

# The Effectiveness of the Technopark Program in Efforts to Prepare Start-Up Business

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**Abstract.** One of the government's commitments to improve the quality of the workforce in Indonesia is to develop vocational education and training through the technopark program. The purpose of the study was to determine the effectiveness of the technopark program at SMK Negeri 3 Malang. The research method uses a qualitative approach with indicators: effort, cost efficiency, result and impact. Data analysis using the Miles and Huberman model includes: reduction, display and verification. The results of this study revealed that the implementation of the technopark program at SMK Negeri 3 Malang was quite successful in increasing the number of entrepreneurs.

**Keywords:** Effectiveness, Vocational High School, Start-Up, Technopark

## INTRODUCTION

Currently, the government is committed to improving the quality of the workforce in Indonesia through a policy of developing vocational education and training. This is because the entrepreneurial potential of a country has long been seen as a driving force for the country's development (Örnek & Danyal, 2015). [The Coordinating Ministry for the Economy](#) (Kementerian Koordinator Bidang Perekonomian, 2021) [revealed](#) This policy encourages several main targets to be achieved, namely: (1) creating higher quality vocational institutions; (2) reduce the unemployment rate in Indonesia and; (3) encourage the creation of a link and match between vocational graduates and the needs of the industrial world. According to one of the priority policies, it is manifested in the 2015-2019 National Medium-Term Development Plan (RPJMN) document, concerning the development and development program of technoparks throughout Indonesia which will be developed at the Central, Provincial, and Regency/City levels. Meanwhile in the 2016 Government Work Plan (RKP) the government has announced the start of construction and development of 100 technoparks in Indonesia (Ministry of National Development Planning et al., 2017)

One of these priorities is that the government will build a number of science and technoparks in SMKs with the latest technological

infrastructure and facilities (Direktorat Pembinaan Sekolah Menengah Kejuruan, 2018). Technopark according to The International Association of Science Parks is a professionally managed initiative/organization that aims to improve the welfare of the community by encouraging a culture of innovation and competitiveness of knowledge-based industries and institutions in it. The vocational development program initiated by the government in general is due to several underlying problems, including: (1) unemployment reached 6.8 million people, 25% of whom came from vocational graduates (BPS, 2018); (2) mismatch of vocational graduates with DUDI by 50% (BPS, 2019); (3) presidential directives at the 2018 limited meeting (Kementerian Koordinator Bidang Perekonomian, 2021)

In addition, Indonesia only has a score of 21% entrepreneurs from the field of work or ranked 94th out of 137 countries surveyed (Ács, 2019) Meanwhile, according to research data, 69.1% of the millennial generation in Indonesia has an interest in entrepreneurship (Utomo, 2019). From the data that has been presented, unfortunately the entrepreneurial potential for the millennial generation has not been managed properly so far. For this reason, the technopark program initiated by the government tries to develop the entrepreneurial interest of vocational students through the teaching factory learning activity program unit.

