



Implementation of Culinary Arts Learning as a Medium for Developing Life Skills for Vocational High School Students in Tomohon City, North Sulawesi Province

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Abstract: This study aims to examine and synthesise previous research on the implementation of culinary arts learning as a medium for developing students' life skills in vocational high schools (SMK) in Tomohon City, North Sulawesi Province. This study employed a literature review with a qualitative analysis approach. The literature search was conducted using Publish or Perish, a free platform integrated with Google Scholar. Keywords used included "learning," "life skills development," and article titles containing the word "category." The articles were selected based on their topic suitability and relevance to culinary arts learning and the development of vocational high school students' life skills. Furthermore, the selected articles were analysed qualitatively through theme grouping and synthesis of findings to formulate conclusions and recommendations applicable to vocational high schools in Tomohon City, North Sulawesi Province. The results indicate that culinary arts education is an effective medium for developing students' life skills through practical cooking experiences, integration of nutrition education, and the application of innovative learning models. This learning contributes to the development of personal, social, and vocational skills, such as time management, problem-solving, collaboration, and communication, which are essential for readiness for independent living and the world of work. In the context of vocational high schools (SMK) in Tomohon City, strengthening culinary arts education requires a holistic approach that integrates effective pedagogical strategies, local wisdom, industry partnerships, and innovative assessments, so that graduates possess relevant competencies and can compete in the culinary industry.

Keywords: Life Skills, Media, Culinary Arts Learning, North Sulawesi Province, Vocational High School Students, Tomohon

Introduction

Developing life skills for Vocational High School (SMK) students, particularly in the culinary arts field, is a crucial aspect in preparing graduates who are work-ready and adaptable to the demands of the industrial world (Behnke, 2023) (Chabongwa et al, 2024). Integrating 21st-century skills through cutting-edge learning technologies, such as Augmented Reality (AR)-based learning media, can significantly improve students' practical skills and job-readiness (Mahanani et al, 2025). This technology provides an immersive, interactive, and contextually relevant learning experience, supporting the mastery of competencies aligned with the needs of the modern workforce. In addition to technical culinary skills, the hospitality and catering industry also demands that graduates

possess essential job skills, such as creativity, food hygiene and safety practices, interpersonal communication, business insight, and managerial and leadership skills.

Besides enhancing job readiness, culinary arts education in vocational schools also plays a crucial role in students' cognitive, emotional, and personal development (Kandoli, 2022) (Puji Hartini et al, 2025) (Zhang, 2025). Quality vocational education can foster the development of cognitive abilities, such as verbal comprehension, reasoning, working memory, and speed of thought, which are essential for learning and professional performance. Social support, high-quality vocational education, and industry involvement strengthen students' self-efficacy in mastering core competencies in culinary arts (Jurado-Gonzalez et al, 2025) (Muzaffar et al, 2018). Furthermore, learning to cook as a basic life skill fosters self-confidence, independence, and a healthy awareness of lifestyle. Encouraging critical reflection throughout the learning process also helps students develop personally and professionally. At the same time, a curriculum aligned with industry needs and strong partnerships with businesses ensure students gain real-world experience that supports career readiness in the culinary field.

Vocational High School (SMK) students majoring in Culinary Arts in Tomohon City, North Sulawesi Province, face complex educational dynamics shaped by learning outcomes, career prospects, and the alignment of the curriculum with industry needs (Makalew et al, 2018) (Maria et al, 2020). SMK graduates are expected to be highly work-ready. Yet studies indicate a gap between the competencies acquired in school and the demands of the workplace, leading to low graduate labour-market absorption rates. The culinary arts curriculum is designed to equip students with culinary skills and relevant job competencies, but limited facilities, infrastructure, and adequate teaching materials often hamper its effectiveness. This can impact students' mastery of practical skills and reduce their competitiveness when entering the increasingly competitive culinary industry.

Furthermore, the culinary arts curriculum at SMK Tomohon is also aligned with industry standards and accommodates the rich local culture of North Sulawesi. The integration of local culinary traditions into the curriculum is a distinct strength, as it not only preserves cultural heritage but also enhances graduates' marketability in the local and national job markets. However, challenges remain in implementing practical training, particularly due to limited access to modern kitchen equipment and a lack of sustainable partnerships with the culinary industry. This lack of collaboration can lead to a mismatch between the competencies taught in schools and actual workplace needs. Understanding local culinary culture and customs is also crucial for developing students' competencies, as it fosters cultural sensitivity and prepares them to seize opportunities in the culinary tourism sector, which is rooted in local wisdom. This study aims to examine and synthesise previous research on the implementation of culinary arts learning as a medium for developing students' life skills in vocational high schools (SMK) in Tomohon City, North Sulawesi Province.

