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# Examining Science Teachers' Actions and Recommendations for Entrepreneurial Skills in Inclusive Practices

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**Abstract**

The purpose of this study is to examine science teachers' actions and recommendations for teaching entrepreneurship skills in inclusive classrooms with students with learning disabilities.. Observation, individual, and focus group interviews were used in this research, conducted as a case study. Individual and focus group interviews were conducted with 15 science teachers who teach science courses for students with learning disabilities. The inclusive practices of two science teachers within the scope of the relevant subject were observed for 12 lesson hours within the scope of reproduction, growth, and development in plants and animals. The lessons were audio-recorded. The qualitative data obtained were subjected to descriptive analysis. The findings determined that science teachers only addressed the indicator of developing a business idea among the entrepreneurship skill indicators in their lessons. Science teachers emphasized that activities such as visiting business environments, doing real applications, preparing business plans, providing marketing experience, and educational games could be effective in teaching entrepreneurship skills to students with learning disabilities within the scope of reproduction, growth, and development in plants and animals.

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## Introduction

Students with Learning Disabilities (SLDs) are educated in the same classrooms as typically developing students. The activities carried out by teachers in inclusive classrooms, which take into account the individual needs of these students, are referred to as inclusive practices. It is particularly important for students' career planning that teachers implement inclusive practices in science classes, especially for teaching social skills such as entrepreneurship (Özen-Altınkaynak et al., 2025). These students may have difficulty adapting to traditional teaching methods in science classes (Gebbels et al., 2010). Equipping

SLDs with entrepreneurial skills helps them develop self-confidence as well as creative and innovative thinking skills (Govindasamy et al., 2021). Teachers should understand the strengths and interests of these students and implement differentiated entrepreneurship training accordingly (Lestari et al., 2024). These characteristics must be taken into consideration to develop the entrepreneurial skills of students who are educated in the same classrooms as their typically developing peers (Kalaichelvan & Othman, 2024). Entrepreneurship activities that engage multiple senses are essential for these students (Mustapha et al., 2022). Only in this way can inclusive students in science classes be equipped with problem-solving, innovative thinking, planning, and leadership skills key components of entrepreneurial competence (Wallace et al., 2013). In addition, science teachers should utilize learning activities that promote creative thinking by moving beyond traditional science practices to develop the entrepreneurial skills of inclusive students (Lu et al., 2022). In particular, it is essential to organize activities that provide these students with opportunities to implement their own innovation-driven and science-themed entrepreneurial projects using digital tools and technologies (Izzo & Bauer, 2015). Individual support, both inside and outside the classroom, is vital in fostering entrepreneurial skills in science courses for SLDs (Maryanti et al., 2021). To support this development, science teachers should organize individual or small group activities, use visual aids, provide audio or written instructions, and ensure ongoing feedback that takes into account the specific learning needs of these students (Bender, 2012). Collaborative activities involving SLDs such as brainstorming ideas, developing solutions, and practicing planning with peers significantly contribute to the development of entrepreneurial skills (Özen-Altınkaynak et al., 2025; Sorrells et al., 2014). Offering real-life-related learning experiences in science lessons can serve as a valuable opportunity for SLDs to build their entrepreneurial abilities (Maryanti et al., 2021). In science classes, SLDs gaining entrepreneurial skills supports their personal growth and enables them to participate more effectively in social life (Klimaitis & Mullen, 2021). These classes offer a highly suitable environment for fostering entrepreneurial abilities, particularly through topics related to the natural sciences, such as Reproduction, Growth, and Development in Plants and Animals (RGDPA) (Oliveira & Brown, 2022). Gaining entrepreneurial skills through fundamental topics like RGDPA can help students become more active and productive in both academic and social contexts (Bello et al., 2020). Such topics also enhance students' environmental awareness, promote sensitivity to the

natural world, and contribute to the development of their future entrepreneurial potential (National Research Council, 2009). Entrepreneurship-focused, inclusive practices implemented by science teachers on topics like RGDPA, while considering the individual differences of SLDs, play a vital role in equipping these students with entrepreneurial skills. A study examining the inclusive practices and recommendations of science teachers for developing entrepreneurial skills of SLDs through RGDPA is necessary to better understand educational equity and to reveal the professional competencies required to fully unlock the potential of these students.

