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Long Abstract:

**Impactul unui program de intervenție multidimensională asupra
performanțelor școlare și a stării de bine subiective în rândul elevilor din clasa
a IX-a cu nevoi educaționale speciale integrați
în școli secundare de masă din Israel**

**The Impact of a Multidimensional Intervention Program
on the Academic Aspects and Subjective Well-Being
among ninth-grade Students with Special Educational Needs
in Mainstream Secondary Schools in Israel**

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Key Concepts

Academic achievement	The extent to which students successfully attain academic outcomes in educational settings, often measured by grades and standardized scores.
Academic Motivation	The psychological processes that initiate, direct, and sustain students' engagement and persistence.
Academic self-efficacy	Students' belief in their ability to successfully perform academic tasks and achieve educational goals.
Adolescence	A developmental stage between childhood and adulthood characterized by rapid biological, cognitive, psychological, emotional, and social changes.
Inclusion	An educational approach that promotes equitable access, participation, belonging, and success for all students, regardless of their abilities or special educational needs, within mainstream educational settings.
Special education class	A specialized educational setting within mainstream schools that provides individualized instruction and appropriate support for students with special educational needs.
Subjective well-being	Individuals' cognitive and emotional evaluation of their quality of life, including life satisfaction, the presence of positive emotions, and the relative absence of negative emotions.

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Glossary of Abbreviations

DST – Dynamic Systems Theory

IMEC- Integrative Model of Effortful Control

MSS – Mainstream School

MSSS – Mainstream Secondary School

SDT – Self-Determination Theory

SE – Special Education

SEN – Special Educational Needs

SES – Special Education School

SWB – Subjective Well-Being

Having special educational needs is not a choice,
but choosing to do our best is.

ABSTRACT

As part of the global effort for inclusion, students with special educational needs (SEN) attend special education (SE) classes within mainstream schools (MSS), often facing academic and psychological challenges. The current mixed-method research examined the impact of the MEPAS intervention program, comprising psychomotor, willpower, and emotional development activities, on the academic achievement, academic motivation, academic self-efficacy, and subjective well-being (SWB) of 131 ninth-grade students with SEN in Israel (68 in the intervention group; 63 in the control). Academic achievement, autonomous and controlled academic motivation, academic self-efficacy, and SWB were measured quantitatively at pre-, mid-, and post-intervention, along with qualitative interviews with students and parents. Findings revealed significant improvements in academic achievement, autonomous academic motivation, academic self-efficacy, and SWB among students in the intervention group compared with the control group. No differences were found across different disability types, comparing learning disabilities with behavioral-emotional, mental, physical, borderline intellectual functioning, and autism spectrum disorder. Qualitative findings supported the quantitative findings and highlighted positive changes in academic, emotional, and social aspects of learning at school and in daily life. These findings suggest that a multidimensional, structured intervention such as MEPAS can contribute to both academic and well-being outcomes among adolescents with SEN.

Keywords: academic achievement, academic motivation, academic self-efficacy, adolescents, inclusion, special education class, subjective well-being

INTRODUCTION

Background and Aims

Worldwide, including in Israel, increasing numbers of students with special educational needs (SEN) attend special education (SE) classes within mainstream schools (MSS) as part of inclusion. Despite these efforts, adolescents with SEN often demonstrate lower academic achievement and subjective well-being (SWB) than their peers without SEN, and research focusing on this population remains limited.

The current research examined the impact of the psychoMotor and Emotional development Promoting Academic aspects and Subjective well-being (MEPAS) intervention program on ninth-grade students with SEN attending SE classes within mainstream secondary schools (MSSS). It examined its contribution to academic achievement in Hebrew language and mathematics, autonomous and controlled academic motivation, academic self-efficacy, and SWB, as well as students' and parents' perceptions of its impact on school and everyday life.

Theoretical Foundation and Literature Review

The theoretical foundation was based on two complementary pillars: the first comprised Self-Determination Theory (SDT; Ryan & Deci, 2000), the Integrative Model of Effortful Control (IMEC; André et al, 2019), Dynamic Systems Theory (DST; Thelen & Smith, 1994), and Social-Cognitive Self-Efficacy Theory (Bandura, 1977), which explain motivational, self-regulatory, cognitive, and emotional processes underlying learning and adaptation. The second comprised Positive Psychology (Seligman & Csikszentmihalyi, 2000), Positive Education, and Positive Pedagogy, emphasizing strengths, well-being, and supportive educational environments.

The literature review examined academic achievement, academic motivation, academic self-efficacy, and SWB among adolescents with SEN in inclusive educational settings and the rationale for structured interventions. It highlighted lower academic achievement and SWB, the importance

of autonomous academic motivation and academic self-efficacy, the reciprocal relationship between academic achievement and SWB during adolescence, the value of students' and parents' perspectives, and the potential contribution of structured interventions.

The methodology

The current research employed a mixed-methods design comprising four complementary studies: mixed-methods expert validation of the MEPAS intervention program; quantitative analyses of standardized tests and questionnaires administered at three time points; and qualitative thematic and linguistic analyses of students' and parents' perceptions.

Dissertation Outline

This dissertation comprises four parts: a theoretical foundation, methodology, four empirical studies, and the general discussion.

PART I - THEORETICAL FOUNDATION

CHAPTER 1: THEORETICAL BACKGROUND

1.1 Self-Determination Theory (SDT; Ryan and Deci, 2000)

Self-Determination Theory (SDT) explains the quality of motivation and self-regulation (Ryan & Deci, 2000, 2017). In educational settings, SDT distinguishes between autonomous (intrinsic motivation and identified regulation) and controlled motivation (external and introjected regulation). According to Basic Psychological Needs Theory, supporting students' needs for autonomy, competence, and relatedness promotes autonomous motivation, whereas frustration of these needs is associated with controlled motivation and lower well-being (Ryan & Deci, 2000, 2017, 2020). These principles are relevant for adolescents with SEN, who benefit from need-supportive educational environments (Hornstra et al., 2023; Ryan & Deci, 2017).

1.2 An Integrative Model of Effortful Control (André, Audiffren, and Baumeister, 2019)

The Integrative Model of Effortful Control (IMEC) describes effortful control as a process that manages attention, behavior, and emotions during challenging mental and physical tasks. Repeated psychomotor and willpower activities strengthen effortful control and promote persistence, self-regulation, and engagement, even in the face of fatigue (Audiffren & André, 2019; Audiffren et al., 2022). These ideas are especially important for adolescents with SEN, who often face challenges with attention, behavioral and emotional regulation, and persistence.

1.3 The Dynamic Systems Theory (DST; Thelen and Smith, 1994)

The Dynamic Systems Theory (DST) views motor development as a non-linear process emerging from interaction among the individual, task, and environment (Thelen & Smith, 1994). Through exploration, repeated practice, and brain plasticity, motor-cognitive experiences promote self-organization and adaptive development (Jabès & Nelson, 2014; Spencer et al., 2006, 2011).

These processes may support learning and development among adolescents with SEN.

1.4 Social Cognitive Self-Efficacy Theory (Bandura, 1977)

Social Cognitive Self-Efficacy Theory defines self-efficacy as individuals' beliefs in their ability to perform specific tasks, influencing effort, persistence, and performance (Bandura, 1977, 1986, 1997). Academic self-efficacy develops through mastery experiences, social learning, and encouragement, and is associated with greater engagement and persistence (Bandura, 1986; Pajares, 1996). Students with SEN often report lower academic self-efficacy, highlighting the importance of supportive educational experiences.

1.5 Positive Psychology Theory, Positive Education, Positive Pedagogy

(Seligman and Csikszentmihalyi, 2000)

Positive Psychology promotes flourishing and well-being through positive emotions, strengths, resilience, and supportive relationships (Seligman, 2011; Seligman & Csikszentmihalyi, 2000). Positive Education and Positive Pedagogy apply these principles in school by fostering academic achievement and well-being through strengths-based teaching, supportive classroom climate, autonomy-supportive instruction, and opportunities for success, particularly for students with SEN (Gaitas et al., 2025; Seligman et al., 2009; Zhang et al., 2022).

