

ANALYSIS OF THE IMPACT OF THE HIGH SCHOOL DOUBLE TRACK PROGRAMME ON STUDENT SKILL AND CHARACTER DEVELOPMENT

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Abstract

The Double Track High School Program, created by the East Java Provincial Government aims to simultaneously provide students with character and vocational competencies. However, previous research findings on the impact of this program are still fragmented, making it difficult to gain a comprehensive understanding of its "two-way impact." The impact of the program on the development of students' vocational skills and character is the objective of this research. A Systematic Literature Review (SLR) was used, which included the identification, assessment, and interpretation of fourteen selected journals that met the inclusion criteria. The research results show that the program is implemented through four systematic stages: preparation, planning, execution, and testing. The main fields of work for this program are culinary arts, fashion, multimedia, makeup, computer science and accounting, and light vehicle engineering. The results show that this program not only helps students acquire technical skills aligned with SKKNI and DUDI but also instills ethical-religious values, independence, entrepreneurship, and self-reliance. Although the Double Track Program faces operational constraints and produces graduates with "two competencies," namely being job-ready and having a strong character, the results show that this program is effective in producing strong graduates. However, further research is needed on how effective this program is at absorbing students.

Kata kunci: Vocational Skills, Student Character, Secondary Education, Systematic Literature Review

INTRODUCTION

Senior high school education in Indonesia faces significant challenges in preparing graduates to be ready to enter the workforce, especially for students who do not plan to pursue higher education. According to BPS data from 2024, 3.5 million, or 70%, of high school graduates do not continue to higher education, making them vulnerable to the risk of unemployment (Putra, 2024; Mashabi, Pertiwi, 2024). High school graduates also have lower competitiveness compared to vocational high school graduates in entering the job market. The East Java Provincial Government introduced the Double Track High School Program (Governor's Regulation No. 139 of 2018) as a policy innovation that combines vocational competencies and character development through providing additional skills training relevant to the local business and industrial world in an effort to overcome these problems (Diasara, 2020; Sulistyowati, 2023). This program targets students who are at risk of dropping out of school, ensuring they maintain adequate practical skills and a strong entrepreneurial spirit to enter the workforce or start their own businesses. (Diasara & Wilujeng, 2020; Asrori et al., 2022; Yuningsih, 2022; Magfiroh & Wahono, 2024).

The Double Track program combines formal high school education with vocational skills training in various fields, ranging from technology and engineering to culinary arts and cosmetology (Mustaghfiroh, 2022; Sulistyowati, 2023). In addition to developing vocational hard skills, this program also emphasizes strengthening soft skills such as communication, collaboration, creativity, problem-solving, and character development of independence and resilience, which aligns with the demands of 21st-century life skills (Walid & Halimiyah, 2022; Asrori et al., 2022). The research approach used has been qualitative research, such as case studies to explain program implementation and management (Ridhwanah & Werdiningsih, 2022; Suryaningrum et al., 2025), and quantitative approaches, such as case studies to measure its impact on entrepreneurial interest, have been used in previous studies. Quantitative research provides a measurable overview, but this case study has strength in its depth of contextual analysis. Its weakness, however, lies in the fact that the results are still messy and have not yet provided a comprehensive, evidence-based analysis of the program's overall impact. This hinders a better understanding of how the Double Track program has a "dual impact" on both skills (hard skills) and character (soft skills) aspects.

Based on the identified knowledge gap, the research problem is the lack of a systematic, comprehensive, and evidence-based analysis of the impact of the double-track high school program on the development of students' vocational skills and character. A systematic literature review (SLR) is a recommended solution and approach to address this issue. This method was chosen for its ability to systematically, transparently, and reproducibly identify, evaluate, and interpret all relevant studies, resulting in stronger and more reliable conclusions (Resnawita & Hendrik, 2023). This research is expected to contribute to the following: 1. Providing a structured synthesis of empirical evidence on the implementation of the Double Track Program in high schools; 2. Connecting the spectrum of vocational skills developed and how this impacts student character formation; and 3. Identifying problems in implementation and suggesting additional research plans.

This research is structured as follows: after the introduction, the methodology section explains the steps used for the SLR. Next, the results and discussion present the findings categorized by research questions (RQs) regarding implementation, skills, and character impact. The study concludes with a conclusion outlining the main results, implications, and recommendations for related research and policy.