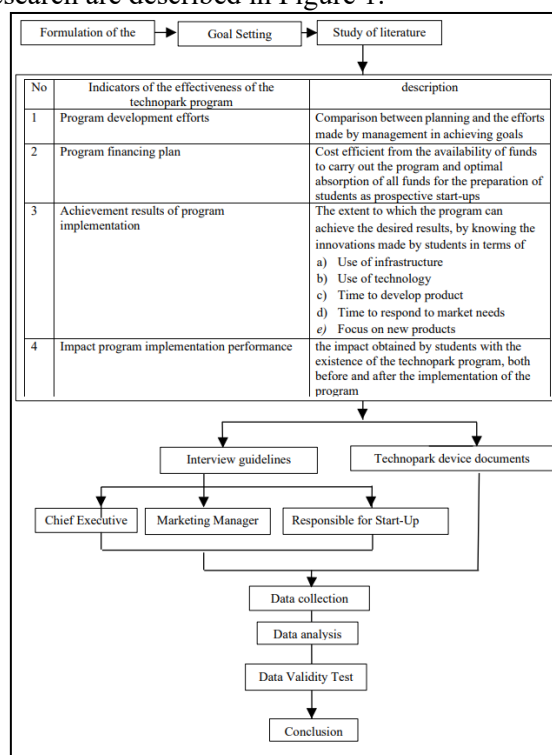
SMK Negeri 3 Malang is one of the schools that received the assistance program Directorate of Vocational High School Development (Dit.PSMK) from the government for the development of technoparks. The process of implementing the technopark program at SMK Negeri 3 Malang is to combine business concepts with vocational education in accordance with relevant expertise competencies. The hope is that schools can create prospective young entrepreneurs(start-up) to be able to compete in the industrial world according to the competencies that have been obtained at school. A start-up is an organization designed to find the right business model in order to generate rapid growth (Blank & Dorf, 2020). However, the opportunities for the development of start-ups globally and domestically are not in line with the success rate of start-ups. In fact, according to research by Shikar Gosh, a Harvard Business School professor, it states that the start-up failure rate is 75% (Blank, 2013). Therefore, government support for developing start-ups has been facilitated by the Ministry of Research, Technology and Higher Education, by providing grant funds to start-ups through incubators in the technopark program. Because the government is aware of the importance of start-ups in the country's economic development, various revolutionary steps have been taken to create a conducive ecosystem for start-ups (Jyotsna, 2020)

This study aims to determine the effectiveness of the technopark program at SMK Negeri 3 Malang in an effort to prepare a start-up business. Discussion about effectiveness is important to put forward, because program effectiveness is a level of achievement that shows the extent to which program targets have been set (Prasetyo, 2020). In this case, effectiveness becomes a benchmark for comparing the processes carried out with the goals and objectives achieved. A program is said to be effective if the efforts made are in accordance with the expected results (Ma'mun, 2019). The hope of this research is to measure the achievement of programs that have been carried out and can be used as evaluation material for interested parties.

**METHODS**

The research method uses a qualitative approach with a descriptive type of research. This research was conducted using library research and literature studies based on various references, and documents for the technopark program at SMKN 3 Malang. The informants are

Mr. Soekardi Arif Widijanto, S.Pd as Director or Chief Executive of the Technopark Program; Mr. Mu'ammam Ali Pradana, S.Pd as Marketing Manager for Technopark and; Mrs. Ana Isro' Illiani S.Pd as the Person in Charge of the Technopark Start-Up who will provide views on the efforts that have been made, financing plans, the results that have been achieved and the impacts that have been obtained from the implementation of the technopark program. Primary data is sourced from the results of observations and interviews with informants. While secondary data is obtained from various sources of documentation such as data on alumni absorption, Decree (SK) regarding the organizational structure of the technopark program. The steps of this research are described in Figure 1.



**Figure 1. Research Flowchart**

Indicators of the effectiveness of the technopark program in SMK Negeri 3 Malang in an effort to prepare a startup business, developed from the theory of Kettner, Moroney and Martin (2008) in their book *Designing and Managing Programs an Effectiveness-Based Approach*. The program effectiveness indicator consists of 4 aspects, namely effort, cost efficiency, result and impact. The design of data analysis in this study using the Miles and Huberman model includes: data reduction (selecting and classifying data and discarding data that is not needed), display/presentation of data (presenting data in the form of a short description of

the text in the form of a narrative) and drawing conclusions/verification. Meanwhile, in testing the validity of the data, the researchers used credibility and confirmability.

## RESULTS AND DISCUSSIONS

The main purpose of implementing technopark in SMK is to improve the competence of SMK graduates that are relevant to industry needs, so that it has an impact on strengthening industrial competitiveness in Indonesia (Direktorat Pembinaan Sekolah Menengah Kejuruan, 2018). Meanwhile, the purpose of the Technopark program at SMK Negeri 3 is that schools can create young entrepreneurial candidates to be able to compete in the industrial world according to the competencies that have been obtained at school and will then be able to develop their creativity and innovate according to their fields. From the analysis of these objectives, it can be stated that there is a synchronization between the objectives of implementing the technopark program from the Dit.PSMK with the clarity of goals that have been set at SMK Negeri 3 Malang, namely focusing on improving the quality of graduate competencies as prospective entrepreneurs who are prepared to be able to compete in the industrial world. In addition, schools need to do things that need to be done by increasing the use of technology and teaching technical knowledge and creative thinking skills in a balanced way to create strong entrepreneurial skills (Sart, 2013)