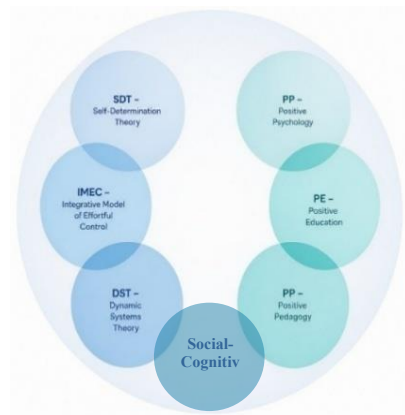
1.6 Summary of the Theoretical Background

The theoretical background integrated complementary perspectives on motivation, effortful control, self-efficacy, SWB, and positive educational environments. Together, these theories provide a conceptual framework for understanding learning, development, and adaptation among adolescents with special educational needs (SEN).

Figure 1 illustrates the theoretical framework underlying the current research.

Figure 1

Interrelations among theoretical components



The next chapter reviews relevant literature to identify gaps in knowledge about adolescents with SEN in SE classes at MSSS and provides background for the current research.

CHAPTER 2: INCLUSIVE EDUCATION FOR ADOLESCENTS: AN ANALYSIS OF SCHOOL OUTCOMES

2.1 Special Educational Needs

The term special educational needs (SEN) refers to a heterogeneous group of students who require additional educational support to participate effectively in school (OECD, 2020; UNESCO, 2017, 2020). Students with SEN may experience various types of disabilities that affect their educational participation (UNESCO, 2015, 2020).

Over the past few decades, educational systems worldwide have increasingly adopted inclusive education, with more students with SEN attending MSS while receiving support tailored to their individual needs (OECD, 2020; UNESCO, 2020). In Israel, students with SEN attend SE schools (SES), SE classes within MSS, or inclusive mainstream classes, continuing the trend toward inclusion (Israel Central Bureau of Statistics, 2022; Waissblai, 2023).

2.1.1 Students' and Parents' Voices in Special Education

Recent research increasingly recognizes the importance of including the perspectives of students with SEN and their parents to better understand their educational experiences and improve educational practices (McNally et al., 2025; Woodcock, 2025). Students provide unique insights into their school experiences (Lindsay et al., 2023; McNally et al., 2025; Woodcock, 2025), whereas parents offer complementary perspectives on academic engagement, emotional well-being, and everyday functioning (Baker et al., 2021; Mann et al., 2024). Together, these perspectives provide a more comprehensive understanding of adolescents with SEN.

2.2 Inclusive Education

Inclusive education has become an increasingly central goal for educational systems worldwide, aiming to give students with SEN equal opportunities to participate, learn, and develop

within mainstream educational settings (UNESCO, 1994, 2020). Beyond placement, inclusion highlights meaningful participation, engagement, social belonging, and access to appropriate support (Lindsay et al., 2023; UNESCO, 2022). Successful inclusion requires adequate professional support, resources, and professional training, yet challenges persist internationally (Kauffman & Hornby, 2020) and in Israel (Blass, 2022; Liplevski et al., 2024).

2.3 Adolescence

Adolescence is a developmental period characterized by rapid changes, increasing academic and social demands, and a need for autonomy, competence, and relatedness (Ryan & Deci, 2020; Vansteenkiste et al., 2020). During this period, academic motivation, academic self-efficacy, and SWB often decline, making learning and adaptation more challenging (Lei et al., 2022; Macakova & Wood, 2022; Sainio et al., 2021). These challenges may be greater among adolescents with SEN who often demonstrate lower academic achievement, academic motivation, academic self-efficacy, and SWB (Goldan et al., 2022; Van Herwegen et al., 2024).

2.3.1 Daily Functioning of Adolescents with Special Educational Needs

Adolescence brings increasing demands for autonomy, self-management, emotional regulation, and independent functioning in daily life (American Psychological Association, 2002). These demands may be greater for adolescents with SEN, who often need support with daily routines at school and beyond (Baker et al., 2021; Lei et al., 2021).

2.4 Academic Achievement

Academic achievement reflects students' learning and educational progress and is influenced by cognitive, motivational, emotional, and environmental factors (Burns et al., 2020; OECD, 2022). Adolescents with SEN consistently demonstrate lower academic achievement than peers without SEN. Supportive educational environments and appropriate educational support may improve academic outcomes (Bondebjerg et al., 2023; Goldan et al., 2022).

2.5 Academic Motivation

Academic motivation drives students' engagement in learning and is central to academic achievement (Koenka, 2020). Students with SEN often demonstrate lower autonomous motivation and greater reliance on controlled motivation. Supportive educational environments may promote academic motivation (Loopers et al., 2023; Martin, 2021).

2.6 Academic Self-Efficacy

Academic self-efficacy refers to students' beliefs in their ability to succeed academically (Bandura, 1993). Students with SEN often report lower academic self-efficacy, whereas supportive educational experiences and meaningful feedback strengthened positive academic self-beliefs (Margolis & McCabe, 2004; Solberg et al., 2012; Schlichtenhorst, 2026).

2.7 Psychomotor Activities

Psychomotor activities integrate motor, cognitive, and emotional processes. Repeated practice may strengthen attention, effortful control, self-regulation, and adaptive functioning, contributing to academic functioning and well-being (André et al., 2019; de Greeff et al., 2018).

2.8 Subjective Well-Being

Subjective well-being (SWB) reflects positive emotions and life satisfaction and is associated with academic engagement and achievement (Howard et al., 2021; Seligman, 2011). Adolescents with SEN in MSSS generally report lower SWB than peers without SEN and these in SES, whereas supportive educational environments are associated with higher SWB (Blanck et al., 2025; Goldan et al., 2022; Pozas et al., 2023; Rathmann et al., 2018).

2.9 Emotional Development Activities

Mandala coloring and free drawing have been associated with reduced anxiety, improved

emotional regulation, and higher SWB, with some evidence of improved attention and school engagement (Carsley & Heath, 2018, 2020; Jakobsson Støre & Jakobsson, 2022).

2.10 Summary of Literature Review

The literature reviewed in this dissertation showed that adolescents with SEN in inclusive educational settings often demonstrate lower academic achievement, autonomous motivation, academic self-efficacy, and SWB than peers. It also highlighted the reciprocal relationship between academic achievement and SWB, as well as the potential of structured interventions to promote academic and psychological outcomes.

2.11 Problem Statement

Despite ongoing efforts to promote inclusion in education, students in mainstream schools continue to face academic, motivational, and social challenges. Adolescents with SEN who attend special education (SE) classes within MSSS often continue to experience academic, motivational, and socio-emotional challenges. They often show lower academic achievement, autonomous academic motivation, academic self-efficacy, and SWB than their peers without SEN, despite receiving educational support.

2.12 Gap in Knowledge

While extensive research has examined the inclusion of students with SEN in MSS, including comparisons with peers without SEN and peers with SEN in SES, less evidence is available regarding adolescents attending SE classes in MSSS. Evidence from structured, validated interventions for this population remains limited. Therefore, further research is needed to identify effective ways to promote academic achievement, autonomous academic motivation, academic self-efficacy, and SWB among adolescents attending SE classes within MSSS.

The next part presents the methodology and design of the current research.

PART II - THE APPLICATIVE SCIENTIFIC INVESTIGATIONS

CHAPTER 3: RESEARCH COORDINATES AND DESIGN

3.1 Purpose of the Current Research

Evaluating the impact of an intervention program consisting of psychomotor, willpower, and emotional development activities among ninth-grade students with special educational needs (SEN) who attend special education (SE) classes in mainstream Secondary schools (MSSS) in Israel on their academic achievement, academic autonomous motivation, academic controlled motivation, academic self-efficacy, and subjective well-being (SWB).