RESEARCH METHODOLOGY

This study uses the Systematic Literature Review (SLR) methodology, which involves identifying, evaluating, and interpreting all relevant research related to the implementation of the double-track high school program. All relevant research on the double-track high school program must be analyzed, interpreted, and used to support the arguments in the discussion. This study involves several stages (Resnawita & Hendrik, 2023).

Research Question

The first step in conducting an SLR is to formulate the research question, which involves determining the target audience, defining the review's objectives, and identifying the type of evidence that will help answer the review's objectives.

RQ1: How is the Double Track High School program implemented in schools?
RQ2: What vocational skills are developed in the Double Track High School Program?
RQ3: How does the Double Track High School program influence student character development?

Literature Search

Literature searches were conducted to gather relevant reference sources to answer the research questions. This process uses the Mendeley platform by accessing the website <https://Mendeley.com/>. The main keywords used in the initial search were "double track high school."

Inclusion and Exclusion Methods

This process will involve assessing the studies identified in the search phase using inclusion and exclusion criteria.

Inclusion Criteria:

- a. The research journal involves high school students in East Java as subjects and location.
- b. The journal was published between 2020 and 2025.
- c. The journal is scientific research.
- d. The research journal explicitly examines the influence or role of double-track high schools on students' competence and character development.
- e. The journal is fully accessible.

Exclusion criteria, on the other hand, are anything that contradicts the inclusion criteria.

Quality Assessment

This is the stage for assessing the quality of the methodology and the reliability of the information presented in the journal that has undergone previous processes. The following is an explanation of the quality assessment criteria established by the authors.

QA1: Does the research describe the implementation of the Double Track High School Program in schools in terms of curriculum structure, teaching methods, and supporting facilities?

QA2: Does the research describe the vocational skills developed in the Double Track High School Program?

QA3: Does the research describe the Double Track High School program's impact on student character development?

Based on the selected journals, the answers to each question posed above will be assessed:

- a. Y (yes): for journals that meet the assessment criteria.
- b. T (no): for journals that do not meet the assessment criteria.

Data Collection

Data collection was conducted through a series of systematic steps, starting with identifying relevant literature, selecting based on eligibility criteria, and extracting data from the selected studies. Data was collected from two main sources:

a. Primary Data

Primary data was collected directly from original sources using the following methods:

- 1) Digital Observation: Conducting direct observation of the research object through the Mendeley platform to identify developments and patterns in publications related to the topic.
- 2) In-depth Literature Study: Analyzing relevant previous scientific articles and publications, with a specific focus on the Systematic Literature Review (SLR) method. The main source of literature was Mendeley.

b. Secondary Data

Secondary data consisted of supporting literature obtained through reference tracing and related document review to complement the analysis.

c. Data analysis

The data analysis process involves a series of systematic steps aimed at transforming raw data into useful and interpretable information. The collected data will be analyzed with the intention of revealing or proving:

1. The roles of the double-track high school program in building student character (RQ1)
2. The variations in research designs used to study the role of the double-track high school program in building student character (RQ2)
3. An overview of the entire series of studies conducted by researchers investigating student character?

Reporting

The final stage, reporting, involves the systematic and comprehensive preparation of the research report. The conclusion is drawn based on the research findings and is supplemented with practical recommendations, for example, for business owners in implementing digital marketing. The study's findings will be published in journals or conferences to advance education.

RESULTS AND DISCUSSION

Results

The research findings are as follows:

3.1.1. Research question results

This study focuses on the role of the double-track high school program on the development of students' abilities and character.

3.1.2. Literature search results

Literature searches were conducted using Mendeley by adding the keywords "double track high school" through the Mendeley platform.

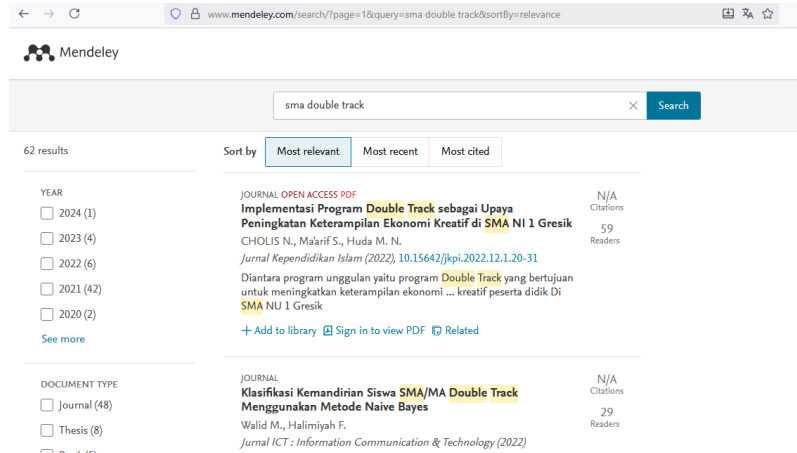


Figure 1. Literature Search

In the literature search process, 62 journals were found that were relevant to the research topic. The next step is to assess the articles based on the inclusion and exclusion criteria.

