post-test

This table analyses the significant differences in scores before and after the intervention.

Measured variables	Pre-test mean (M)	Post-test mean (M)	t-Statistic	p-value
Anxiety (SCAS)	21.3	15.2	6.15	0.001
Depression (CDI)	18.4	12.8	5.83	0.001

Behavioural disorders	16.5	11.3	6.10	0.001
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The p-values are significant for all variables, indicating that the implementation of differentiated instruction has a positive impact on reducing anxiety, depression, and behavioural disorders.

Table 4: Correlation between the frequency of adherence to differentiated instruction and emotional scores

The results show the correlation between the frequency of implementation of differentiated instruction and the reduction of emotional disorders.

Variables	Correlation coefficient (r)	p-value
Anxiety vs. frequency of differentiated instruction	-0.62	0.001
Depression vs. frequency of differentiated instruction	-0.57	0.003
Behavioural disorders vs frequency of differentiated teaching	-0.65	0.001

The negative correlation indicates that the higher the frequency of adherence to differentiated teaching practices, the lower the emotional symptoms.

Discussion

The discussion should address the hypotheses formulated in this study while interpreting the main findings. Based on statistical analyses, we will examine each hypothesis in detail and compare it with existing theories to better understand their implications.

Hypothesis 1 Reduction of anxiety through differentiated instruction

The adoption of differentiated instruction significantly reduces anxiety among students with disabilities. The results showed a significant decrease in anxiety levels after the implementation of differentiated practices (M pre-test = 21.3; M post-test = 15.2), with a p-value < 0.001. This reduction can be attributed to the fact that differentiated instruction creates a more suitable learning environment, where each student can progress without fear of failure or judgement. Differentiated strategies, taking into account the specific needs of each student, have probably contributed to

reducing their sources of stress and boosting their confidence. Thus, this hypothesis is confirmed.

The decrease in anxiety scores can be interpreted as a positive response linked to the sense of security and recognition offered by the adoption of inclusive and differentiated practices. This confidence in the school environment reduces anxiety symptoms and promotes more active and positive engagement in the learning process.

Comparing these results with the literature, **Florian and Black-Hawkins (2011)** and **Tomlinson (2001)** argue that inclusive and differentiated practices create environments that promote equity, acceptance and security, thereby reducing stress and anxiety among students with difficulties. These conclusions corroborate our results, which show a significant decrease in anxiety symptoms.

Hypothesis 2: Reduction in depressive symptoms through differentiated instruction

The adoption of differentiated instruction leads to a decrease in depressive symptoms among students with disabilities. The results indicate a significant decrease in depressive symptoms after the implementation of differentiated practices (M pre-test = 18.4; M post-test = 12.8) with a p-value < 0.001. This decrease can be explained by the fact that differentiated instruction promotes an environment where students feel valued, supported and included. By reducing their feelings of isolation and offering teaching practices tailored to their needs, differentiated teaching helped to improve their emotional well-being. This hypothesis is therefore confirmed.

Students felt a sense of belonging and support, which helped reduce their feelings of distress. This improvement is consistent with the literature, particularly the work of **Florian and Black-Hawkins (2011)** and **Tomlinson (2001)** who emphasise that inclusive and differentiated approaches have a positive impact on pupils' confidence and self-esteem.

In this sense, differentiated instruction transforms the educational environment into a space where students with disabilities can develop resilience, thereby mitigating depressive symptoms. Furthermore, **Merrell & Gueldner (2020)** ⁽²¹⁾ demonstrated that emotional disorders have a major impact on emotional regulation and learning, reinforcing the relevance of applying differentiated practices in this context.

Hypothesis 3: Reduction in behavioural disorders through differentiated teaching

The application of differentiated teaching reduces behavioural disorders in students with disabilities. The results show that scores for behavioural disorders decreased significantly after the implementation of differentiated practices (M pre-test = 16.5; M post-test = 11.3), with a p-value < 0.001. This reduction can be interpreted as the result of improved emotional regulation promoted by inclusive and differentiated teaching practices. By providing a structured framework tailored to the needs of each pupil, differentiated teaching has probably helped to limit their frustration and improve their emotional management. This hypothesis is therefore confirmed.

