Implementation of an Integrated E-Learning Module for Academic Summarization in English for Academic Purposes

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ABSTRAK

Penelitian ini bertujuan untuk mengembangkan dan mengimplementasikan modul e-learning terintegrasi untuk meningkatkan keterampilan menyusun ringkasan akademik dalam bahasa Inggris bagi mahasiswa di Universitas Muhammadiyah Surakarta (UMS). Modul ini dirancang untuk mendukung pembelajaran *English for Academic Purposes* (EAP) dan diintegrasikan dalam mata kuliah reguler. Melalui pendekatan kombinasi antara pembelajaran daring dan tatap muka, modul ini mencakup empat area utama: struktur organisasi ringkasan, ketepatan tata bahasa, pemilihan kosakata akademik, dan teknik menyusun ringkasan. Implementasi modul dilakukan melalui serangkaian workshop dan sesi latihan terpandu, serta mendukung pembelajaran mandiri melalui platform e-learning. Evaluasi kuantitatif dilakukan dengan menggunakan hasil Ujian Kemampuan Bahasa Inggris (EPE) dan Sistem Penilaian Komputerisasi (CAS) pada tiga kelompok mahasiswa yang menggunakan platform berbeda: tradisional, Schoology, dan OpenLearning. Hasil menunjukkan bahwa mahasiswa yang menggunakan platform Schoology memperoleh nilai rata-rata tertinggi pada EPE (422,99), sedangkan hasil CAS relatif konsisten di semua platform (3,20 untuk kelompok tradisional, 3,16 untuk Schoology, dan 3,15 untuk OpenLearning). Temuan ini mengindikasikan bahwa modul e-learning efektif dalam meningkatkan keterampilan menyusun ringkasan akademik dan dapat diimplementasikan secara berkelanjutan untuk mendukung literasi akademik di UMS.

Kata kunci: Modul e-learning terintegrasi; Keterampilan merangkum akademik; English for Academic Purposes (EAP); Pembelajaran daring; Evaluasi kuantitatif

ABSTRACT

This study aims to develop and implement an integrated e-learning module to enhance academic summarization skills in English for students at Universitas Muhammadiyah Surakarta (UMS). The module was designed to support English for Academic Purposes (EAP) learning and was integrated into regular courses. Through a combination of online and face-to-face learning, the module covered four key areas: summary organization, grammatical accuracy, academic vocabulary, and summarization techniques. The implementation involved a series of workshops and guided practice sessions, supported by self-directed learning through an e-learning platform. Quantitative evaluation was conducted using the English Proficiency Exam (EPE) and the Computerized Assessment System (CAS) across three student groups, with assessments administered on three platforms: traditional, Schoology, and OpenLearning. The results showed that students using the Schoology platform achieved the highest average EPE score (422.99). In contrast, CAS results were comparable across platforms (3.20 for the traditional group, 3.16 for Schoology, and 3.15 for OpenLearning). These findings indicate that the e-

learning module is efficacious in improving academic summarization skills and can be sustainably implemented to support academic literacy at UMS.
***Keywords**: Integrated e-learning module; Academic summarization skills; English for Academic Purposes (EAP); Online learning, Quantitative evaluation*

INTRODUCTION

At Universitas Muhammadiyah Surakarta (UMS), academic summarization has been identified as an essential skill that supports students' ability to process and communicate knowledge effectively. For many undergraduates, especially those in engineering and informatics, the ability to condense lengthy texts into concise summaries is not only a classroom requirement but also a practical tool for handling technical documents, research articles, and project reports. This activity was therefore initiated to strengthen students' summarization skills through a structured and accessible learning program (Rakhmadi & Haryanti, 2023).

In daily academic practice, students frequently encounter difficulties when asked to produce summaries in English. They often struggle to identify main ideas, rearrange information logically, and apply grammar correctly. In addition, the tendency to use informal vocabulary makes their writing less appropriate for academic contexts. Lecturers commonly encountered these obstacles, which became a recurring challenge in EAP (English for Academic Purposes) classes at UMS. Recognizing this issue, the teaching team designed an intervention to directly assist students in overcoming these barriers (Qi & Yanghong, 2024).