Results of inclusion and exclusion criteria

Table of research assessment results using inclusion criteria

Table 1. Article Feasibility Results

No	Inclusion Criteria	Numb. of Article
1	Journals obtained through Mendeley	62 articles
2	Journals published between 2020 and 2025	55 articles
3	Journals focused solely on the double-track high school program	30 articles
5	Journals explicitly testing the role of double-track high schools on student competency and character development	14 articles
4	Journals fully accessible	14 articles

The explanation of the table above shows that out of the 62 articles obtained, only 14 articles met the criteria for research.

Quality Assessment Stages

Table 2. Quality Assessment Results

No	Researcher, Year	Title	QA1	QA2	QA3	Result
1	Lafifah, S., & Setyowati, R. N. (2024)	Implementasi Program Double Track Sebagai Penguatan Pendidikan Karakter Mandiri Dan Tanggung Jawab Peserta Didik SMAN 1 Campurdarat.	✓	✓	✓	✓

No	Researcher, Year	Title	QA1	QA2	QA3	Result
2	Ayulusiana, W. E., & Srinawati, D. R. (2025)	Implementation Of Creative Character Of Students Through Double Track Program At SMA Negeri 1 Dawarblandong Mojokerto	✓	✓	✓	✓
3	Jannah, Z. N. U., Saleh, C., & Hayat, A. (2025)	Implementation Of Double Track Program Policy In High School Based On East Java Governor Regulation No. 139 Of 2018	✓	✓	✓	✓
4	Cholidah et all (2024)	Evaluasi Program Double Track Dalam Meningkatkan Kemampuan Berwirausaha Siswa Di SMA Negeri Se-Kabupaten Trenggalek	✓	✓	✓	✓
5	Sucipto, S. (2023)	Pendidikan Entrepreneurability Sebagai Penerapan Program Double Track Di SMAN Jombang Jawa Timur	✓	✓	✓	✓
6	Haris, R. A., & Alfiyah, N. I. (2024)	Implementasi Program Double Track Dalam Meningkatkan Kompetensi Siswa	✓	✓	×	✓
7	Cholis, et all (2022)	Implementasi Program Double Track Sebagai Upaya Peningkatan Keterampilan Ekonomi Kreatif Di SMA NU 1 Gresik	✓	✓	✓	✓
8	Yulikah, et all (2021)	Implementation Of Islamic Entrepreneurship Concept In Double Track SMA Program.	✓	✓	✓	✓
9	Dinaloni, D., & Indrawati, I. (2021).	Pengaruh Program Double Track Terhadap Minat Berwirausaha Siswa SMA Negeri 1 Kalitidu Bojonegoro	✓	✓	✓	✓
10	Sriarianie, S. et al(202)	The Influence Of The Effectiveness Of Entrepreneurship Education And Soft Skills On Entrepreneurial Intentions Through The Skills Provision Program On High School Students In Pasuruan District	✓	×	✓	✓

No	Researcher, Year	Title	QA1	QA2	QA3	Result
11	Sakdiyah, et all (2024)	Pengaruh Program Double Track Dan Efikasi Diri Terhadap Minat Berwirausaha Siswa SMA Negeri 4 Bangkalan	✓	✓	✓	✓
12	Ridhwanah, A. M., & Werdiningsih, W. (2022)	Manajemen Program Double Track Dalam Meningkatkan Kompetensi Lulusan Di SMA Negeri 1 Jenangan Kabupaten Ponorogo	✓	✓	✓	✓
13	Suryaningrum, T., et all. (2025)	Manajemen Program Double Track Dalam Meningkatkan Kompetensi Siswa Di SMA Sunan Giri Menganti	✓	✓	✓	✓
14	Mayudho, I., & Ulfatin, N. (2023).	Manajemen Program Double Track Mandiri Dalam Menumbuhkan Jiwa Kewirausahaan Peserta Didik	✓	✓	✓	✓

DISCUSSION

There are 3 research questions (RQ1, RQ2, and RQ3) that are clarified and discussed in this section.