Methodology

This Research employed a literature review with a qualitative analysis approach. This method aimed to examine, assess, and synthesise previous research on the implementation of culinary arts learning as a medium for developing life skills among vocational high school students. The literature search was conducted using Publish or Perish, a free platform integrated with Google Scholar (Fegasanti & Priyatmojo, 2019). The literature search strategy used a combination of keywords, namely "learning," "life skills development," and article titles containing the word "culinary arts." The search was conducted to obtain relevant scientific articles from both national and international journals. The obtained articles were then selected based on inclusion and exclusion criteria, including topic suitability, focus on culinary arts learning, and discussion of student life skills development. The selected articles were then analysed qualitatively by grouping themes, comparing findings, and drawing conclusions. The results of the analysis were used to formulate a conceptual synthesis and recommendations for the implementation of culinary arts learning that is relevant and applicable to vocational high schools in Tomohon City, North Sulawesi Province.

Result and Discussion

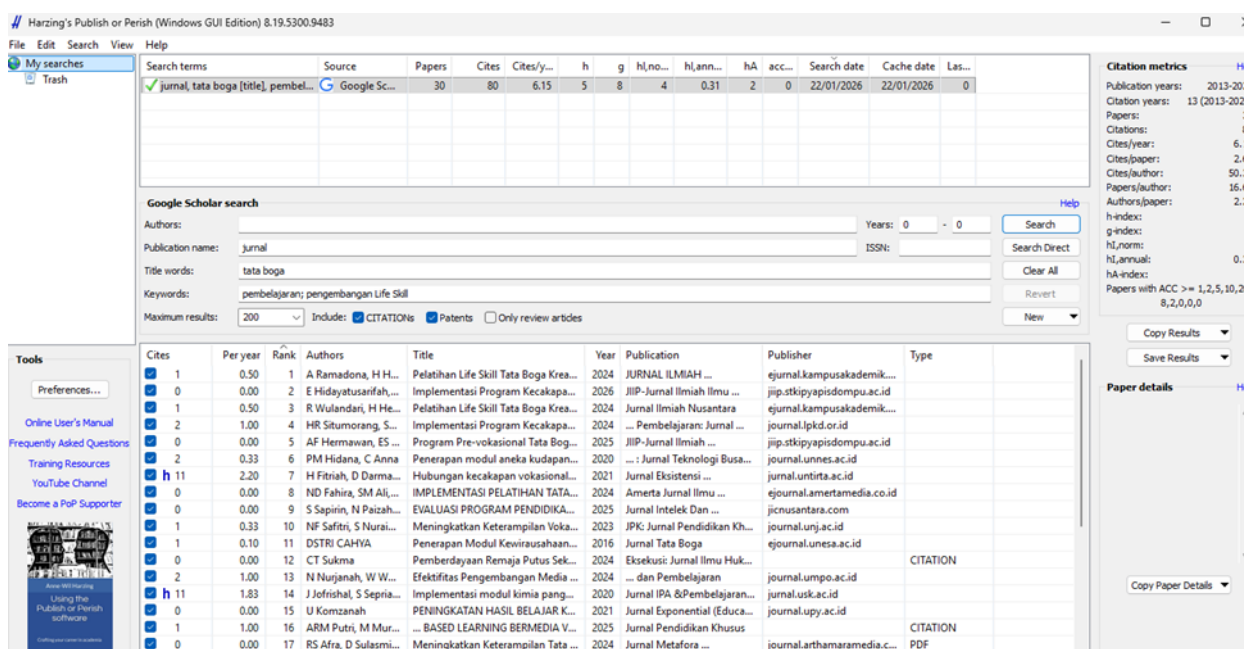


Figure 1. Search results for "food processing learning strategies for vocational high school students."

This image is a screenshot of Harzing's Publish or Perish (Windows GUI Edition) application version 8.19.5300.9483, used to conduct bibliometric searches and analysis based on Google Scholar. The main screen displays a search for keywords related to culinary arts journals, specifically those focused on learning and life skills development. The search results provide a summary of citation metrics for 30 articles (papers), totalling 80 citations, an average of 6.15 citations per year, an h-index of 5, and a g-index of 8, reflecting the productivity and scientific impact of publications on the topic between 2013 and 2026. The

results list displays the article title, author(s), year of publication, journal name, publisher, and document type, with the majority being journal articles in the fields of vocational education, culinary arts training, and skills development. Meanwhile, the right-hand panel summarises citation metrics in greater detail, including the number of citations per author and per article, as well as other normalisation indices. Overall, this figure illustrates the use of Publish or Perish as a quantitative evaluation tool to map the development, relevance, and impact of scholarly publications in the fields of culinary arts and vocational education.