The activity involved developing and implementing an integrated e-learning module. Unlike conventional teaching methods that rely heavily on classroom lectures, this module was designed to be flexible and accessible, allowing students to engage with the material independently. It was also integrated with classroom sessions to ensure that students could immediately practice what they learned (Faridi & Izadpanah, 2024). By combining both online and offline approaches, the program aimed to provide a sustainable resource for improving academic summarization.

The module focused on four key areas essential to producing effective summaries: organizational structure, grammatical features, vocabulary, and summarization techniques. These areas were selected based on both the EAP curriculum and the observed needs of students at UMS. The structured content made it easier for students to follow a step-by-step process, beginning with organizing information and culminating in the production of a complete summary.

As part of the community service activity, the module was not simply handed over as a static resource. Instead, it was introduced through a series of interactive workshops, guided practice sessions, and independent tasks. Students were encouraged to engage actively with the digital materials, while lecturers facilitated discussions, provided feedback, and ensured that the module aligned with ongoing coursework (Alenezi et al., 2024). This collaborative implementation enabled students to experience the benefits of ICT-based learning directly within their study routines.

The involvement of students from engineering and informatics programs gave the activity a practical dimension. These students are accustomed to using technology in their studies, making them receptive to an e-learning approach (Yuan et al., 2025). At the same time, they recognized the importance of summarization skills for future professional tasks, including preparing executive reports, project abstracts, and technical

documentation. This increased their motivation and sense of purpose.

From the institution's perspective, the activity demonstrated UMS's commitment to applying digital innovation in education. It was also in line with the university's mission to integrate ICT into the learning process, thereby preparing students not only with technical expertise but also with strong academic communication skills. By engaging students through this module, the program bridged the gap between language learning and digital literacy.

The objective of this activity was therefore practical rather than purely academic: to provide students with a concrete tool for improving their summarization skills, and to ensure that they could apply these skills in both academic and professional contexts. By designing, implementing, and monitoring the integrated e-learning module, the team sought to create a sustainable impact on student learning, while also demonstrating the role of ICT as a supportive medium for English for Academic Purposes at Universitas Muhammadiyah Surakarta.

METHOD OF IMPLEMENTATION

The implementation of this activity began with an initial coordination phase involving the teaching team at the Faculty of Communication and Informatics, Universitas Muhammadiyah Surakarta (UMS). During this phase, the team identified students' specific needs for academic summarization. Lecturers who regularly taught English for Academic Purposes (EAP) observed recurring problems in students' assignments and examinations, particularly in structuring summaries and applying appropriate grammar. These observations informed the design of the integrated e-learning module as a community service initiative.

The activity design began with a preparation phase involving the teaching team from the Faculty of Communication and Informatics, Universitas Muhammadiyah Surakarta (UMS). During this phase, the team identified the specific needs of students in academic summarization. Observations of students' assignments and exams revealed recurring difficulties, especially among students in engineering and informatics, in structuring and producing accurate summaries. Therefore, the design of this integrated e-learning module aimed to address these challenges by combining the learning materials into regular classroom sessions. The module covered four key areas: summary organization, grammatical accuracy, academic vocabulary, and summarization techniques, taught through a combination of online and face-to-face learning. Each session began with an interactive workshop that introduced the main concepts, followed by guided practice sessions in which students applied these concepts to real-life exercises.

After the initial introduction and training, students were allowed to work independently through the provided e-learning platform. This platform was designed to enable students to access materials, watch instructional videos, and participate in interactive quizzes that reinforced their understanding of the techniques taught. In addition, students were assigned tasks to summarize relevant technical articles, such as journal abstracts or project descriptions, to provide a more contextual understanding of the summarization skills. This self-directed learning was supported by discussion forums on the e-learning platform, where students could share their experiences and discuss challenges faced. As part of the evaluation, instruction was delivered through individual assignments and constructive instructor feedback, with the aim of improving students' ability to produce accurate academic summaries.

The next step was the preparation of learning materials. The module content was adapted from the existing EAP syllabus and focused on four key areas: organizational

structure of summaries, grammatical features, vocabulary, and summarization techniques. Each section was designed to be practical and accessible, with examples relevant to students in engineering and informatics. For instance, technical texts such as journal abstracts and project descriptions were included as practice materials. This ensured that the module not only supported language learning but also aligned with students' academic and professional contexts.