*Integrating Entrepreneurship into RGDPA Science Education for SLDs*

Science education is of great importance for SLDs (Villanueva et al., 2012), as it enables them to develop scientific thinking and problem-solving skills (Nolet & Tindal, 1994). These skills are essential for helping SLDs become more independent and self-reliant in their learning processes (Asghar et al., 2017). Science courses offer concrete and interactive learning opportunities for SLDs (Kimble, 2015). Through such practices, students learn by making real-world connections rather than relying solely on abstract information, which is often more challenging for them to grasp (Moon et al., 2012). SLDs engage in active learning by observing and investigating natural phenomena (Palincsar et al., 2000), which helps them better understand abstract concepts (Turan & Atila, 2021). By witnessing how science operates in real world contexts through hands-on applications, these students experience more meaningful learning (Asghar et al., 2017). Science projects, in particular, help SLDs build self-confidence, independence, and a sense of achievement (Lambie, 2020). Moreover, science courses provide opportunities for developing collaboration and group communication skills (McGrath & Hughes, 2018), while also nurturing a scientific perspective that can be applied to real-life problems (Sari et al., 2024). To effectively provide SLDs with entrepreneurial skills related to the RGDPA topic in science classes, it is crucial to design the teaching process based on students' current knowledge levels, interests, and learning pace (Marino et al., 2014; Mothwa, 2011). Familiarizing students with endemic plant and animal species in their region can help them identify potential business opportunities related to these species. When students engage with local agricultural and livestock products and work on entrepreneurial ideas such as the efficient use of water resources or the production of organic fertilizers, they not only enhance their understanding of entrepreneurship but also find it easier to grasp scientific concepts.

*Purpose and Problem of Research*

The purpose of this study is to examine the practices and suggestions of science teachers for developing entrepreneurial skills in SLDs within the context of RGDPA. It aims to describe how these students acquire entrepreneurial skills such as scientific thinking, problem-solving, creativity, and leadership, as well as to explore teachers' recommendations for effective teaching strategies. The questions sought to be answered in this research are as follows:

1. What processes do science teachers follow to teach entrepreneurial skills through inclusive practices?
2. What activity suggestions do science teachers offer for teaching entrepreneurial skills within inclusive practices related to the RGDPA topic?

## Method

*Research Design*

In this study, a qualitative case study design was used to comprehensively examine the place of entrepreneurial skills in science teachers' inclusion practices and their thoughts about it. Through this case study, it was aimed to provide valuable information about the integration of entrepreneurial skills in inclusion practices by examining teachers' experiences and views in depth. Within the framework of the research questions, the study first identified which entrepreneurial skill indicators science teachers commonly emphasized in classes with SLDs, without differentiating by grade level. Subsequently, classroom observations were carried out within the context of the RGDPA subject to enhance the reliability of the data obtained. Therefore, the study was conducted with teachers who teach seventh-grade science classes. The selection of this subject area was based on the local livelihood characteristics of the province where the research was conducted. This province experiences a continental climate and is home to several region-specific species, such as the Anatolian Red Cow, Caucasian Bee, Caucasian Goose, and Ancestral Seed Wheat. In addition to traditional large and small livestock farming, greenhouse agriculture has recently emerged as a popular business idea in the region. Carpet weaving, although once common, is now considered a forgotten trade.



*Participants*

Researchers contacted a total of 32 teachers who taught science courses to students with learning difficulties in the province where the study was conducted. Most of these

teachers did not want to participate in the study for various reasons (such as heavy workload or reluctance). This study involved 15 science teachers who teach seventh-grade classes that include SLDs. During the research process, participants were coded as S1 to S15. Among them, seven were female and eight were male; six held a master's degree, and one held a doctoral degree. In terms of professional experience, five participants had 1–10 years, nine had 11–19 years, and one had over 20 years of experience. The number of students in the inclusive classes taught by the participating science teachers ranged from 20 to 30. The schools in which the teachers are employed have playgrounds and garden areas. While all participants took part in individual and focus group interviews, only two agreed to classroom observations. Both of these participants held undergraduate degrees; one was a female teacher (S12) with four years of experience, and the other was a male teacher (S7) with eighteen years of experience.