Table 1. Various types of Culinary Arts Learning Implementation

No	Aspects / Themes	Main Focus	Key Findings / Implications	References
1	ICT Integration	Utilization of ICT in education culinary	The use of ICT is very important) (however, still face constraints in the form of a lack of teacher training and limitations in source Power.	(Kandoli, 2022)
2	Source Study	Development specific teaching materials (books) fusion food pocket)	Development of special teaching materials proven beneficial for increasing knowledge and insight among culinary students.	(Lestari & Komariah, 2020)
3	Skills Solution to problem	Strengthening problem-solving skills	The skills solution problem needs more explicit emphasis because practice learning moments are not optimal for teaching it.	(Techanamurthy et al, 2018)
4	21st Century Skills	Instructional Media AR -based	AR media can enhance skill practice and readiness through interactive, immersive learning.	(Mahanani et al, 2025)
5	Think Creative (Creative Thinking)	Support social & creative self-efficacy	Support social and belief: creative self-efficacy plays an important role in growth and ability in creative students.	(Mahfud et al, 2024)
6	Learning Humanistic	Integration of approaches humanistic & technological	The merger of a humanistic approach with technology enhances the quality of the experience. Study and development of student skills.	(Rido et al, 2024)
7	Green Skills	Practice module sustainable practices	Development module-based practice-friendly environment is important for developing green skills in vocational education.	(Handayani et al, 2021)
8	Compliance with Industry	Industry alignment (experience practice & soft skills)	Aligning education with industry needs through practical experience and the strengthening of soft skills is crucial for student success.	(Techanamurthy et al, 2015)

Table 1 shows that improvements in the quality of learning in the field of culinary and vocational education are highly dependent on the integration of technology, the strengthening of 21st-century skills, and alignment with industry needs. The use of ICT and learning media, augmented reality (AR)-based, has the potential to significantly increase students' skill practice and readiness. However, they still face obstacles, limitations, and resource constraints. Development source: Study contextual sources, such as book fusions

on food pockets, as well as modules on green skills-oriented enrichment to grow awareness of sustainability. On the other hand, learning needs greater emphasis on developing problem-solving and creative thinking skills, supported by social interaction, as well as on strengthening creative self-efficacy. Approach integrated learning, mark humanistic with technology, accompanied by experience-based practice and aligned soft skills, strengthening with industry needs, to become key for producing competent, adaptive, and ready graduates for Work. The results of the review of various literature are explained in the following points:

1. Various concepts, models, and strategies for culinary arts learning as a medium for developing life skills among vocational school students are based on previous Research.

Culinary education plays a significant role in developing essential life skills among students, as demonstrated by numerous Research findings (Nair & Fahimirad, 2019) (Ramadona, 2024) (Valand et al, 2025). Culinary learning encompasses a range of competencies, including knowledge, practical skills, and behavioural aspects related to food literacy and well-being. Studies indicate a positive relationship between culinary competencies and improved dietary quality, suggesting that strengthening cooking-related skills can contribute to healthier eating patterns. In addition, culinary education is closely linked to life skills education, particularly in areas such as meal planning, budgeting, food preparation, and decision-making, which are critical for students transitioning to independent living. Many students lack fundamental cooking abilities, a condition that can negatively affect their nutritional status and long-term health. The implementation of culinary education is often grounded in Social Cognitive Theory, which emphasises self-efficacy as a key factor in behaviour change. Culinary programs that focus on building students' confidence through peer-led activities, relatable instructional content, and supportive learning environments have been shown to improve both cooking skills and dietary behaviours.

Various models and strategies further strengthen the effectiveness of culinary education in developing life skills. The Innovative Culinary Competency Curriculum (ICCC), for example, integrates creativity, aesthetics, management, and hands-on practice, enabling students to enhance their innovative performance and technical culinary skills (Hu et al, 2016) (Mohamed et al, 2021). Experiential learning models are also widely applied, allowing students to engage directly in real-world cooking scenarios that foster creativity, problem-solving, and critical thinking. In addition, blended learning approaches that combine online and face-to-face instruction provide flexibility and diverse learning experiences, increasing student engagement and skill retention. Effective strategies commonly found in the literature include hands-on cooking classes, peer-led interventions, and integrating nutrition education into culinary practice.