Based on the results of observations and interviews with resource persons, the strength of the technopark program is the well-documented process of planning, implementing, managing, organizing and administering the program. While the weakness is in financial management that has not been registered with the Regional Public Service Agency (BLUD), so that the development of programs and school potential is not optimal. The existence of a BLUD financial management pattern aims to make SMKs become independent SMKs, by providing great opportunities for schools in order to improve the quality of facilities and infrastructure which so far have only been limited to relying on School Operational Assistance funds. In addition, SMK-BLUD has the ability to manage and distribute funds received from teaching factory learning to fulfill or maintain existing facilities and infrastructure in schools (Khurniawan et al., 2021). Based on the results of observations and interviews,

data analysis was obtained from several indicators that became the focus of research, including:

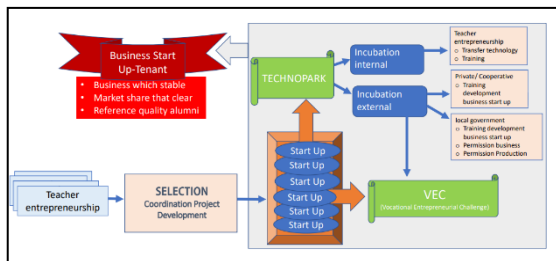
### Efforts of SMK Negeri 3 Malang on Technopark Program Development

The technopark program at SMK Negeri 3 Malang is proclaimed as the center of several teaching factories / production units in the fields of fashion, culinary, beauty, computer network engineering and hospitality. Some of its flagship products include: "Tree Can" Fashion; "Lely" Beauty Salon and Spa; "Vanda" Pastry and Bakery; "Neo" Café Gaul; "edOTEL" Hotel Teaching Factory; "Bougenville" Laundry and Dry-Cleaning Service and "V3 Futura" Computer Service and Accessories. So far, the direct involvement of all students in the technopark program, especially in the production section. Through learning in the work environment, the development of student competencies can be realized so that it is expected to have an impact on the work readiness of vocational students (Dewi & Sudira, 2018). The selection process for students who are members of the technopark program is carried out in each department,

Currently, SMK Negeri 3 Malang will immediately seek new strategies or steps that will be implemented starting in August 2021, namely through the selection of start-up candidates as well as coordination and cooperation with the industry or certain parties in incubation activities. So it is in accordance with the opinion which states that start-ups are agents of change developed from the innovation process in organizations (Politechnika Śląska Wydział Organizacji i Zarządzania et al., 2017). This new strategy consists of several stages, namely:

- a. Forming an entrepreneurial team consisting of productive teachers who teach entrepreneurship as internal incubators in the technopark program.
- b. The entrepreneurship team prepares a questionnaire based on the mapping of students' interests and talents with indicators of intelligence level to select prospective start-ups who will join the program
- c. The entrepreneurship team also recruits start-up candidates from the achievement of student learning outcomes in productive learning.

The scheme of technopark program activities which will start in August 2021, is explained in Figure 2.



**Figure 2. Scheme of Technopark Program Activities**

Based on the picture above, students will go through a selection process from each class for each department, which will later be collected in a special class for further assistance in the form of incubation. Students who are successfully selected, in addition to getting business incubation with the school entrepreneurship team, will also receive training with outside parties/industry in collaboration with SMK Negeri 3 Malang, including the Vocational Entrepreneurial Challenge (VEC). The hope that the new strategy will be implemented soon is aimed at making start-up candidates more objective, because apart from being based on the results of the teacher's assessment of students' academic achievements, this selection effort also involves students and their parents, so that trainees or prospective students who are selected for the start-up program have the skills and knowledge that are in accordance with the criteria for implementing technopark incubation. The general criteria for students who can join this program are students who have the will to be entrepreneurs and have social media to sell.