*Data Collection*

The data were collected in two secondary schools in a province in eastern Turkey in the spring semester of 2024. Data collection techniques such as interviews, focus group interviews and lesson observations were used together to gain an in-depth understanding of science teachers' entrepreneurial skills work with SLDs in their lessons and their thoughts on this issue. In this context, individual interviews aimed to understand science teachers' in-depth knowledge on this topic, focus group interviews aimed to understand different perspectives and common themes within the group dynamics, and classroom observations aimed to directly understand the reflections of inclusion practices on entrepreneurial skills in the lessons. Individual interviews were conducted with science teachers to address the first research question. The interviews were guided by eight semi-structured questions, which are listed below:



- Do you engage in professional discussions about entrepreneurship with your SLDs? What topics do you discuss? Can you provide an example?
- Do you conduct activities to help your SLDs identify potential customers for a business idea?
- Do you conduct activities to determine how to reach customers for a business idea with your SLDs?
- Do you conduct activities that involve drawing, writing, or verbally describing a workflow chart for a business idea with your SLDs?

- Do you conduct activities where you and your students determine the duties and responsibilities of staff for a business idea?
- Have you ever developed a product based on a business idea with your SLDs? What are these products? Do you organize activities to calculate the costs of these products?
- Have you ever developed a product based on a business idea with your SLDs and calculated the profit?
- Have you ever developed a product based on a business idea with SLDs and provided them with experience in marketing the product?

There are 13 secondary school entrepreneurship skill indicators (Kirman-Bilgin, 2019) based on the interview questions. Drawing on the opinions of four experts (a special education professor, a science educator specializing in special education, a special education teacher, and a science teacher), it was determined that eight of these indicators were appropriate for this study. The relevant indicators are presented in Table 2. Additionally, classroom observations were carried out during 12 lesson hours in the context of the RGDPA subject. These lessons were audio-recorded. The researchers discussed entrepreneurial business opportunities in the province where the participating SLDs lived and their alignment with the science curriculum with three science educators. Based on the science educators' opinions, it was determined that RGDPA was among the most suitable topics for observation. The structured observation form, which covers two lesson hours, is shown in Table 1.



**Table 1.** The observation form

| Indicators of Entrepreneurial Skills | Emphasis | | | | Example expressions | |
|---|---|---|---|---|---|---|
| | Two lessons | | | | | |
| | Available | Absent | Available | Absent | Teacher | SLDs |
| E1. Develops a business idea | | | | | | |
| E2. Identifies potential customers | | | | | | |
| E3. Determines customer access channels | | | | | | |
| E4. Creates a workflow diagram (by drawing, writing, or explaining) | | | | | | |
| E5. Defines the duties and responsibilities of staff | | | | | | |
| E6. Calculates product costs | | | | | | |
| E7. Calculates product profit | | | | | | |
| E8. Markets the product | | | | | | |

As part of the second research question, the researchers randomly assigned participants to two focus groups. During the interviews, group members generated suggestions through the brainstorming technique. The researchers posed a total of eight questions in the focus group interviews, one corresponding to each entrepreneurship skill indicator. The first question in the entrepreneurship skill integration application suggestion interview form, related to E1, was as follows: "What kind of activities do you recommend for developing business ideas for SLDs within the context of kavılca wheat, beekeeping, cattle breeding, greenhouse products, goose farming, or carpet weaving? Can you explain with an example?". The remaining seven questions addressed the other entrepreneurship skill indicators similarly.

*Data Analysis*

*Analysis of Science Teachers' Individual Interview Data*

Individual interviews lasted approximately 35 minutes on average. Three researchers conducted a descriptive analysis of the data obtained from science teachers regarding the inclusive practices they implemented in their classrooms to foster the entrepreneurial skills of students with special support needs. Initially, the researchers analyzed the teachers' inclusive practices for each entrepreneurship skill indicator using descriptive methods. They then compared their findings and collaboratively determined the codes, which were subsequently reflected in the results. As a result of this analysis, the proportion of teachers who planned activities for each indicator was presented as a percentage. In addition, the interview data revealed the types of activities teachers implemented and the specific science subjects in which these activities were integrated. Finally, the findings were supported by sample quotations from student interviews to enhance the credibility and depth of the analysis.