3.2 The Research Aims

1. Evaluation of the contribution of the participation of ninth-grade students with SEN attending SE classes within MSSS in the psychoMotor and Emotional development Promoting Academic aspects and Subjective well-being (MEPAS) intervention program, consisting of psychomotor, willpower, and emotional development activities, to their academic achievement in Hebrew language and mathematics, academic autonomous motivation, academic self-efficacy, and SWB.
2. Examination of the relationships between academic achievement in Hebrew language and mathematics with academic autonomous motivation, academic controlled motivation, academic self-efficacy, and SWB among ninth-grade students with SEN attending SE classes at MSSS.
3. Examination of the implications of the MEPAS intervention program, consisting of psychomotor, willpower, and emotional development activities, on academic functioning and learning at school, as perceived by the students.

4. Examination of the implications of the MEPAS intervention program on daily life outside of school among the participants, as perceived by their parents.

3.3 The Research Questions

1. What are the relationships between academic achievement with academic autonomous motivation, academic controlled motivation, academic self-efficacy, and SWB among ninth-grade students with SEN who attend SE classes at MSSS?

Questions 2-5 refer to the possible changes of ninth-grade students with SEN, who attend SE classes at MSSS, following participation in the MEPAS intervention program, consisting of psychomotor, willpower, and emotional development activities, in their:

2. Academic achievement in Hebrew language and mathematics?
3. Academic autonomous, and controlled motivation?
4. Academic self-efficacy?
5. Subjective well-being?
6. What are the implications of participating in the intervention program, consisting of psychomotor, willpower, and emotional development activities on school and learning, as perceived by ninth-grade students with SEN who attend SE classes at MSSS and participated in the MEPAS intervention program?
7. What are the implications of participating in the MEPAS intervention program, consisting of psychomotor, willpower, and emotional development activities on participants' daily lives outside of school, as perceived by the parents?

3.4 The Research Hypotheses

The hypotheses of the current research were:

H1. Academic achievement will be positively correlated with academic autonomous motivation, academic controlled motivation, academic self-efficacy, and SWB among participants from ninth-grade students with SEN in SE classes at MSSS.

H2. Academic achievement in Hebrew and mathematics among participants will increase following participation in the MEPAS intervention program.

H3. Academic autonomous motivation among participants will increase following participation in the MEPAS intervention program. As for their academic controlled motivation, no change will occur following participation in the MEPAS intervention.

H4. Academic self-efficacy among participants will increase following participation in the MEPAS intervention program.

H5. Subjective well-being among participants will increase following participation in the MEPAS intervention program.

H6. There will be a positive attitude toward school and learning, and the behaviors of the students in the intervention program.

H7. Parents will report a positive impact of the intervention program on their child's daily life behaviors outside of school.

3.5 The Research Variables

Independent Variable:

The MEPAS intervention program consists of activities for psychomotor, willpower, and emotional development.

Dependent Variables:

- Academic achievement in Hebrew language and mathematics;
- Academic autonomous motivation, academic controlled motivation;
- Academic self-efficacy;
- Subjective well-being (SWB);
- Behavior and attitudes in school life (as perceived by students);
- Students' behaviors in daily life (as perceived by their parents).

3.6 Mixed-Methods Design

A mixed-methods design, integrating quantitative and qualitative approaches, was employed in the current research. The research was grounded in a pragmatic research paradigm.

The quantitative component involved numerical validation of the intervention program (study 1) and assessed the effects of the MEPAS intervention program on achievement in Hebrew language and mathematics, academic motivation, academic self-efficacy, and SWB among ninth-grade students with SEN attending SE classes in MSSS (study 2). The qualitative component included an analysis grid with open-ended questions (study 1), semi-structured in-depth interviews with the students (study 3), and their parents (study 4) to explore subjective perceptions of the intervention program's impact on school learning and daily life functioning.

3.7 The Four Studies of the Current Research

The current research consisted of four studies. Table 1 presents a summary of research design and methodologies, including aims, participants, methods, tools, and data analysis.

Table 1

Summary of the studies of current research

<i>Research Study</i>	<i>Research Aims of the Study</i>	<i>Participants</i>	<i>Research Method and Tools</i>	<i>Data analysis</i>
1	Validation of the MEPAS intervention program.	6 experts from the fields of: special education, psychomotor, art.	Method: Survey. Tools: An analysis grid.	Quantitative, qualitative
2	A. correlational phase Examination of the relationships between academic achievement with academic motivation, academic self-efficacy, and subjective well-being.	131 students from both intervention and control groups. All students have SEN and attend ninth-grade SE classes at MSSS.	Method: A survey Tool: An analysis grid.	Pre-intervention Quantitative
Divided into 2 phases	B. Experimental phase 1. Examination of the impact of participating in MEPAS on academic achievement in Hebrew language and mathematics. 2. Examination of the impact of participating in MEPAS on academic autonomous and controlled motivation. 3. Examination of the impact of participating in MEPAS on academic self-efficacy. 4. Examination of the impact of participating in MEPAS on subjective well-being.	131 students: 68 intervention group, 63 control group. All students have SEN and attend ninth-grade SE classes at MSSS.	Method: Survey. Tools: Tests: 1. Standard tests in the Hebrew language. 2. Standard test in mathematics (Israel Ministry of Education). Questionnaires: (back translation) 1. Academic motivation questionnaire – the SRQ-A for students with LD (Deci et al, 1992). 2. Academic self-efficacy questionnaire - Brief Questionnaire for Measuring Academic, Social, Emotional Self-Efficacy in Youths (Muris, 2001). 3. Subjective well-being questionnaire – SWLS (Diener et al., 1985), Hebrew version (Anaby et al., 2010).	Pre-, mid-, and post-intervention Quantitative
3	Examination of the implications of the MEPAS on participants' attitudes toward school and learning as perceived by the students.	15 students from the intervention group: 6 females, 9 males.	Method: Interview Tool: A semi-structured interview guide.	Post-Intervention Qualitative
4	Examination of the implications of the MEPAS on participants' daily life outside of school, as perceived by participants' parents.	10 parents of students in the intervention group: 7 females, 3 males.	Method: Interview Tool: A semi-structured interview guide.	Post-intervention Qualitative

3.8 Validity, Reliability, Triangulation, and Generalization

Validity

Validity was established through expert evaluation of the MEPAS intervention program, confirming its relevance and appropriateness for students with SEN. The content validity of the structured questionnaires was established through expert review, ensuring they measure the intended constructs—academic motivation, academic self-efficacy, and SWB.

Reliability

Reliability of the questionnaires was assessed using Cronbach's Alpha to evaluate their internal consistency. Standardized data collection procedures further ensured measurement reliability across all participants.

Triangulation

Triangulation was achieved through a mixed-methods design that integrated quantitative and qualitative data. Repeated quantitative measurements across three time points provided objective evidence of change over time, whereas interviews with students and parents offered complementary insights into participants' experiences and their parents' perceptions of the intervention.

Generalization

Generalization was approached cautiously because of the specific population of students with SEN. Although the findings may apply to similar populations, external validity may be limited by sample characteristics and the intervention context. Nevertheless, the mixed-methods design provides a basis for future adaptation and evaluation of the program in other settings.

3.9 Ethical Considerations

Research involving adolescents with SEN required particular ethical attention because they constitute a vulnerable population. It ensured accessibility, protected participants' dignity, privacy,

well-being, and confidentiality, and minimized potential harm (American Psychological Association, 2022; Leko et al., 2021).

Authorization from the Head of Research Regulation at the Chief Scientist Office of the Ministry of Education, following a preliminary telephone consultation and completion of the required approval process. Parents of students from both groups received informed consent forms through the homeroom teachers, requesting permission for their child's participation in the research and in the interviews. Parents and students were informed about how identifying information would be handled and that audio recordings of the interviews were prohibited.

Each student was assigned a numerical code at the first assessment to connect data across measurement points while keeping anonymity. Interview responses were documented in writing, all identifying information was removed, and pseudonyms were used throughout the process.

The next part presents the four empirical studies of the current research, including methodology, findings, discussion, conclusions, and educational implications.

PART III - THE STUDIES OF THE CURRENT RESEARCH

CHAPTER 4: STUDY 1- EXPERT VALIDATION OF THE MEPAS INTERVENTION PROGRAM

4.1 Aim

The aim of this study was to validate the MEPAS intervention program, containing psychomotor, willpower, and emotional development activities, using the judgment of six experts to the best possible extent before applying it in classes.