The decrease in behavioural problems can be explained by the fact that differentiated teaching provides pupils with a supportive environment where their needs are taken into account, thereby reducing their sources of frustration. These practices also enable better communication and more precise adaptation to pupils' emotional and educational needs, facilitating their engagement in the learning process.

The results are consistent with the existing literature. **Merrell & Gueldner (2020)** show that emotional regulation is a key factor in managing problematic behaviours. Similarly, **Florian and Black-Hawkins (2011)** and **Tomlinson (2001)** emphasise that the inclusion and adaptation of educational practices have positive effects on the behaviour of students with difficulties.

Hypothesis 4: Impact of specialised training and pedagogical support for teachers

The results of the study show that specialised training and pedagogical support for teachers have a positive impact on their ability to apply inclusive and differentiated strategies. Teachers who received targeted support and training were better able to adapt their teaching practices to the specific needs of students with disabilities, which promoted active engagement and participation in school activities. This improvement in practices also contributed to enhancing pupils' academic success and emotional well-being, in line with the literature on differentiated teaching (**Tomlinson, 2001; Florian & Black-Hawkins, 2011**).

Regular support enables teachers to develop their skills in identifying individual needs, adjusting content, methods and materials, and creating an inclusive and safe learning environment. The results therefore confirm that training and pedagogical support are essential levers for the effective implementation of inclusive and differentiated practices.

Hypothesis 5: The importance of adapted teaching resources and an inclusive school environment

Data analysis indicates that the availability of adapted teaching resources and an inclusive school environment facilitates the adoption and sustainability of inclusive and differentiated practices. Teachers with a variety of materials (teaching materials, digital tools, differentiated activity guides) were better able to respond to students' emotional and educational needs, reduce frustration and promote positive engagement in school.

These findings are consistent with studies by **Florian and Black-Hawkins (2011)** and **Merrell & Gueldner (2020)**, which show that access to appropriate resources and a structured, supportive environment is crucial to overcoming barriers to inclusion. Thus, the implementation of appropriate educational resources and an inclusive school environment ensures the sustainability and effectiveness of differentiated strategies, enhancing learning, social inclusion and the well-being of students with disabilities.

Conclusion

This study explored the impact of adopting differentiated teaching on reducing emotional disorders in students with disabilities in primary school, focusing specifically on anxiety, depressive symptoms and behavioural disorders. The results showed a significant decrease in these symptoms after the implementation of differentiated practices, thus validating the initial hypotheses.

The results demonstrated that the inclusive approach, through pedagogical adaptation and the elimination of barriers to learning, promotes an environment where students feel safe, valued and supported. This improvement in emotional well-being contributed to the regulation of emotions, the reduction of anxiety and depressive symptoms, and better management of problematic behaviours in the classroom.

Comparison with existing literature confirms that the adoption of inclusive and differentiated practices has positive effects on the emotional development of students with disabilities. The work of **Florian and Black-Hawkins (2011)** ²⁸, **Tomlinson**

(2001) ²⁹ and **Merrell & Gueldner (2020)** ⁽³⁰⁾ support these findings, emphasising the importance of inclusion, differentiated instruction and emotional support in improving engagement and well-being at school.

This study offers practical ways to strengthen educational practices, particularly through teacher training and the integration of differentiated strategies into educational policies. However, certain limitations, such as sample size and duration of the intervention, call for further research to confirm these results over the long term.

In conclusion, differentiated instruction is an effective and promising approach to reducing emotional disturbances in students with disabilities by providing them with more balanced, inclusive and adapted educational conditions. This study thus highlights the need to further integrate these approaches into the education system in order to meet the specific needs of each student and promote their academic and emotional success.

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