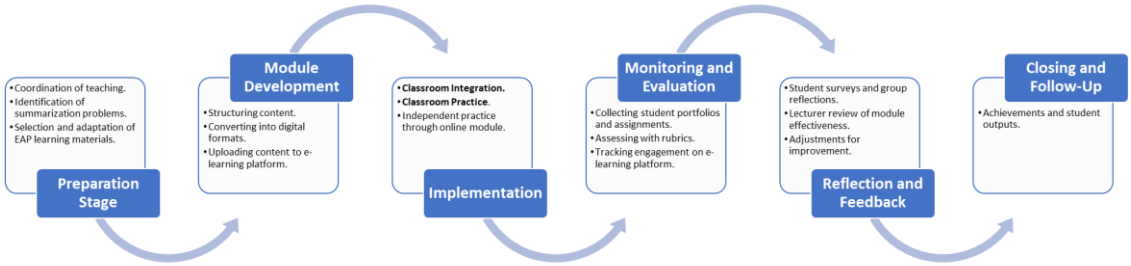

Figure 1: Flowchart of the Community Service Implementation for the EAP Summarization Module

To facilitate delivery, the module was digitized and made accessible via the university's e-learning platform. Materials were provided in multiple forms, including narrated PowerPoint slides, short instructional videos, interactive quizzes, and downloadable reading texts. This multi-format approach enabled students with diverse learning styles to engage effectively with the content (Yu, 2024). The platform also supported discussion forums, allowing the students to collaborate and exchange ideas about their summarization practice. The overall process of the community service activity is shown in Figure 1, which illustrates the implementation flow from preparation to follow-up.

The activity involved 738 students, distributed across three groups according to the learning platform used. Each group consisted of 246 students. Cluster 1 (Traditional) comprises students who participated in face-to-face learning before the pandemic; Cluster 2 (Schoology) includes students who used the Schoology platform from April 2020 to mid-2021; and Cluster 3 (OpenLearning) comprises students who used the OpenLearning platform from mid-2021 to 2023. This distribution allows for a comparative analysis of the effectiveness of different e-learning platforms in improving students' academic summarization skills.

Implementation was carried out through a series of workshops and guided practice sessions. In the first workshop, students were introduced to the program's objectives and provided with an orientation to the e-learning module. Lecturers demonstrated the platform's key features and guided students through the initial exercises (Maphoto & Suliman, 2024). This session was essential for building familiarity with the system and ensuring that all participants could access the materials without technical difficulties (Malkawi et al., 2024).

Subsequent sessions focused on hands-on practice. Students were assigned specific summarization tasks, such as condensing a technical article or creating an abstract of a short research report. During these activities, they applied the principles of organization, grammar, and vocabulary introduced in the module (Chen, 2025). Lecturers provided immediate feedback, highlighting both strengths and areas for improvement. Group discussions were also encouraged to enable students to learn collaboratively by comparing approaches and outcomes.

The implementation strategy also emphasized independent learning. Students were

encouraged to continue using the module outside of formal sessions, allowing them to revisit materials and attempt additional exercises at their own pace (Akram & Abdelrady, 2025). The e-learning platform's tracking features enabled lecturers to monitor participation and progress, ensuring that students remained engaged throughout the program. This combination of structured workshops and self-paced learning was intended to maximize flexibility while maintaining accountability.

Evaluation of student progress was conducted using a combination of rubrics, portfolios, and simple pre- and post-activity assessments. Students submitted their summaries for evaluation, and their work was assessed for accuracy, clarity, grammar, and vocabulary. Portfolios of student work were compiled to document improvement over time, and rubrics provided transparent grading criteria. This approach ensured that assessment remained fair, constructive, and supportive of student growth (Arif et al., 2024).

Additionally, to enrich the evaluation process, further analysis was conducted using two leading indicators: the English Proficiency Exam (EPE) and the Computerized Assessment System (CAS). The EPE measured students' overall English proficiency, whereas the CAS assessed their academic summarization skills. Evaluation based on these two indicators enabled a comprehensive comparison across groups using different learning platforms, including traditional, Schoology, and OpenLearning. This evaluation approach ensured that students' progress could be measured objectively, providing actionable feedback for further improvement.