Furthermore, successful culinary programs are often supported by well-designed educational frameworks, such as integrating curriculum with other academic subjects, collaborating with community partners, and emphasising sustainability and ethical food practices. Continuous assessment and formative feedback are also essential components,

enabling students to monitor their progress and refine their skills. Overall, the literature consistently shows that culinary education is a powerful medium for developing students' life skills, promoting readiness for independent living, and encouraging healthier and more sustainable lifestyles.

2. What types of student life skills (personal, social, and vocational) are developed through culinary arts learning as reported in the literature?

Culinary arts education plays a significant role in developing students' life skills, particularly personal and social skills that support their holistic development. The literature shows that culinary arts education requires students to manage their time effectively and exercise self-discipline, particularly in dynamic, time-constrained kitchen environments (Fitriah et al, 2021) (Fredericks et al, 2020) (Hidayatusarifah & Avrilianda, 2026) (Mohamed et al, 2021). This process fosters students' familiarity with planning, accuracy, and responsibility for assigned tasks. Furthermore, culinary arts education fosters problem-solving skills, requiring students to think critically and creatively to address various challenges during food preparation and service. Successful completion of these tasks contributes to increased self-confidence, self-esteem, and emotional resilience. Socially, culinary arts education, based on group work and the kitchen brigade system, strengthens cooperation, communication, and conflict resolution skills, which are crucial for building healthy interpersonal relationships in both the educational environment and the community.

In addition to developing personal and social skills, culinary arts education also plays a crucial role in developing students' vocational skills and work readiness. Through practical learning, students are equipped with competencies relevant to the workplace, such as food safety practices, menu planning, customer service, and work ethics in the food service industry. Various studies have shown that student involvement in hands-on practical training significantly improves graduates' job readiness and competitiveness in the hospitality and culinary industries. Culinary arts programs that partner with businesses and industry provide real-world experiences through internships and fieldwork, enabling students to apply their skills in professional settings. In the future, integrating learning technology with attention to students' emotional well-being has the potential to strengthen further the effectiveness of culinary arts education in developing comprehensive and sustainable life skills.

3. Recommendations for implementing relevant and applicable culinary arts learning for implementation in vocational high schools in Tomohon City, North Sulawesi Province.

The effective implementation of culinary arts education at Vocational High Schools (SMK) in Tomohon City, North Sulawesi Province, requires a comprehensive approach that integrates relevant pedagogical strategies, the use of technology, and the strengthening of educators' professional reflection. The use of Information and Communication Technology (ICT) in culinary arts instruction has the potential to improve learning quality by providing

more interactive, context-rich presentations of materials (Kandoli, 2022). However, the success of technology integration depends heavily on teacher preparedness, including competency, facilities, and ongoing training. Furthermore, the application of critical reflection in teaching practices enables educators to evaluate the effectiveness of the learning methods used and adapt them to students' needs and characteristics. This approach encourages the creation of a more adaptive, participatory learning environment, oriented towards optimal student competency development.

Furthermore, strengthening culinary arts education at SMK Tomohon also requires integrating local wisdom, industry partnerships, and innovative assessment systems. The use of local culinary traditions and regional food ingredients in the curriculum not only enhances the relevance of learning but also fosters students' appreciation for regional cultural heritage. Collaboration with local culinary industry players through internships and work-based learning programs provides students with real-world experience and strengthens graduates' employability. To support this, dynamic, authentic assessment methods are needed to measure students' practical skills, professional attitudes, and adaptability to industry standards. Practice-based assessment and continuous feedback are key to ensuring that vocational school graduates possess competencies aligned with workforce needs and can compete professionally in the culinary field.

Conclusion

Culinary arts education plays an effective role in developing students' life skills through practical cooking experiences, integration of nutrition education, and the implementation of innovative learning models that support readiness for independent living and healthy lifestyles. Various studies show that culinary arts learning not only develops vocational skills but also develops personal and social skills, such as time management, problem-solving, teamwork, and communication, which are essential for students' overall development. In the context of vocational high schools in Tomohon City, improving the quality of culinary arts education needs to be done through a holistic approach that integrates effective pedagogical strategies, local cultural wisdom, partnerships with the industrial world, and an innovative assessment system to prepare competent, adaptive graduates who are ready to compete in the competitive culinary world.

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