4.2 Question

Does the MEPAS intervention program correspond to the aims of the program as a whole, and regarding its components?

4.3 The MEPAS intervention program

The intervention program developed in this research is called **MEPAS**–psycho**M**otor, willpower, and **E**motional development activities for **P**romoting **A**cademic aspects and **S**ubjective well-being among students with SEN in ninth-grade SE classes at MSSS.

4.3.1 Rationale of the Intervention Program

The MEPAS intervention program was designed as a multidimensional intervention integrating psychomotor, effortful control (willpower), and emotional development activities. It was grounded in Self-Determination Theory, the Integrative Model of Effortful Control, Dynamic Systems Theory, Social-Cognitive Self-Efficacy Theory, and Positive Psychology, which collectively suggest that academic and emotional development is promoted through the interaction of motivational, cognitive, motor, emotional, and environmental processes.

The psychomotor and willpower activities were designed to strengthen effortful control, self-regulation, persistence, and engagement through structured practice, whereas the emotional development activities were intended to foster positive emotions, reduce anxiety, and promote SWB (André et al., 2019; Audiffren et al., 2022; Carsley & Heath, 2018; Carr et al., 2021).

Together, these complementary components were expected to promote academic achievement, academic autonomous motivation, academic self-efficacy, and SWB among adolescents with SEN attending SE classes at MSSS.

4.3.2 Aims of the Intervention Program

Participation in the intervention will affect positively:

academic achievement, autonomous academic motivation, academic self-efficacy, and SWB among ninth-grade students with SEN attending SE classes at MSSS.

4.3.3 The Program's Activities

The psychomotor section included gross motor coordination, fine motor coordination, eye-hand graphomotor coordination, and static willpower exercises.

The emotional development part included mandala coloring and free-drawing activities.

4.3.4 Procedure

The intervention program was integrated into the school curriculum and implemented four times a week for 15 minutes per session in the classroom: two sessions focused on psychomotor activities and two on emotional development activities. The program was delivered by the homeroom teachers and lasted 10 weeks, beginning in January 2025.

4.3.5 Uniqueness of the current intervention program

The MEPAS intervention program integrated two types of non-academic activities that were designed to promote academic achievement, autonomous academic motivation, academic self-efficacy, and SWB among adolescents attending SE classes in MSSS. To the best of the researcher's knowledge, no comparable multidimensional intervention program among this population has been reported in the literature.

The program was developed in light of growing evidence regarding the reciprocal relationship between academic achievement and SWB (Bortes et al., 2021; Goldberg et al., 2022; Morinaj & Hascher, 2022; White, M. A., 2020), and was grounded in the principles of Positive Psychology, Positive Education, and Positive Pedagogy.

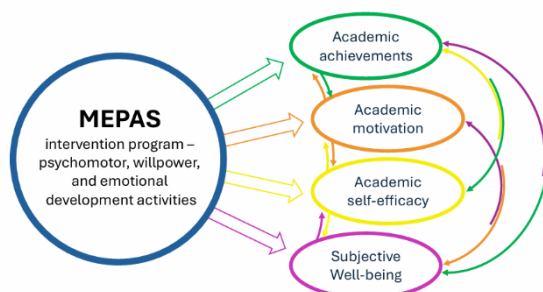
The intervention program was also informed by empirical evidence, including students' and parents' perspectives, and was designed to allow future refinement, adaptation, and dissemination.

It requires minimal financial resources, uses readily available materials, and can be implemented by school staff following brief training.

Figure 2 presents the conceptual framework of the MEPAS intervention program. The arrows from the intervention program to the dependent variables represent the expected effect of the program on academic achievement, academic motivation, academic self-efficacy, and SWB. The arrows among the dependent variables represent their theoretical interrelationships.

Figure 2

Conceptual framework of the MEPAS intervention program



4.4 Participants

Six experts from relevant fields who provided feedback on the program from different perspectives: psychomotor, arts, and special education, including academic researchers and schoolteachers. All of them are experienced in special education.

4.5 Method and Tool

Method: Survey examining the expert validation.

Tool: An analysis grid: a questionnaire for experts, realized by the 6 experts.

The questionnaire assessed the content validity of the MEPAS intervention program by evaluating the alignment of each activity with the program's aims and the program as a whole.

Activities were rated on a Likert scale from 1(not suitable at all) to 5 (very suitable). The questionnaire was reviewed and approved by a methodological advisor before administration.

For each activity, experts evaluated its clarity, relevance to the intended domain, and were invited to provide open comments. They also evaluated the overall program and offered suggestions to improve its components while preserving its aims.

4.6 Procedure

Each expert received the program's rationale, aims, detailed procedures, activity descriptions, timetable, and a video demonstration. The experts were asked to complete the analysis grid, while the researcher was available to answer questions.

4.7 Data analysis

The mixed-methods analysis provided a comprehensive evaluation of the program. Quantitative data were analyzed using descriptive statistics (means and SDs). Qualitative comments were analyzed thematically for the program as a whole and each activity separately.

4.8 Ethics

No personal data, such as the experts' names or institutional affiliations, was provided. The details presented include professional field, years of experience, and academic degree.

4.9 Findings of Expert Validation (Study 1)

The findings of study 1 of the research include quantitative and qualitative analyses.

4.9.1 Quantitative Findings

The quantitative findings showed a strong agreement that the MEPAS intervention program and its components aligned with their intended aim. Eight of nine activities received high ratings, with mean scores ranging from **4.417** (graphomotor hand-eye coordination) to **4.833** (fine motor coordination) out of 5. The lowest standard deviation was 0.804, and the highest was 0.837.

The overall program received a mean validity of 4.5 (SD=0.837), indicating strong expert agreement regarding its relevance and appropriateness.

4.9.2 Qualitative Findings

Experts evaluated each activity regarding its clarity, relevance to the intended domain, and content validity, and provided open comments. They also evaluated the program as a whole and suggested modifications where appropriate.

Overall, the experts expressed positive views of the program, describing it as *suitable, clear, interesting, and innovative*. One concern (“*might be boring*”) was raised, and two modifications were suggested and incorporated into the final version of the program.

4.10 Discussion of Study 1 Findings

The findings demonstrate strong agreement regarding the relevance, coherence, and appropriateness of the MEPAS intervention program and its components for adolescents with SEN. The expert recommendations further strengthened the program through two minor modifications without changing its theoretical framework, rationale, or intended outcomes.

4.11 Conclusions and Implications of Study 1

Conclusions

Examination of the quantitative and qualitative findings demonstrated strong agreement regarding the relevance and appropriateness of the MEPAS intervention program and its components. Two minor modifications refined the program without changing its theoretical framework or core principles.

Overall, expert validation supported the content validity and practical suitability of the MEPAS intervention program for implementation among ninth-grade students with SEN attending SE classes at MSSS.

Implications

The findings highlight the importance in using expert validation in developing educational intervention programs and provide a validated program for future implementation and research.

CHAPTER 5: STUDY 2 - EVALUATING THE IMPACT OF THE MEPAS INTERVENTION PROGRAM ON THE PARTICIPANTS

5.1 Aims

1. Examine the connections between academic achievement with academic autonomous and controlled motivation, academic self-efficacy, and SWB.

2. Examine the impact of the MEPAS program, consisting of psychomotor, willpower, and emotional development activities, on academic achievement in Hebrew language and mathematics, academic autonomous and controlled motivation, academic self-efficacy, and SWB among students with SEN attending ninth-grade SE classes at MSSS.

5.2 Questions

1. What are the relationships between academic achievement with academic autonomous motivation, academic controlled motivation, academic self-efficacy, and subjective well-being among ninth-grade students with SEN who attend SE classes at MSSS?

Questions 2 to 5 examined changes in ninth-grade students with SEN who attend SE classes at MSSS following participation in the intervention program, focusing on their academic achievement in Hebrew language and mathematics, academic, autonomous, and controlled motivation, academic self-efficacy, and subjective well-being, respectively.

5.3 Hypotheses

The first hypothesis posited that positive relationships will be found between academic achievement with academic autonomous motivation, academic self-efficacy, and subjective well-being among ninth-grade students with SEN who attend SE classes at MSSS.