Based on the results of interviews with the director of technopark, the plan to prepare students as start-up candidates will start as early as possible, namely in the tenth grade and continue when students study the subjects of Creative Products and Entrepreneurship (PKK) in the eleventh grade. So that students are familiar with the work culture and have knowledge and skills in the use of production machines. One of the most complex tasks that must be optimized is transforming a technopark into an innovative ecosystem and ensuring the transfer of knowledge between members through the formation of organizational culture and the cultivation of character values (Smirnova et al., 2019). Furthermore, when students are faced with Industrial Work Practices (Prakerin), the hope is that students can still continue their business by managing or managing time well. The incubator is carried out and continues until the students are in the twelfth grade. Time allocation and start-up competence of the incubation process are important

factors that determine the success of the business after going through the incubation period (Ucar & Koch, 2016).

So far, the training materials that have been obtained by prospective start-ups are the use of information techniques, technology and knowledge to produce goods, financial management, business licensing management (Household Permit Management / PIRT) from the industry office, knowledge of foodstuffs from the Health Office / Health Office. and the Food and Drug Supervisory Agency (BPOM), online marketing through social media platforms and access to capital (Bank and Cooperative incubators). Start-up support structures such as business incubators give more attention to flexible service offerings (Vanderstraeten et al., 2016). These steps reinforce the statement that as a pre-incubation center in the technology development zone, it must be more active and sustainable, including providing consulting services, knowledge and access to capital, including providing knowledge about all types of legal regulations regarding permits and facilities (Örnek & Danyal, 2015).

Cooperation efforts are also carried out by the management with industry and universities to improve service quality. Cooperation with the Industrial World (DuDi) includes collaboration with "Bluebells Hotel" as a support for improving human resources and "Airy Room" which is a hotel operator network technology company that partners with budget hotels throughout Indonesia. The form of cooperation is through the marketing of edotel services. The importance of the involvement of technology-based companies can provide variations in the use of technology to support business growth (Innocenti & Zampi, 2019). The marketing orientation applied is that the more people who buy products from each production unit, the more students learn as start-up candidates.

### **Financing for the Technopark Program at SMK Negeri 3 Malang**

The operational activities of technoparks are based on the principles of efficiency and productivity. Efficiency aspects that need to be considered are financial and financing efficiency. Technopark SMK Negeri 3 Malang started from the Jakarta Dit.PSMK assistance program amounting to 365 million rupiah. Technopark management is in charge and responsible for the management of these funds. The use of funds is focused on promotion through the procurement of events and business branding in the technopark program, capital,

maintenance of production facilities and infrastructure as well as promotion of product marketing that has been produced by each production unit. The development and training of entrepreneurship teacher human resources as an incubator for prospective start-ups is also a focus of funding. According to the Head of the Technopark Program, the funding allocation was in accordance with the plan that had been prepared at the beginning of the program.

Based on the results of interviews, the income that contributes the most to technopark revenue at SMK Negeri 3 Malang is the cafe and pastry business from the catering production unit and edotel from the hotel production unit. However, because during the pandemic conditions there was a significant decrease in turnover, which was up to 30%. This also applies to other production units, such as hospitality, beauty, fashion and computer network engineering. There are several reasons for this, namely, production hours that cannot be maximized due to restrictions on working hours, materials having an expiration date resulting in a large number of product-making materials being discarded, production profits being used to pay for labor services, and shifting the priority of consumer needs to basic needs. Initially, product sales growth from production units was relatively smooth since the launch of the program in 2018, but since the PSBB and PPKM from March 2020 to the following year there has been a decline in turnover. However, the management has the principle of "should be successful in marketing out products at any cost", so that in March 2021 the income for each production unit has returned to normal. Some business units require different strategies to solve the specific problems they are currently facing, therefore demanding that production units have different business policies (Kyung, Jong-Soo et al., 2014). However, the management has the principle of "should be successful in marketing out products at any cost", so that in March 2021 the income for each production unit has returned to normal.

### **Results of the Implementation of the Technopark Program at SMK Negeri 3 Malang**

So far, the complete facilities obtained by prospective start-ups at SMK Negeri 3 have met industry standards, for example for catering and hospitality business units which are already in the same class as five-star hotel facilities, so that they can help students speed up the production process and have an impact on increasing professionalism.