*Analysis of Data from Science Teachers' Lesson Observations*

The researchers conducted a descriptive analysis of six structured observation forms, each covering two lesson hours. Two researchers observed the lessons in person. One researcher transcribed and coded the audio recordings. The research team then compared their results and finalized the findings based on the observations.

*Analysis of Science Teachers' Focus Group Interview Data*

The interviews lasted 75 minutes in Focus 1 and 87 minutes in Focus 2. Three researchers coded the science teachers' activity suggestions for developing the

entrepreneurial skills of SLDs, based on activity types. They then combined the codes that served similar purposes and organized them according to entrepreneurial skill indicators. The researchers presented these consolidated findings under the corresponding indicators for the reader.

## Findings

*The Findings of the First Research Question*

Table 2 presents the findings regarding the processes of teaching entrepreneurship skills within science teachers' inclusive practices.

**Table 2.** The findings on indicators of entrepreneurship skills

| Indicators of Entrepreneurial Skills | Inclusive Practices | | | | | |
|---|---|---|---|---|---|---|
| | Available | | Absent | | | |
| | Teacher | % | Teacher | % | Activity types | Science subjects |
| E1 (Develops a business idea) | S1, S2, S3, S4, S5, S9, S11, S12, S15 | %60 | S6, S7, S8, S10, S13, S14 | % 40 | Question and answer<br>Conventional lecturing<br>School garden<br>Project-based teaching | DNA and the Genetic Code<br>RGDPA<br>Simple Machines<br>Sun, Earth and Moon<br>Solar System and Beyond |
| E2 – E8 | - | - | S1-15 | %100 | - | - |

An examination of Table 2 shows that 60% of the science teachers who participated in the individual interviews reported having professional discussions on entrepreneurship with SLDs in their classrooms. However, none of these teachers reported designing activities that included key entrepreneurship components such as identifying potential customers based on a business idea, determining customer access channels, creating or explaining a workflow chart, assigning staff roles and responsibilities, developing a product, and calculating its cost and profit, or engaging in marketing practices. The following excerpt is drawn from teachers' responses to the first interview question, which focused specifically on developing a business idea, one of the entrepreneurial skill indicators addressed in the middle school science curriculum.

**S3:** *"Entrepreneurship and engineering applications are already part of our curriculum. For example, after covering the topic of the Sun, Earth, and Moon, we talk about astronauts. Then, we choose a topic from daily*

*life and design a project around it. After explaining the steps of problem-solving, I tell them: 'Find a problem of your own and follow these steps.' One student, for instance, noticed that her mother washes carpets, so they designed projects to make her life easier. They don't always bring a physical product, but they illustrate their ideas with drawings. Generally, there is an interest in engineering. Once, they even developed a project about space pollution."*

Table 3 presents the findings related to the entrepreneurship skill indicators utilized by science teachers during inclusive practices in their lesson processes.

**Table 3.** The observation findings on entrepreneurship skills in inclusive practices

| Subject | Positioning Entrepreneurship Skills in Inclusive Practices | | | |
|---|---|---|---|---|
| | Indicators of Entrepreneurial Skills | Emphasis | | Activity types |
| | | S7 | S12 | |
| Plants | E1 (Develops a business idea) | We obtain dyes and colors from plants.<br>We obtain oil from sunflower and olive. | We use poppy seeds in cakes.<br>We obtain thread from cotton. | Question and answer, Conventional lecturing, Project-based teaching (S7 - S12) |
| | E2 – E8 | - | - | |
| Animals | E1 | - | - | |
| | E2 – E8 | - | - | Digital educational game (S12) |

During a lesson on products derived from plants, conducted by the teacher coded S12, a typically developing student shared that they grow strawberries and engage in greenhouse farming. However, it was observed that SLDs did not contribute to the discussion or request to speak. Notably, the teacher employed lecture, question and answer, and project-based methods as part of the instructional approach for activities related to business idea development.



*The Findings of the Second Research Question*

Table 4 presents the findings from science teachers' focus group suggestions on how to foster the entrepreneurial skills of SLDs through local living species, within the context of the RGDPA subject.