Hypotheses 2 to 5 posited that significant improvements will be found among ninth-grade students in SE classes in MSSS in different locations in Israel who will participate in the MEPAS

intervention program, which contains psychomotor, willpower, and emotional development activities, in their academic achievement, academic autonomous motivation, academic self-efficacy, and subjective well-being. As for controlled motivation, no change is hypothesized.

5.4 Participants

Participants included two groups of ninth-grade students from SE classes at MSSS, selected purposively as full classes. SE classes in MSS in Israel consist of students with various disabilities, including autism (Israel Ministry of Education, 2022). The students of both intervention and control groups did not differ in their background characteristics.

Sample size

A priori power analysis using G*Power indicated a minimum sample of 34 participants ($f = .25$, $\alpha = .05$, power = .80). The current research included 131 participants (68 intervention, 63 control), substantially exceeding this requirement and providing the minimum required and offering excellent statistical power.

5.5 Method and Tools

Method: Survey through structured tools.

Tools: Five tools were used: two tests and three questionnaires. All the tools are publicly available and accessible online.

Tool 1 – Standard tests of Hebrew language skills (Israel Ministry of Education, Supervision of Hebrew language teaching, 2022, 2023, 2024). Measuring linguistic skills, scores ranged from 0 to 100. Sources for the tests are presented in the following links:

<https://drive.google.com/file/d/1JM17aE984kji8SX51P84pKk445Z7ZKKj/view?usp=sharing>

<https://drive.google.com/file/d/1tmMr4AAtbN0AEj2msEJADrXVrKqHZk-Z/view?usp=sharing>

https://drive.google.com/file/d/1RMrxXPM8RG66CWGleUGzvdBqRy_Cn23N/view?usp=sharing

https://drive.google.com/file/d/1Mxh4OnSAIgH4nVs5qBhBw_JK5D8IVNRF/view?usp=sharing

Tool 2 - Standard national tests of Mathematics (Israel Ministry of Education, Pedagogical Secretariat, Sciences Division, Supervision of Mathematics Teaching, 2012, 2017, 2019, 2024, 2025). Measuring mathematics skills, scores ranged from 0 to 100. Sources for the tests are presented in the following links:

Equations: [Equations](#) question no. 1 [Equations](#) question no. 13

[Percentages](#) questions 6,12,13

[Geometry](#) From p. 6, questions 1,4,5,6.

[Graphs](#) questions 1-6.

[Statistics and Probability](#) From p. 84, questions 1,3,4,5,6,7,8,12.

[Math literacy](#) (Warehouse, p. 6, bicycle, p. 15)

Tool 3 - Academic motivation questionnaire

SRQ-A, version for students with learning disabilities- LD (Deci et al., 1992)

The LD questionnaire comprises 17 items, divided into three sections, on a 4-point Likert scale. Reliability coefficient reported in literature for the SRQ-A is 0.75–0.88, according to Cronbach's alpha. **In the current research, Cronbach's alpha reliability coefficients were 0.86 for autonomous motivation and 0.77 for controlled motivation**, indicating high reliability.

Tool 4 - Academic self-efficacy questionnaire

Measuring Self-Efficacy in Youth (Muris, 2001). The academic self-efficacy section includes 8 items on a 5-point Likert scale. The reliability coefficient reported in the literature for academic self-efficacy was 0.88, according to Cronbach's alpha (Muris, 2001). **In the current research, Cronbach's alpha reliability coefficient was 0.87**, indicating high reliability.

Tool 5 – Subjective Well-Being Questionnaire

The Satisfaction With Life Scale, SWLS (Diener et al., 1985), Hebrew version (Anaby et al., 2010). It contains 5 items on a 7-point Likert scale. Reliability coefficients reported in the

literature are 0.87 (Diener, 1985) and 0.88 (Anaby et al., 2010) for the Hebrew version. **In the current research, Cronbach's alpha was 0.91**, indicating very high reliability.

5.6 Procedure

Prior to the process in schools, the questionnaires were approved via back-translation.

Based on agreements with schools, classes were assigned to either the intervention or the control group. Parents signed informed consent forms after receiving information about the research. The MEPAS intervention program was delivered solely to the intervention group in the classroom, four times a week for 10 weeks. It included twice-weekly psychomotor and willpower activities, as well as twice-weekly mandala coloring and free drawing activities. At 5 and 10 weeks into the program, the same questionnaires were administered and collected, along with scores from standard national tests in Hebrew language and mathematics, from both groups.

5.7 Data analysis

Data were analyzed quantitatively by assessing questionnaire reliability (Cronbach's Alpha), examining correlations between academic achievement and psychological variables, and testing the research hypotheses.

The hypotheses were examined using a two-way ANOVA with group and time as independent variables and academic achievement (Hebrew language and mathematics), autonomous and controlled academic motivation, academic self-efficacy, and SWB as the dependent variables. Significant interactions were followed by Bonferroni posteriori comparisons within each group across the three measurements.

5.8 Ethics

As stated in the introduction, ethical requirements were strictly followed throughout the implementation of the intervention program.

5.9 Findings of Evaluating the Impact of the MEPAS Intervention Program on the Participants (Study 2)

5.9.1 Findings of the Correlational Phase

The first hypothesis stated that academic achievement will be positively correlated with academic autonomous motivation, academic self-efficacy, and SWB among the participants.

Pearson correlation coefficients computed at pre-intervention measurement (T1) showed significant positive correlations between academic achievement (Hebrew language and mathematics) and academic (autonomous and controlled) motivation, academic self-efficacy, and SWB. All correlations were of medium magnitude, and none were significant between controlled motivation and academic achievement. **The findings supported the first hypothesis.**

5.9.2 Findings of the Experimental Phase

To analyze changes in academic achievement (Hebrew language and mathematics), autonomous and controlled academic motivation, academic self-efficacy, and SWB following the intervention, a 3×2 repeated-measures ANOVA was conducted: time (T1, T2, T3) and group (Intervention vs. Control) as the independent variables and scores as the dependent variables.

5.9.2.1 Academic Achievement

The second hypothesis stated that participants' academic achievement in Hebrew language and mathematics will improve following participation in the MEPAS intervention.

Scores in the Hebrew Language

The ANOVA yielded a significant interaction effect ($F(2,258) = 19.00, p < .001$). Bonferroni posteriori multiple comparisons ($p = .05$). showed a significant increase from T1 and T2 to T3 ($T1 = T2 < T3$) in the intervention group. Means (SDs) were 70.60 (17.74), 73.00 (16.44), 75.24 (13.72), respectively. In contrast, the control group showed a significant decrease from T1 and T2 to T3 ($T1 = T2 > T3$): 71.65 (25.20), 68.63 (23.10), 65.48 (25.43), respectively.

Scores in Mathematics

The ANOVA yielded a significant interaction effect ($F(2,258) = 25.68, p < .001$). Bonferroni posteriori multiple comparisons ($p = .05$) showed a significant increase from T1 and T2 to T3 ($T1 = T2 < T3$) in the intervention group. Means (SDs) were 68.76 (23.27), 70.78 (22.20), and 77.68 (16.30), respectively. In contrast, the control group showed a significant decrease from T1 to T2 and T3 ($T1 > T2, T3$): 69.27 (24.4.3), 64.48 (25.38), and 62.46 (25.60), respectively.

The second hypothesis was confirmed.

5.9.2.2 Academic Motivation

Autonomous and controlled academic motivation were measured separately. The third hypothesis stated that participants' academic autonomous motivation will increase following participation in the MEPAS intervention. For controlled motivation, no change was expected following the intervention.

Academic Autonomous Motivation

The ANOVA yielded a significant interaction effect ($F(2,258) = 73.98, p < .001$). Bonferroni posteriori multiple comparisons ($p = .05$) showed a significant increase across the three time points ($T1 < T2 < T3$) in the intervention group. Means (SDs) were 2.48 (0.69), 2.65 (0.68), and 3.00 (0.5), respectively. In contrast, the control group showed a significant decrease from T1 and T2 to T3 ($T1 = T2 > T3$): 2.63 (0.77), 2.62 (0.95), and 2.42 (0.91), respectively.