The program also placed strong emphasis on reflective practice. At the end of each cycle, students were invited to share their experiences with the module, including challenges they faced and strategies that helped them succeed. Their feedback was collected through online surveys and group discussions, which informed adjustments to the module and teaching approach (Li et al., 2024). This reflective element not only improved the program but also encouraged students to take ownership of their learning.

The activity concluded with a review session in which overall achievements were presented, and students were encouraged to consider how their improved summarization skills could be applied beyond the classroom. The closing session emphasized the relevance of summarization for academic assignments, research projects, and professional communication. By linking the activity to future educational and career contexts, the implementation reinforced the lasting value of the skills gained through the integrated e-learning module.

RESULTS OF THE ACTIVITY

The implementation of the integrated e-learning module aimed to enhance students' academic summarization skills by providing a structured, accessible, and flexible learning experience. This section presents the activity's outcomes, focusing on both qualitative improvements in students' ability to produce coherent and accurate summaries and quantitative evaluation of the program's effectiveness. By examining both the English Proficiency Exam (EPE) and the Computerized Assessment System (CAS), we assess the extent to which the e-learning module enhanced students' summarization skills and compare performance across different learning platforms. The findings suggest that the integration of digital tools, such as e-learning platforms, significantly impacted students' academic proficiency and their ability to produce high-quality academic summaries.

Improvement of Summarization Skills through the Integrated Module

The implementation of the integrated e-learning module directly improved students' ability to produce academic summaries. At Universitas Muhammadiyah Surakarta, the module was embedded into regular English for Academic Purposes (EAP) classes, ensuring that students could practice summarization as part of their ongoing coursework. This approach made the activity natural and continuous, rather than an additional burden outside the curriculum. From the outset, students were introduced to the module's key objectives and encouraged to regard summarization as both a language skill and an academic habit.

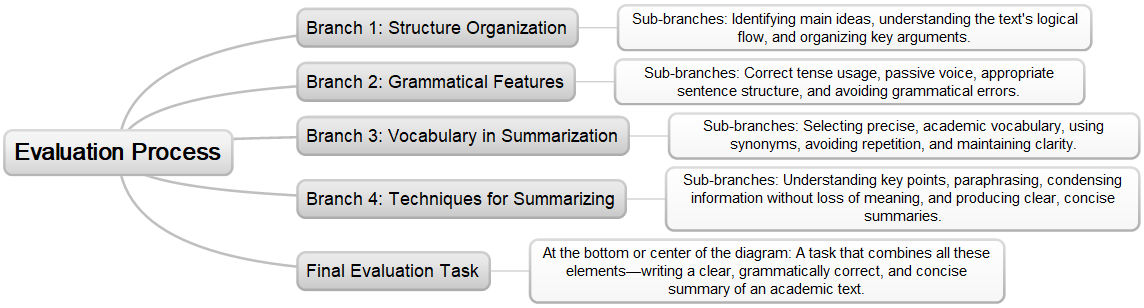

Figure 2: EAP Evaluation Process on the subtopics of Organizational Structure, Grammatical Features, and Vocabulary in Summaries, as well as Techniques for Writing Summaries.

One of the first aspects addressed was the organizational structure of summaries, as shown in Figure 2. Through guided exercises and discussions, students learned to identify main ideas and supporting details, organize them logically, and present information coherently. Many students initially struggled to distinguish between essential and nonessential points, but structured practice gradually helped them develop this skill. As a result, their summaries became more concise and better organized, with clearer topic sentences and logical flow.

The second aspect focused on grammatical accuracy, which had been a recurring challenge in students' previous assignments. The module provided explicit guidance on sentence construction, tense consistency, and the use of cohesive devices. In-class practice, combined with e-learning quizzes, allowed students to assess their understanding immediately. Over time, their summaries exhibited fewer grammatical errors, and they became more confident in applying standard academic grammatical rules in their writing.

A third area of improvement was the use of appropriate vocabulary. Many students relied on informal or colloquial language in their summaries, thereby reducing the academic tone of their work. The module introduced them to a range of academic vocabulary and encouraged them to substitute informal words with more formal equivalents. Through collaborative exercises and vocabulary-building tasks, students expanded their repertoire of academic expressions. This resulted in summaries that sounded more professional, precise, and aligned with academic communication standards.