How is the double-track high school program implemented in schools?

The SMA Double Track program is implemented through various systematic management stages and involves various stakeholders. The research results show the following program implementation:

- 1) Preparation Stage
 - a. Student Mapping: The school uses questionnaires for initial identification of students' interests, talents, and further study plans (Ridhwanah & Werdiningsih, 2022; Suryaningrum et al., 2025). This program is often aimed at students who do not plan to continue to higher education (Jannah et al., 2025; Haris & Alfiyah, 2024).
 - b. Program Development: The school creates schedules, training modules, and achievement targets according to the Indonesian National Work Competency Standards (SKKNI) and the needs of the world of work (Suryaningrum et al., 2025; Jannah et al., 2025).
- 2) Planning Stage
 - a. Team Formation: This team consists of the school principal as the person in charge, the vice principal, accompanying teachers, the program coordinator, and external training staff with competency certificates (Cholis et al., 2022; Suryaningrum et al., 2025; Haris & Alfiyah, 2024).

- b. Task Division: Each team member has clear responsibilities, such as administration, conducting training, and marketing products (Ridhwanah & Werdiningsih, 2022; Cholis et.
- 3) Implementation Process
 - a. Learning Model: Students are divided into Student Business Groups (KUS). Practical and project-based approaches are used to implement the learning process (Cholidah et al., 2024; Ayulusiana & Srinarwati, 2025)
 - b. Training Flow: Generally, the flow consists of theoretical briefing; contextual training and practice with instructor guidance; product production and packaging; and marketing and reflection (Cholis et al., 2022; Ayulusiana & Srinarwati, 2025).
 - c. Partnerships: To ensure the relevance and quality of the training, the school collaborates with the Business and Industrial World (DUDI), professional certification institutions, and MSMEs (Cholis et al., 2022; Sucipto, 2023).
 - 4) Testing and Certification Stage:
 - a. Competency Assessment: Formative assessments (practical tests) and summative assessments (written tests) are used to evaluate abilities (Ayulusiana & Srinarwati, 2025).
 - b. Certification Test: Students who have completed their training hours are required to take a competency exam. Those who pass this exam will receive a nationally recognized certificate of competence, making them more competitive in the job market (Jannah et al., 2025; Cholis et al., 2022).

The implementation of the double-track high school program faces several obstacles, including limited funds, a shortage of practical equipment, a busy schedule, and a shortage of manpower for a small percentage of students. (Lafifah & Setyowati, 2024; Cholidah et al., 2024).

What vocational skills are developed in the double-track high school program?

The research findings indicate that the Double Track High School Program enhances various strategic vocational skills. These competencies not only help meet simple needs in the workplace, but they can also foster an entrepreneurial spirit. The Double Track program provides a variety of vocational skills tailored to market needs and local prospects. These fields are based on the number of times they appear in articles:

- 1) Culinary Arts: This field is the most dominant and popular concentration when implementing Double Track. The focus of development is on specialized skills in making cakes, bread, and various food preparations. Its dominance in this industry indicates two things. First, there is high market demand for culinary products. Second, there is room to improve innovation and creativity in the food sector (Ayulusiana & Srinarwati, 2025; Haris & Alfiyah, 2024; Mayudho & Ulfatin, 2023).
- 2) Fashion: The fashion program aims to enhance the ability to integrate garment construction (sewing) techniques and design (design). This skill has high strategic value for various types of businesses. The ability to independently establish and manage a boutique business is one concrete manifestation of this competency. This boutique business serves as a concrete pathway for graduate absorption (Haris & Alfiyah, 2024; Mayudho & Ulfatin, 2023).
- 3) Multimedia and Information Technology: This field provides students with comprehensive and multidimensional digital literacy. He can do many things, such as graphic design, 3D

animation, photography, radio broadcasting engineering, and web design. Graduates can enter various rapidly growing creative industries due to this diversity (Cholis et al., 2022; Ridhwanah & Werdiningsih, 2022).