Academic Controlled Motivation

The ANOVA yielded no significant interaction effect ($F(2,258) = 2.49, p = 0.09$).

The third hypothesis was confirmed: academic autonomous motivation increased significantly, whereas controlled motivation did not change.

5.9.2.3 Academic Self-Efficacy

The fourth hypothesis stated that the participants' academic self-efficacy will increase following participation in the MEPAS intervention.

The ANOVA yielded a significant interaction effect ($F(2,258) = 116.05, p < .001$). Bonferroni posteriori multiple comparisons ($p = .05$) showed a significant increase from T1 and T2 to T3 ($T1 = T2 < T3$) in the intervention group. Means (SDs) were 3.23 (0.63), 3.44 (0.66), and 3.78 (0.56), respectively. In contrast, the control group showed a significant decrease across all three measurements ($T1 > T2 > T3$): 3.36 (1.12), 3.23 (1.14), and 2.96 (1.05), respectively.

The fourth hypothesis was confirmed.

5.9.2.4 Subjective Well-Being

The fifth hypothesis stated that the participants' SWB will increase following participation in the MEPAS intervention.

The ANOVA yielded a significant interaction effect ($F(2,258) = 25.43, p < .001$). Bonferroni posteriori multiple comparisons ($p = .05$) showed a significant increase from T2 to T3 ($T1 = T2 < T3$) in the intervention group. Means (SDs) were 4.54 (1.22), 4.52 (1.20), and 5.21 (0.98), respectively. In contrast, a significant decrease was found in the control group from T2 to T3 ($T1 = T2 > T3$): 4.39 (1.66), 4.55 (1.59), and 4.15 (1.33), respectively.

The fifth hypothesis was confirmed.

5.9.2.5 Effect of Disability Types

To examine whether the intervention effects differed by disability type, participants in the intervention group were classified as having learning disabilities (LD; $n=45$) or other disability ($n=23$). A series of 2×2 repeated-measures ANOVAs was conducted, with disability type and time as independent variables and academic achievement, autonomous and controlled academic motivation, academic self-efficacy, and SWB as dependent variables.

Findings showed significant improvements over time in all variables except controlled motivation. No significant interactions were found between time and disability type, indicating that the intervention was similarly effective for students with various types of disabilities.

5.10 Discussion of the Evaluating the Impact of the MEPAS Intervention Program on the Participants

Study 2 provided the statistical foundation of the current research's purpose and examined the impact of participation in the MEPAS intervention on academic achievement, academic motivation, academic self-efficacy, and SWB among ninth-grade students with SEN attending SE classes within MSSS. The preliminary correlational analysis demonstrated significant associations between academic achievement with academic autonomous motivation, academic self-efficacy, and SWB, supporting the study's conceptual framework.

The intervention findings supported all research hypotheses. Compared to the control group, participants in the intervention group showed significant improvements in academic achievement, autonomous academic motivation, academic self-efficacy, and SWB. Controlled motivation didn't change as expected. The intervention effects were similar across different disability types, suggesting that the program may benefit students with various SEN.

These findings align with previous research on academic aspects (André et al., 2019; Audiffren et al., 2022; Loopers et al., 2023) and on SWB (Carsley & Heath, 2018).

5.11 Conclusions of Study 2

1. The correlational findings supported the conceptual framework of the research regarding the choice of variables by demonstrating significant associations between academic achievement and academic autonomous motivation, self-efficacy, and SWB.

2. Participation in the MEPAS intervention improved academic achievement, autonomous motivation, self-efficacy, and SWB, whereas controlled motivation didn't change as expected.

3. The intervention effects did not differ by disability type.

4. Together, the findings indicate that integrating psychomotor, effortful control, and emotional development activities may contribute to both academic and SWB outcomes among ninth-grade students with SEN attending SE classes in MSSS.

5.12 Implications of Study 2

The findings support the implementation of MEPAS intervention program among ninth-grade students with SEN attending SE classes at MSSS across different disability types.

CHAPTER 6: STUDY 3 – A QUALITATIVE EXAMINATION OF STUDENTS' PERCEPTION OF SCHOOL AND LEARNING FOLLOWING PARTICIPATION IN MEPAS

6.1 Aim

Explore participants' perceptions of their attitudes toward school and learning.

6.2 Question

What are the implications of participating in the intervention program, consisting of psychomotor, willpower, and emotional development activities on school and learning, as perceived by the participants in the MEPAS intervention program?

6.3 Participants

15 students from the intervention group with varied disabilities.

6.4 Method and Tool

Method: Qualitative methodology, focused on the phenomenological approach.

Tool: An in-depth semi-structured interview guide focused on the students' perceptions, based on eleven open-ended questions.

6.5 Procedure

Before the interviews were conducted, the questions were reviewed and approved by four special education professionals. After completing the program and data collection, the researcher conducted semi-structured interviews with students in the intervention group. The interviews were held at school, lasted 10-15 minutes, and were documented in writing.

6.6 Data Analysis

The qualitative data were analyzed through two complementary phases. First, a thematic analysis identified the main themes emerging from the interviews. Second, a linguistic analysis examined how students expressed their experiences through evaluative language.

6.7 Ethics

Because the students' statements were documented in writing and later appeared in the dissertation, it was particularly important to communicate properly with the students. The researcher explained to the students that she would write down their statements. To maintain their anonymity, all identifying details were removed, and pseudonyms were used.

6.8 Findings of Students' perceptions of their attitudes toward school and learning (study 3)

The qualitative findings were based on 15 semi-structured interviews with students who participated in the MEPAS intervention program. Thematic and linguistic analyses examined students' experiences and perceptions of the intervention.

Table 2 presents a summary of the themes of study 3.

Table 2*Summary of the Themes of Study 3*

<i>Theme</i>	<i>Sub theme</i>
Academic achievement	Academic success Engagement in school Present and future academic attitudes
Academic motivation	Academic autonomous motivation Academic controlled motivation Extended motivation to non-academic areas
Academic self-efficacy	Personal academic self-efficacy Self-efficacy as a student at school Personal efficacy and resilience in non-academic areas
Subjective well-being	Emotional balance and reduction of negative emotions Increase in self-regulation Increase in self-regulation
Metacognition	Acceptance of learning processes Monitoring learning processes Noticing and evaluation of improvement Strategy use and adaptation Self-belief about challenges, effort, and ability
Social domain	Belonging and inclusion Student-teacher relationship Class climate
Evaluation of the MEPAS intervention	General enjoyment and novelty of the program as a whole Importance of specific components of the program Color symbolism to evaluate the program Perceived relevance to daily school life Universal applicability and recommendation <u>Negative statements:</u> Physical difficulty or discomfort Task complexity or cognitive fatigue Boredom Frustration, emotional dissatisfaction, and other negative feelings

The qualitative findings supported the quantitative findings. Students described improvements in academic achievement, academic motivation, academic self-efficacy, and SWB: “My scores got better, more in mathematics,” – Tal, male, LD; “*The harder I tried, the better I succeeded,*” – Effi, male, LD; “*Now I feel it is a bit easier to cope with hard things, in mathematics for instance, I succeed in trying harder than before*” – Tami, female, LD; “*The program helped me...in life, I feel happy and relaxed,*” – Arin, female, LD; “*I feel less anxiety in class and in general life.*” – Ziv, male, LD. Students also described greater self-regulation and transfer of learning beyond school: “*I also have noticed that when I color... I don’t make the noises that I usually make in class,*” – John, male, behavior disorders; “*I come to school almost every day; it*

wasn't like this,” – Avi, male, LD; *“I took the motivation beyond school; I started working a few times a week.”* – Adi, female, LD. The linguistic analysis complemented these findings by highlighting frequent expressions of improvement, effort, confidence, self-regulation, and positive emotions, reinforcing the thematic analysis: *succeed, better, calmness, positive.*