**Table 4.** Findings regarding science teachers' suggestions for inclusive practices to develop entrepreneurship skills of SLDs

| Context | Activity types | Indicators of Entrepreneurial Skills | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | E1 | E2 | E3 | E4 | E5 | E6 | E7 | E8 |
| cultivation, Greenhouse farming, Goose breeding, Chicken | Learning by doing (visiting the business areas of successful entrepreneurs and implementing the topics discussed) | S1<br>S2<br>S6<br>S9<br>S12 | - | - | S1<br>S2<br>S6<br>S9<br>S12 | - | - | - | - |
| | Showing documentary videos of context- | S5 | S5 | S5 | S5 | S5 | - | - | S5 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| specific works, providing explanations and discussions | S9 S11 | S9 S11 | S9 S11 | S9 S11 | S9 S11 | | | S9 S11 |
| Project work on transforming their business designs into models to be exhibited at the end of the term in teams based on contexts, presenting and marketing their products. | S3 S4 S8 S10 | - | S3 S4 S8 S10 | S3 S4 S8 S10 | S3 S4 S8 S10 | - | - | S3 S4 S8 S10 |
| Preparing, experimenting, and marketing a work environment in the school garden | S6 S7 S10 | - | - | S6 S7 S10 | - | - | - | S6 S7 S10 |
| Conducting entrepreneurial mentor-student studies | S13 | S13 | S13 | S13 | S13 | S13 | S13 | S13 |
| Doing family-supported entrepreneurship activities outside of school, watching entrepreneurship videos, and writing new entrepreneurship stories together | S9 S14 | - | - | S9 S14 | - | - | - | - |
| Calculating the expenses and profits of a business to be initiated, and conducting a study on how it can be marketed | - | - | - | - | - | S3 | S3 | S3 |
| Entrepreneurial-based digital game-based applications, using context-specific game software | S9 S10 | S9 S10 | S9 S10 | S9 S10 | S9 S10 | S9 S10 | S9 S10 | S9 S10 |
| Setting up cheese, products made from kavılca flour, carpet weaving workshops, product preparation, and packaging | S1 S8 | - | - | S1 S8 | - | - | - | - |
| These students are required to do internships in real environments related to the context on certain days and times of the week | S5 | S5 | S5 | S5 | S5 | S5 | S5 | S5 |
| Have them draw on various worksheets, write business stories, and plan their work before real practices related to the contexts covered | S12 | S12 | S12 | S12 | S12 | S12 | - | S12 |
| Conducting school-university entrepreneurship education partnership studies (Using the study areas related to the contexts covered in the veterinary and agricultural faculties of universities, and having experts provide information to students) | S2 | - | - | S2 | S2 | - | - | - |



Five of the fifteen teachers who participated in the focus group interviews (S1, S2, S6, S9, and S12) emphasized that, to develop the entrepreneurial skills of students with SLDs, learning activities involving hands-on experiences in natural environments related to the discussed contexts should be included. They noted that such activities would make significant contributions to students' ability to generate new business ideas and understand

how these businesses operate. Three of the teachers (S5, S9, and S11) emphasized the importance of training based on entrepreneurship documentary videos related to the contexts discussed. They stated that entrepreneurship videos would facilitate the understanding of how such students do business and enable them to adopt stories that will be models for themselves. Four of the teachers (S3, S4, S8, and S10) emphasized the importance of working on developing and presenting entrepreneurial projects in teams over a semester on contexts. They pointed out that these project studies can make significant contributions to the development of students' understanding of creating an original business idea or product, the conditions required to implement this business idea, employees, channels to reach customers, and marketing. Three of the teachers (S6, S7, and S10) emphasized the importance of creating natural work areas within the school or in suitable areas where students can practice entrepreneurship. In these areas, children will gain real entrepreneurial experiences related to the contexts discussed and will be able to recognize the process from the emergence of the product to its sale at an early stage. Two of the teachers (S3 and S13) found that the interaction and collaboration of real entrepreneurial mentors with these students was a valuable way to develop all aspects of entrepreneurial skills. Two of the teachers (S9 and S10) pointed out that context-specific digital games could be used to develop these students' understanding of entrepreneurship. They stated that such work would advance students' understanding of how to establish and manage their own business in a virtual world and strengthen their motivation to learn this business. Two of the teachers (S1 and S8) drew attention to the importance of holding workshops on contexts at school in terms of these students' understanding of business ideas and processes related to entrepreneurship. In addition, only the science teacher coded S5 stated that entrepreneurship internship practices that these students can participate in weekly should be included in the curriculum. Only the teacher coded S12 drew attention to the fact that it would be an effective way for these students to be exposed to real application areas related to the contexts discussed and to be trained by the teacher in the classroom with various entrepreneurship skill activity sheets before practicing. The teacher coded S2 emphasized that these students should be allowed to experience the studies related to the contexts covered in the veterinary and agricultural faculties of the university where they are located and the importance of joint entrepreneurship education studies between school and university. In addition, this teacher mentioned that the university is a place where the production of products related to these