The fourth element was summarization techniques, which combined the earlier components into a practical skill. Students were trained to paraphrase, condense long passages, and avoid plagiarism by using their own words. Simulation activities and case studies provided opportunities to practice summarization using authentic academic texts, including journal articles and technical reports. This exposure helped them develop strategies for handling complex material and expressing it in a simplified but accurate form.

To support these four areas, the module encouraged students to participate in interactive activities, including group discussions, role-play simulations, and collaborative case studies. These methods created a dynamic classroom atmosphere in which students could share their approaches, compare summaries, and learn from one another. The collaborative environment motivated them to be more active and reduced anxiety about making mistakes. Students reported that working together helped them better understand how to improve their summaries.

Another significant improvement was observed in students' independent learning habits. Since the module was accessible through the e-learning platform, students could review materials, rewatch instructional videos, and complete practice exercises outside class hours. This flexibility allowed them to learn at their own pace, reinforcing what they had learned in class. Many students became more autonomous in their learning, demonstrating that the module not only improved their summarization skills but also fostered independent study practices.

Quantitative Findings from E-Learning Platform Implementation

The quantitative evaluation of the community service activity relied on two primary indicators: the English Proficiency Exam (EPE) and the Computerized Assessment System (CAS). These indicators were measured across three clusters of students, each representing a different mode of classroom delivery. Cluster 1 referred to the traditional classroom before the pandemic; Cluster 2 referred to the online classroom using Schoology (April 2020 to mid-2021); and Cluster 3 referred to the OpenLearning classroom (mid-2021 to the present). This clustering allowed the evaluation to capture both the impact of the e-learning module and the transition in learning environments over time.

Table 1. Performance Indicator between Three Clusters

Indicator	Classroom		
	Cluster 1 Traditional	**Cluster 2 Schoology**	**Cluster 3 OpenLearning**
EPE Average	398.07	422.99	408.70
Standard Deviation of EPE	92.16	82.01	88.65
Student CAS Average	3.20	3.16	3.15
Standard Deviation of CAS	0.26	0.27	0.27

The EPE results showed apparent differences among the three clusters, as shown in Table 1. Cluster 1 (traditional classroom) recorded the lowest average score, 398.07, with a standard deviation of 92.16. This reflected the limitations of lecture-based, face-to-face instruction in supporting academic summarization without digital reinforcement. In contrast, Cluster 2 (Schoology classroom) achieved the highest average score of 422.99, with a standard deviation of 82.01, indicating a positive effect of structured digital delivery and integrated e-learning modules. Meanwhile, Cluster 3 (OpenLearning classroom) scored an average of 408.70 with a standard deviation of 88.65, indicating performance higher than that of traditional classrooms but slightly lower than that of Schoology.