Meanwhile, to support student productivity as candidates for start-up, the class blocking system is used if one production unit gets a large number of orders or gets an event that must involve many students. The rationale is that the more customers use the services of vocational students, the more students will learn in terms of hard skills and soft skills.

Therefore, at the beginning of the semester there is a curriculum synchronization between productive teachers and normative teachers who agree and work together to regulate student learning in that semester. From the implementation of the system, the work productivity of students as start-up candidates is getting honed because they get support, especially from the school. This is in accordance with the opinion which states that the criteria for achieving effective goals are clarity of goals to be achieved, clarity of strategy for achieving goals, solid policy analysis and formulation processes, careful planning, preparation of appropriate programs, availability of work facilities and infrastructure, implementation effective and efficient as well as an educational supervision and control system (Siagian, 2002).

The feasibility analysis of the technopark development plan for SMK Negeri 3 is currently focused on the environment within the school with its superior products, namely:

- a. Development of events held by the hospitality production unit, from the needs of staying, eating and laundry that can be obtained in one package. In this case, collaboration between areas of hospitality and catering expertise is needed to meet customer needs.
- b. The products developed by the catering production unit are pastry and bakery products
- c. Revenue and business development of the fashion production unit, namely orders managed by "Three Can" Fashion
- d. Development of services from the beauty production unit, namely salon and spa

The analysis of product development that is superior to SMK is in line with the results of research which states that the main strategy for incubator development is to manage a number of strengths to take advantage of existing opportunities with the highest attractiveness (Soba et al., 2018). In addition to the development of the internal environment, the next plan and strategy is the development of a permanent business within the school environment aimed at alumni who have

participated in start-up programs in technoparks. And it is possible to work together and collaborate with other vocational schools, the point is that the technopark program is not only intended for one vocational school. However, based on the results of interviews with technopark staff at SMK Negeri 3 Malang, that the implementation of collaboration with other SMK has not been maximized, because each SMK has a superior program that is being developed by their respective schools. The new technopark development strategy was initiated and planned by the management and the team encountered several obstacles, one of which has not yet received an agreement from the school regarding the technical implementation, so it still needs to be finalized and discussed again.

The use of technology is not only in digital learning in production and marketing activities, but the work system also uses planned and structured methods/stages. The technopark program has carried out incubation activities by training students to sell products through marketing technology (digital marketing) by utilizing e-commerce platforms and social networks. From the entrepreneurship teacher, the culinary students receive training in food processing technology using industry-standard tools. The use of technology is one of the models in growing technology-based entrepreneurs. And the most effective incubation model for the food MSME incubation program is the participatory mentoring model (Hasbullah, 2014).

From the observations, students who are prepared for this technopark program respond more quickly to market needs because the experience gained is more diverse, besides regular production training has increased the speed of work. So that any orders ordered by consumers can be a means of student learning to develop a product. This is in line with the opinion that the incubation process has proven to play a role in improving start-up performance, market expansion and increasing the accessibility of funding sources (Yuldinawati et al., 2018)

The ability of SMK Negeri 3 Malang students to make products is not limited, as well as technopark management plays a role in assisting students so that their products are worth selling because of their uniqueness. A product resulting from the technopark program is called an innovative product (Romanovich et al., 2019). One of the general principles for building a successful technopark lies in continuous support to expand the marketing network, being proactive towards

commitment and participation based on independence through interactive learning (Seo, 2015).