contexts and their sale to the market are carried out professionally and that such a learning process will make a significant contribution to strengthening the students' understanding of entrepreneurship. Sample excerpts from the focus group interviews where science teachers presented their activity suggestions for developing the entrepreneurial skills of SLDs are as follows:

> **S10:** *"I think there could be digital games. I don't know exactly, but I hear that many students have these types of games on their phones and tablets. These farm games in particular might fit your question. International studies show that technological games are more effective in learning. Choosing game-based teaching in entrepreneurship education means that these children can learn while having fun. As teachers, we give these children tasks through computer games on the subject of agriculture and animal husbandry, for example, to make this child love the kavılca consciousness, we create a technology software... a game... a simulation... a field for himself... he plants his piper in the field and gets yield..."*

## Discussion and Conclusion

The findings obtained in this study, which aimed to determine what kind of inclusive practices science teachers apply in their classes towards entrepreneurship skills and what they suggest developing these skills of SLDS, are interpreted in this section. The finding of the study provides important data not only for SLDs but also for students with typical development. The only entrepreneurship skill indicator that science teachers consider within the scope of inclusive practices is creating a business idea. It is seen that activities such as identifying and reaching customers regarding the business idea, creating a product, determining the duties and responsibilities of the personnel who will work in this business, calculating profits and marketing are not addressed. A similar result is consistent with the research conducted with science teacher candidates (İnaltekin et al., 2019). In this study, candidates focused on the business idea development indicator both in the activities they designed related to science and in the measurement tools. This shows that their professional knowledge about teaching entrepreneurship skills within the scope of the science course is weak. The reason for the emergence of similar findings in both the current research and this research conducted with candidates (İnaltekin et al., 2019) can be shown as the science teaching undergraduate program. The lack of course content for teaching life skills in the program (Higher Education Council, 2018) and the inadequacy of courses for individuals with special needs can be seen as the reason for the current research results. The most important result of this research can be seen as the difficulty of designing inclusive practices for teachers to develop entrepreneurship skills in science, and the fact that implementation in

the classroom environment requires professional knowledge and skills. Because the teacher must be professionally equipped to correctly diagnose the individual characteristics of students with learning disabilities, compare and relate the characteristics of the region they live in with the science subject they are addressing, and emphasize entrepreneurship skills within the framework of appropriate achievements. Saraçoğlu and Postallı (2024) found that science teachers working in Turkey felt inadequate regarding inclusive practices. Kind (2009) emphasizes that teachers need to update their professional knowledge depending on the developments in the country. In inclusive practices, teaching entrepreneurship skills is very important (Ergül, 2022; Özen-Altınkaynak et al., 2025). Because research shows that individuals with learning disabilities are successful in entrepreneurship (Meehan et al., 2020). This situation points out how important entrepreneurship skills are for the future planning of SLDs, the importance of school education for this, and the contribution of the current research results to the literature. Although there are many subjects suitable for the development of entrepreneurial skills in secondary school science courses, it was determined that only a few subjects were covered within the scope of the research. It was also determined that although it was an inclusive class, the participants conducted the course within the framework of students with typical development. Ayvacı and Yamaçlı (2022) found that science teachers employed experimental activities, computer-assisted applications, connections to daily life, cooperative learning, educational games, and drama activities in their classroom instruction for students with individual differences. It is possible to say that the reason for this situation is that the teachers focus on the development of students' academic success and try to finish the subject within the time specified in the curriculum. Their focus on academic success negatively affects both inclusive practices and prevents the necessary importance from being given to the teaching of entrepreneurial skills. Er-Nas and Dilber (2020) found that science teachers conducted lessons for students with typical development in their lessons with SLDs, but included individualized education program applications in support rooms. Meehan et al. (2020) stated that the school plays an important role in acquiring entrepreneurial skills for SLDs. One of the most suitable subjects within the scope of teaching entrepreneurial skills is RGDPA, which is related to agriculture and animal husbandry. The observation results made within the scope of the research also coincide with the interview results. The participants focus only on developing business ideas in their lessons during the teaching process of the RGDPA subject, and do not include