6.8.1 Additional Qualitative Analyses

6.8.1.1 Metacognition

Although not predefined, metacognition emerged as an additional theme. Students described monitoring their learning, recognizing improvement, adapting strategies, and developing stronger beliefs about effort and coping: *“I remember a specific day on which I succeeded in doing the loops”* – Tal, male, LD; *“The limb coordination was hard at the beginning and got better...”* Tim, male, Border intellectual functioning; *“... were complicated, so I made breaks, but kept on coloring”* – Vera, female, Visual impairment. The linguistic analysis reinforced these findings through frequent expressions such as *progress, remember, try, succeed, better, easier.*

6.8.1.2 Social Domain

The social domain also emerged as an additional theme. Students described greater belonging, improved relationships with teachers, and a more positive classroom climate: *“I remember the teacher was happy...better with the willpower exercise”* – Moti, male, ASD; *“We did willpower exercise all the class together, and it was fun.”* - Tim, male, Borderline Intellectual Functioning; *“The atmosphere in the class is more pleasant, I feel that students are more open now,”* – Tal, male, LD; *“it [the program] can contribute to a positive climate in class.”* – Shay, male, LD. The linguistic analysis highlighted frequent expressions such as *support, help, pleasant, open, together.*

6.8.1.3 Evaluation of the MEPAS Intervention Program

Students evaluated the MEPAS intervention program very positively while suggesting several practical improvements: “...*they should be gradual, some easy and some difficult.*” – Noa, female, behavioral disorder. For a few students, some activities were difficult or boring: “*Some of the mandalas were complicated*” – Shani, female, LD, but all of them described the program as enjoyable, meaningful, and beneficial: “*I recommend activating the program with younger students but also with older students and with adult people as well – it is very important that the students in high school will develop more motivation to cope with things at school and in life.*” – Vera, female, Visual impairment. The linguistic analysis highlighted frequent positive expressions such as *willpower, climate, chance, improve, refreshing, creative, didn’t give up.*

6.9 Discussion of Students' Perceptions of their attitude toward school and learning (Study 3)

Study 3 expanded the quantitative findings by exploring students’ perceptions of participation in the MEPAS intervention program. Overall, students described the program as a positive and meaningful experience that contributed to their academic functioning and SWB. Their perceptions were consistent with the quantitative findings reported in study 2.

Students referred to improvements in academic achievement, autonomous academic motivation, academic self-efficacy, and SWB. They also reported greater persistence, self-regulation, confidence, and transfer of these changes beyond school.

Additional themes, including metacognition and the social domain, provided a unique insight into the intervention process. Students described monitoring their learning, being aware of their progress, adapting strategies, developing a sense of belonging, and experiencing a more positive classroom climate. Together, these findings help explain how students perceived the changes observed following participation in the MEPAS intervention program.

6.10 Conclusions of Study 3

1. The qualitative findings indicated that students found the MEPAS intervention program meaningful across academic, motivational, emotional, and social domains.

2. Students' reflections went beyond the predefined variables by emphasizing metacognition, self-regulation, belonging, class climate, and transferring self-regulation to daily life, offering insights into the processes behind the qualitative findings.

3. Students strongly supported the MEPAS intervention program, recommended expanding its implementation, and suggested several practical improvements.

6.11 Implications of Study 3

The findings support implementation of the MEPAS intervention program among ninth-grade students with SEN attending SE classes within MSSS. Students' recommendations also support refining the program and considering its implementation in other educational settings.

CHAPTER 7: STUDY 4 - EXAMINATION OF PARENTS' PERCEPTIONS ON THE CONTRIBUTION OF THE MEPAS INTERVENTION PROGRAM TO DAILY LIFE

7.1 Aim

Learn parents' perspectives on the possible effects of the intervention program students daily lives.

7.2 Question

What are the implications of participating in the intervention program, which included

psychomotor, willpower, and emotional development activities, on students with SEN's daily lives outside of school in ninth-grade SE classes at MSSS?

7.3 Participants

Ten parents of students who completed the MEPAS intervention program and the questionnaires. The parents, including three males and seven females, were from various locations. The parents were randomly selected from all parents of students in the intervention group who were willing to participate in the interview. P3 and P7 are parents of the same student.

7.4 Methods and Tool

Method: An in-depth semi-structured interview in the phenomenological approach.

In the phenomenological approach, the researcher explores the lived experiences of some individuals who shared a phenomenon and integrates what they experienced and how they experienced it in order to be able to describe the essence and the details of the phenomenon as experienced by the participants (Creswell, 2012; Creswell & Creswell, 2017).

Tool: An interview guide included open-ended questions. The in-depth semi-structured interview, based on 6 questions.

7.5 Procedure

Four special education professionals reviewed the interview questions before data collection. The researcher conducted and audio-recorded the interviews at school. Data collection continued until reaching thematic saturation, resulting in ten interviews.

7.6 Data analysis

The qualitative data were analyzed through thematic and linguistic methods. Thematic analysis uncovered parents' perceptions and main themes, while linguistic analysis highlighted evaluative language used by parents to describe their children's experiences.

7.7 Ethics

Parents' and students' privacy and confidentiality were fully protected. Information obtained from students remained confidential and wasn't shared.

7.8 Findings of Parents' Perceptions of the Contribution of the MEPAS Intervention Program to Daily Life (study 4)

The qualitative findings of Study 4 were based on ten semi-structured interviews with parents of students who participated in the MEPAS intervention program. Thematic and linguistic analyses examined parents' perceptions of the intervention's impact on their children's daily lives.

Table 3 presents a summary of the themes of study 4.

Table 3

Summary of the Themes of Study 4

<i>Theme</i>	<i>Sub theme</i>
Self-Regulation, Autonomy, Responsibility, and Behavioral Change	Responsibility, autonomy, and independence in daily functioning Self-Regulation and Adaptive Daily Habits Behavioral Adjustment and Reduced Problematic Behaviors
Emotional Well-Being and Positive Mood	Emotional calmness and reduced anxiety Positive mood and subjective well-being
Family and Social Relationships	Positive interpersonal behaviors, attitude, and cooperation Growing participation in everyday social life
Learning and School Behavior	School engagement and learning behaviors Motivation and persistence toward learning Academic self-efficacy and confidence
Perceived Value and Contribution of the Program	Positive overall evaluation of the program Perceived contribution to the child The program as a source of sharing Suggestions and advice derived from the program Recommendation to continue the program or to expand it to other populations.

7.8.1 Self-Regulation, Autonomy, Responsibility, and Behavioral Change

Parents described improvements in self-regulation, autonomy, responsibility, and everyday behavior. They reported greater independence, healthier everyday habits, and fewer behavioral

difficulties at home and at school: *"Before, he was very dependent upon me; now he wakes up by himself...He gets prepared by himself...and gets organized on time. He also goes by himself to school and to other places."* – P1; *"...I am certain about is that he sleeps better now, he doesn't stay up playing until 1 a.m. like before"* – p7. The linguistic analysis reinforced these findings through frequent expressions such as *responsible, independent, more than before*.

7.8.2 Emotional Well-Being and Positive Mood

Parents described greater emotional well-being, including reduced anxiety and more positive mood: *"...He is more focused and relaxed"* – P3; *"...he feels that the mandalas coloring is a relaxing activity...told me he feels more relaxed, and he really looks more relaxed also at home."* – P5. The linguistic analysis highlighted frequent adjectives such as *relaxed, happy*.

7.8.3 Family and Social Relationships

Parents reported improvements in family communication, interpersonal relationships, and social participation: *"...doesn't argue like before and more positive."* P2; *"...it is nicer to talk with him and to listen to his opinions...he is nicer with his sister."* – P5. The linguistic analysis reflected the theme through expressions such as *share, communicate, help, together*.

7.8.4 Learning and School Behavior

Parents shared a lot of information connected to school. They perceived improvements in school engagement, motivation, and academic confidence: *"She even started to listen in a lesson she doesn't like because she doesn't understand the teacher."* - P4; *"...my son feels more capable and quite ready for high school."* - P8. The linguistic analysis reflected the theme through verbs and adjectives such as *tries, listens, capable, confident, ready*.