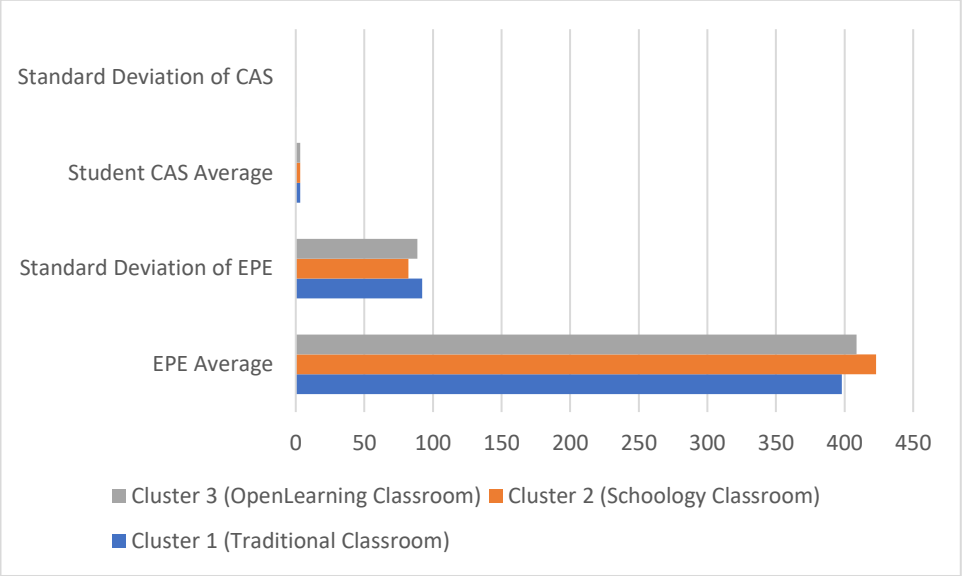

Figure 3. Graphics Score of Three Model Classrooms

The superior performance of the Schoology cluster, as shown in Figure 3, suggested that the platform offered a balance between structured learning, interactive assignments, and timely feedback. Students benefited from the organization of content and the integration of multimedia, which enhanced their understanding of summarization concepts and their ability to apply them effectively. Although the OpenLearning cluster remained superior to traditional classrooms, changes in platform design and navigation affected learning outcomes, resulting in slightly lower averages than on Schoology.

While EPE provided a broad picture of English proficiency across the clusters, CAS offered a more focused view of students' summarization performance. Interestingly, the CAS averages across the three clusters were remarkably consistent: 3.20 for Cluster 1, 3.16 for Cluster 2, and 3.15 for Cluster 3, with standard deviations of 0.26-0.27. This stability indicated that, regardless of differences in overall English proficiency, students developed summarization skills to a similar standard when guided by the integrated module.

The stability of CAS results showed that the e-learning module acted as a leveling mechanism. Although students across clusters had varying proficiency levels, as measured by EPE, their ability to produce academic summaries was relatively uniform after engaging with structured materials and consistent practice. This suggested that the module successfully reduced performance disparities, ensuring that students across different delivery modes achieved comparable levels of summarization competence.

Another important insight from the CAS data was that performance consistency extended beyond platform boundaries. While Schoology students excelled in EPE, the CAS results indicated that summarization skills were not significantly affected by platform choice. Instead, the quality of the module itself—covering organizational structure, grammar, vocabulary, and summarization techniques—ensured that students across all clusters achieved steady results.

From a community service perspective, these findings highlighted two key points. First, the EPE data indicated that online platforms, particularly Schoology, improved students' overall proficiency relative to traditional classrooms. Second, the CAS results confirmed that the summarization module was sufficiently robust to support consistent skill acquisition across differences in general proficiency and learning environments. Together, these outcomes validated the effectiveness of embedding the e-learning

module in English for Academic Purposes classes.

The quantitative evidence provided by EPE and CAS confirmed the program's success. The significant improvement in EPE averages for Schoology (422.99) compared to traditional classrooms (398.07) and OpenLearning (408.70) reflected the positive influence of platform integration. Meanwhile, the stable CAS averages across clusters (3.20, 3.16, 3.15) demonstrated that the summarization module consistently developed students' academic writing competence. These results reinforced the importance of ICT-based learning innovations for sustaining academic literacy at Universitas Muhammadiyah Surakarta.

CONCLUSION AND SUGGESTIONS

The implementation of the integrated e-learning module at Universitas Muhammadiyah Surakarta (UMS) demonstrated a significant improvement in students' academic summarization skills. Quantitative data collected from the English Proficiency Exam (EPE) and the Computerized Assessment System (CAS) indicated that the e-learning module positively impacted student performance. Specifically, the EPE scores of students in the Schoology-based classroom (Cluster 2) had the highest average (422.99), compared with 398.07 in the traditional classroom (Cluster 1) and 408.70 in the OpenLearning classroom (Cluster 3). This demonstrates that integrating e-learning improved English proficiency, with the Schoology platform yielding the most significant gains.

Furthermore, the CAS results across all three clusters were relatively consistent, with Cluster 1 averaging 3.20, Cluster 2 3.16, and Cluster 3 3.15. These findings suggest that the integrated e-learning module effectively supported the development of summarization skills, irrespective of the platform used. The consistency in CAS scores indicates that, regardless of the learning environment, students achieved similar levels of competence in summarization, reinforcing the module's effectiveness in enhancing academic writing.

In conclusion, the quantitative evidence from the EPE and CAS data supports the effectiveness of the e-learning module in improving both English proficiency and academic summarization skills at UMS. The higher EPE scores in the Schoology cluster emphasize the advantages of digital platforms in academic learning. In contrast, the consistent CAS results across all clusters underscore the module's ability to standardize students' summarization skills. These findings confirm the positive role of ICT-based learning innovations in fostering students' academic literacy and communication skills at UMS.

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