- 4) **Makeup:** The goal of the makeup artistry field of expertise is to master the techniques of applying facial makeup, also known as makeup artistry, which is contextual and practical. This skill is highly needed in various socio-cultural moments, such as social events, wedding celebrations, and traditional ceremonies. They have excellent career prospects. They can not only become experts, but they can also establish independent makeup studios (Haris & Alfiah, 2024; Mayudho & Ulfatin, 2023).
- 5) **Computer and Accounting:** The goal of this program is to enhance the technical skills necessary to operate in various industries. Office applications and computerized accounting software are its main focus. This is an enabling skill needed in almost all areas of business administration, finance, and reporting (Mayudho & Ulfatin, 2023; Cholis et al., 2022).
- 6) **Light Vehicle Engineering (LVE):** The purpose of LVE is to improve technical skills in the maintenance and repair of two-wheeled motor vehicles. Given the high rate of car ownership and society's dependence on it as a primary mode of transportation, this industry is highly strategic (Haris & Alfiah, 2024).

The Indonesian National Work Competency Standards (SKKNI) are always linked to the development of these skills to ensure they are relevant and aligned with the world of work (Jannah et al., 2025). Overall, vocational skills in the Double Track High School Program have a strong entrepreneurial component, are relevant to the local environment, and are responsive to labor market signals. The diversity of fields offered demonstrates a systematic effort to produce graduates who are job-ready and can create their own employment.

What is the role of the double-track high school program in character development?

The Double Track program demonstrates that it not only teaches technical skills but also profoundly and multifaceted impacts students' character development:

- 1) **Entrepreneurial Character:** This program increases students' interest and desire to become entrepreneurs (Dinaloni & Indrawati, 2021; Sriarianie et al., 2024). developing entrepreneurial attitudes such as being innovative, creative, risk-taking, independent, and confident (Mayudho & Ulfatin, 2023; Ayulusiana & Srinarwati, 2025). Students are taught to solve marketing problems and create unique products.
- 2) **Independent Character and Responsibility:** This program helps people develop their own character and responsibility. The ability to manage products and take initiative demonstrates independence, while activities carried out within student business groups to track, evaluate, and market products enhance responsibility (Lafifah & Setyowati, 2024).
- 3) **Strengthening Religious and Ethical Values:** The concept of Islamic entrepreneurship is incorporated by some schools, emphasizing religious values such as honesty, loyalty, and responsibility as stewards on Earth, so that entrepreneurs not only pursue worldly profits but also seek eternal rewards (Yulikah et al., 2021).
- 4) **Increased Self-Efficacy:** These programs typically provide students with practical skills that can build their confidence to work or become entrepreneurs after graduation, although one study (Sakdiyah et al., 2024) found that self-efficacy decreased entrepreneurial interest (possibly due to awareness of business challenges).

Overall, the Double Track Program successfully produced graduates who are not only ready for work but also possess strong character qualities and are prepared to contribute positively to society and create job opportunities.

CONCLUSION

The SMA Double Track program is implemented in four systematic stages: Preparation: identifying student interests and developing a program based on SKKNI. Planning: forming a team and clearly dividing tasks. Implementation: project-based learning in the KUS with the assistance of the Business and Industrial World (DUDI). Testing and Certification: assessment of competence and issuance of nationally recognized certificates. Limited funds, equipment, and manpower are the main constraints.

The main areas covered in this program are: Culinary Arts, Fashion, Multimedia & IT, Makeup Art, Computer & Accounting, Light Vehicle Engineering (TKR). Student character development is the enhancement of entrepreneurial traits, which means students become more innovative, creative, and willing to take risks. They also increased their independence and responsibility, as well as enhanced ethical and religious values (in some schools). They also improved their self-efficacy, although one study found that students' interest in entrepreneurship decreased as a result of awareness of the challenges.

The results directly support the goals of the Double Track Program, which are to produce graduates who are ready for work and entrepreneurship. Structured implementation ensures that the skills taught are relevant (based on SKKNI and DUDI). On the other hand, the practical and group learning (KUS) approach simultaneously builds entrepreneurial character, independence, and responsibility. So, vocational training and character development work together to achieve the program's goals.

The Double Track program has several significant effects: For education: it offers practical solutions to bridge the gap between high school and the world of work and provides options for students who do not continue to college. For students: providing graduates with "two competencies," meaning they have a certificate of competence and strong character, which enhances their competitiveness in the job market.

Limitations: The cited research identifies operational constraints (funding, tools, and human resources) and one unique finding about a decline in entrepreneurial interest, which may be triggered by increased awareness of risk. Suggestions for Further Research: Investigate how effective the program is in terms of graduate absorption in the workforce or entrepreneurial success. Research more creative funding strategies and the sustainability of the program.

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