7.8.5 Perceived Value and Contribution of the Program

Parents evaluated the MEPAS intervention program positively, described benefits for their children, and recommended continuing and expanding the program to additional settings: *"I think*

that the program can contribute to these students in the next year, and to other students.” – P2;
“...willpower exercise... suitable to the football team...” – P9. The linguistic analysis emphasized evaluative expressions such as *helped, contributed, suitable*.

7.9 Discussion of Parents' Perceptions (Study 4)

Study 4 complemented the students' perspectives by examining parents' perceptions of the MEPAS intervention program. Overall, parents described positive changes in their children's academic, emotional, behavioral, and social functioning, consistent with the quantitative findings and the students' reports.

Parents reported a wide range of daily functioning and emphasized positive changes, including greater autonomy, responsibility, self-regulation, and family climate, suggesting that the intervention's contribution extended beyond the classroom into daily life.

7.10 Conclusions of Study 4

1. Parents' accounts indicate that the MEPAS intervention program produced positive changes not only at school but also in everyday life, including students' personal habits, self-regulation, daily functioning, and family relationships.

2. Parents described concrete changes rather than general impressions, indicating that the improvements perceived were reflected in their children's everyday functioning.

3. Overall, parents supported the MEPAS intervention program and recommended its continuing and wider implementation.

7.11 Implications of Study 4

The findings support implementing the MEPAS intervention program for ninth-grade students with SEN in SE classes within MSSS and possibly in other settings.

The findings also support considering parents' perspectives when evaluating educational intervention programs for students with SEN and possibly other student populations.

The next part, part IV, concludes the current research. It includes the general discussion, general conclusions, limitations, and directions for further research. It also discusses the contribution of the current research to knowledge and its implications for educational practice.

PART IV: GENERAL DISCUSSION, CONCLUSIONS, AND IMPLICATIONS

IV.1 General Discussion

Students with special educational needs (SEN) often face more academic, emotional, and motivational challenges than their peers, especially during adolescence, when rapid developmental changes occur alongside increased academic and social demands and expectations for independence, particularly in mainstream settings (Casas & González-Carrasco, 2020; Goldan et al., 2022; Kocaj et al., 2018; Rathmann et al., 2018; Schwab & Hessels, 2015; Smith et al., 2023). Despite the growing focus on inclusive education and some evidence supporting SE classes (Bondebjerg et al., 2023; Hurwitz et al., 2020), little research has examined structured, multidimensional interventions for adolescents attending SE classes within MSSS. The current research addresses this gap by developing and evaluating the MEPAS intervention program through a four-study mixed-methods design, with each study providing complementary evidence.

Study 1 confirmed the content validity of the MEPAS intervention program. It includes psychomotor, willpower, and emotional development activities, grounded in theories of motivation and positive pedagogy. The high level of agreement among the six experts supported the literature's emphasis on expert validation as a crucial phase in intervention development (Lynn, 1986; Yusoff, 2019). The experts also helped refine the program through two minor modifications while maintaining its theoretical foundation.

Study 2 provided quantitative data. A correlational phase confirmed the relationships between the academic aspect (academic achievement) and the psychological aspects (academic motivation, academic self-efficacy, and SWB), consistent with previous evidence (Bortes et al., 2021; Wu et al., 2020). The experimental phase examined changes across pre-, mid-, and post-intervention measurements. All hypotheses (H2-H5) were confirmed: academic achievement in Hebrew language and mathematics, as well as autonomous academic motivation, academic self-efficacy, and SWB, improved significantly in the intervention group across all disability types, whereas the control group showed a decrease or no change, consistent with previous research (Camacho. Et al., 2021). Controlled motivation did not change as expected (Ryan & Deci, 2020; Smith et al., 2023). These findings can be interpreted through the satisfaction of basic psychological needs for autonomy, competence, and relatedness (Ryan & Deci, 2000), the development of effortful control (André et al., 2019), non-linear interactions among action, cognition, and emotion (Thelen & Smith, 1994), and Positive Psychology, positive emotions and SWB promoting activities (Carsley & Heath, 2018; Seligman & Csikszentmihalyi, 2000). They also support previous evidence of reciprocal relationships between academic achievement and SWB during adolescence (Bortes et al., 2021; Howard et al., 2021; Wu et al., 2020).

Studies 3 and 4 complemented the quantitative findings by capturing students' and their parents' perceptions of the MEPAS intervention, respectively. Consistent with previous research on effortful control, self-regulation, and academic success (André et al., 2019; Audiffren et al., 2022), students reported increased persistence, self-regulation, and academic achievement. In line with the literature, they also reported improved SWB, including reduced anxiety, through mandala coloring and free drawing (Carsley & Heath, 2018, 2020; Jakobsson Støre & Jakobsson, 2022). Students also described enhanced metacognitive and social belonging, highlighting the importance of

students' voices. This underscores not only whether the intervention was effective, but also how it was experienced (Lindsay et al., 2023; McNally et al., 2025; Woodcock, 2025).

Study 4 complemented these findings by exploring parents' perspectives on their children's daily functioning. Parents reported improvements in autonomy, responsibility, adaptive daily functioning, emotional state, and family climate, and highly recommended continuing and expanding the intervention. This suggests that the perceived impact of the MEPAS intervention went beyond school and into everyday life, emphasizing the importance of parents' voices in special education (Baker et al., 2021; Mann et al., 2024).

Taken together, the four studies provide complementary evidence supporting the potential contribution of the MEPAS intervention program to the academic and psychological development of adolescents with SEN attending SE classes within MSSS.

IV.2 General Conclusions

1. Academic achievement, autonomous academic motivation, academic self-efficacy, and SWB improved following participation in the MEPAS intervention program.
2. The significant increases observed following participation in the MEPAS intervention program didn't differ by type of disability.
3. The MEPAS intervention program included multidimensional non-academic activities to improve both academic functioning and SWB of adolescents with SEN.
4. The MEPAS intervention program helped students identify improvements in their metacognitive skills and the classroom environment.
5. The MEPAS intervention program contributed to the students' daily lives, as reported by their parents.

IV.3 Educational Implications

First, the MEPAS intervention program offers a practical, low-cost approach that school staff can implement after brief training.

Second, the findings support integrating psychomotor, willpower, and emotional development activities into educational practice to promote both academic functioning and SWB among adolescents with SEN.

Finally, the MEPAS intervention program is not language- or culture-dependent, which was positively evaluated by students, parents, and experts. Therefore, it may be adapted and implemented internationally, among students with and without SEN.

IV.4 Contribution of the Current Research to Knowledge

The current research contributes to knowledge in several ways.

First, it developed and validated the MEPAS intervention program, a multidimensional integration of psychomotor, willpower, and emotional development activities for adolescents with SEN attending SE classes within MSSS.

Second, it provides quantitative evidence that participation in the intervention was associated with improvements in academic achievement, autonomous academic motivation, academic self-efficacy, and SWB.

Third, the qualitative studies offered insights into students and parents' perspectives by providing an in-depth understanding of how students experienced academic and psychological changes related to the MEPAS intervention program, while parents confirmed that many of these changes appeared in their children's daily lives.

Finally, the research focuses on an underrepresented, vulnerable group of adolescents with SEN attending SE classes within MSSS, adding to the growing body of research on research-based interventions for this population.

IV.5 General Limitations of the Current Research

The current research has several limitations.

1. Part of the qualitative data relied on self-report questionnaires, which may be influenced by response bias. This limitation was reduced through methodological triangulation combining quantitative and qualitative data from both students and parents.
2. Qualitative findings are inherently subject to the researcher's interpretation, and participants' subjective responses may be influenced by social desirability.
3. Parents were interviewed only in the intervention group; therefore, no comparison with parents of students in the control group was possible.

IV.6 Recommendations

Based on the findings, the MEPAS intervention program is recommended for implementation among adolescents with SEN attending SE classes in MSSS. Educational stakeholders may consider adopting this new intervention in the Israeli educational system to improve academic achievement, autonomous academic motivation, academic self-efficacy, and SWB among this vulnerable group, and possibly adapting it for other populations.

IV.7 Further Research

Based on current research, it is important to examine the effect of this MEPAS intervention program on other students of different ages and in different schools.

Moreover, longitudinal studies are recommended to evaluate the long-term effects of the MEPAS intervention program.

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