inclusive practices for SLDs. This may also be related to the inadequacy of science teachers' professional knowledge. This situation emerged in the research findings. Science teachers stated that they mainly use conventional lecturing and question and answer teaching methods in classes with SLDs (Table 2 and 3). However, Senel-Coruhlu et al. (2024) and Özen-Altınkaynak and Kirman-Bilgin (2023) show that activities based on prediction-observation-explanation are effective in facilitating the conceptual understanding of students with special needs in science classes. Prediction-observation-explanation activities are also recommended for developing entrepreneurship skills of SLDs within the scope of science classes (Çapraz, 2023; İnaltekin & Erginsoy-Osmanoğlu, 2023; Kirman-Bilgin, 2022). In addition, Er-Nas et al. (2022), Senel-Coruhlu and Pehlevan (2021), and Er-Nas et al. (2019) emphasize that experimental activities can be effective on conceptual understanding, and İnaltekin and Özen-Altınkaynak (2023) emphasize that trips can be effective on both entrepreneurship and conceptual understanding for SLDs.

When the science teacher training undergraduate program is examined, it is noteworthy that there is a compulsory course for special education (two hours per week), and the entrepreneurship course (two hours per week) is an elective course (HEC, 2018). However, entrepreneurship skills are a skill that has been taught in science courses and included in the curriculum since 2013 (Ministry of National Education, 2018; 2024). The fact that the participants whose lessons were observed presented business ideas only on plants and did not mention animal products can be seen as another indicator of their weak professional knowledge within the scope of entrepreneurship skills. However, both the interviewed and observed participants whose lessons were determined to be academic success-oriented made suggestions for activities that would provide contemporary and permanent learning in teaching entrepreneurship skills within the scope of SLDs. There may be many reasons for not implementing such suggestions in the classroom environment. Because science teachers emphasize that they do not use different and contemporary teaching methods due to reasons such as insufficient weekly lesson time (Ocak & Korkmaz, 2018), crowded classes (Soğukpınar & Gundogdu, 2020), and exam anxiety they experience (Bardak & Karamustafaoğlu, 2016).



The findings of this study indicate that science teachers did not integrate entrepreneurship skill indicators into the science curriculum during the middle school period and did not effectively implement inclusive education practices. Instead, they

predominantly used traditional teaching methods as their form of inclusive practice. Lessons were mainly focused on academic achievement, with attention primarily given to students with typical development. Moreover, science teachers only considered the indicator of developing a business idea and showed little awareness of how science topics could relate to entrepreneurship. Finally, the activities suggested by the teachers for evaluating business opportunities in the province where SLDs are located were found to involve basic implementations of inclusive education practices.

*Limitations of the Study and Recommendations*

The characteristics assessed through observations and focus group interviews in this study were confined to the topic of RGDPA. The sample included only science teachers working in inclusive classrooms with SLDs. Inclusive classrooms with students diagnosed with mild intellectual disabilities were excluded from the study.

Considering the research results, it is recommended that science teachers design and implement inclusive practices aimed at developing the entrepreneurial skills of SLDs. In doing so, science teachers should take into account the individual characteristics and needs of SLDs. To achieve this, teachers must have a professional understanding of the specific profiles of SLDs and recognize that entrepreneurial skills are essential life competencies for these students. Furthermore, it is recommended that science teachers generate business ideas and design business plans by integrating science topics with entrepreneurship skill indicators, while also considering the climatic conditions and livelihood characteristics of the regions where SLDs reside. Science teachers require professional training to enhance their awareness of science topics through which entrepreneurial skills can be effectively taught. Furthermore, it is recommended that educational policymakers promote the organization of training programs aimed at introducing the principles and significance of inclusive practices for developing the entrepreneurial skills of SLDs within science courses. By considering inclusive classrooms that cover a broader range of science subjects and include students with mild intellectual disabilities, it is possible to better identify science teachers' inclusive practices for teaching entrepreneurship skills and to gather more diverse data on the topic.



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