### **Impact Performance of the Implementation of the Technopark Program at SMK Negeri 3 Malang**

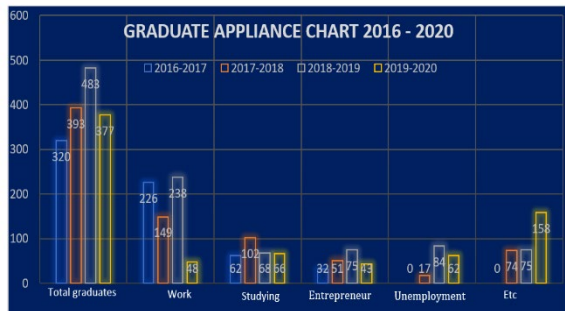
The essence of organizing a technopark at SMK Negeri 3 Malang is to create a production and marketing learning environment. By linking marketing theory and learning, it can contribute to a new way of thinking that focuses on value creation that is integrated in the learning context (Smørvik & Vespestad, 2020). Based on the results of observations and interviews, the impact obtained by students as prospective start-ups through the technopark program includes results related to learning achievement and attitude change, namely

- a. Students can take care of business licenses for entrepreneurship
- b. Students are able to plan and create new products that are unique and develop these products with various variants.
- c. Students are able to manage finances from business results
- d. Students can promote and sell products by utilizing technology.
- e. Adaptability or flexibility is obtained by students after being directly involved in entrepreneurial activities so that students can automatically understand market characteristics, consumer wants and needs and can accept criticism from customers.

The results of observations and interviews stated that the impact obtained by students was having the ability according to the field of expertise and gaining knowledge about entrepreneurship so that students were able to apply the knowledge gained according to their respective abilities. Schools do need to improve entrepreneurial insight and the quality of work practices based on industrial systems to produce vocational students with quality work readiness (Qotimah et al., 2019). This has an impact that many students who graduate are immediately recruited by partner industries because of their competence. With the technopark, the quality of student service to consumer needs will increase. Service quality is the totality of features and characteristics of a service that is owned by its ability to meet implied needs (Kotler & Keller, 2009).

Based on BKK documentation data at SMK Negeri 3 Malang, the number of alumni who choose entrepreneurship after graduating from school tends

to increase than before 2018. However, according to BKK staff, most of the alumni who decide to become entrepreneurs are not from start-up programs. This is because generally students who have been prepared to become start-ups after graduation prefer to continue their studies to college or work in certain agencies. Moreover, during the pandemic period from the end of 2019 until now, many students have difficulty starting independent businesses, due to unfavorable capital and market conditions. Data on the absorption of alumni of SMK Negeri 3 Malang is described in Figure 3.



**Figure 3. Absorption Data for Graduates of SMK Negeri 3 Malang in 2016-2020**

Based on these data, it can be stated that the start-up program in technoparks is quite effective in creating start-ups, this can be seen from the alumni absorption data which shows an increase in the number of entrepreneurs in graduates, although the graph has decreased slightly since the pandemic. Dit.PSMK stated that the expected impact of technoparks is the increasing number of new entrepreneurs who are involved in start-up businesses, the emergence of trends to become entrepreneurs and increasing employment opportunities, increasing competitive science and technology-based industries.

## CONCLUSION

The policy of developing vocational education and training is one of the government's priorities to improve the quality of the workforce in Indonesia. One of them is about the development and development program of science and technopark in SMK with the latest infrastructure and facilities. In 2018 SMK Negeri 3 Malang became one of the recipient schools of the Dit.PSMK assistance program for the development of technoparks. The Technopark has one program, namely creating start-ups. The readiness efforts carried out by schools in the future are conducting structured selection for start-up candidates as well as coordination and collaboration with the industry and agencies for incubation activities. Funds from

the Directorate. PSMK that has been accepted is used by the technopark management of SMK Negeri 3 Malang to promote the procurement of events and business branding for the technopark program, capital, maintenance of production facilities and infrastructure, product marketing of each production unit and human resource training for entrepreneurship teachers as incubators. Production infrastructure facilities to support the technopark program have met industry standards. Likewise with full support from the school so that students as prospective start-ups can maximize production activities. Changes in attitude obtained by students as prospective start-ups include: students are able to take care of business licenses, students are able to plan and create new products that have unique values, students are able to manage finances, and students are able to promote and sell their products. Based on BKK data on the absorption of alumni of SMK Negeri 3 Malang, there is an increase in the number of entrepreneurs.

Thus, things that can be done by technopark management as an organization that plays a role in creating start-ups from an early age are to improve their strategy, which does not only focus on the incubation process, but also pays attention to the post-incubation process.

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