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Designing an Integrated E-Coaching Program for Saudi Universities: Meeting Requirements and Expectations

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ABSTRACT

This paper explores the integration of technology into coaching practices, focusing on the design of an e-coaching program for first-year students at Hail University, Saudi Arabia. Through literature review, surveys, and interviews, it identifies critical factors shaping e-coaching effectiveness. The research method involves data triangulation and four key phases of requirements collection: induction, attribution, specifics, and validation. Essential design requirements include social ability, context-consciousness, credibility, theoretical background, practical communication tools, and interactivity. The proposed program aims to meet organizational goals while aligning with stakeholder perspectives. The study provides insights into strategic technology integration, offering guidance for developing tailored e-coaching programs in educational settings.

Keywords: e-coaching, technology integration, design requirements, program development.

INTRODUCTION

The integration of technology into coaching practices presents a landscape rich with both opportunities and challenges. While technological advancements offer promising avenues for enhancing coaching experiences, it is imperative to recognize that not all technological innovations automatically translate into advantages. Rather, a nuanced understanding of the interplay between technology and coaching is essential, considering various influencing factors that shape the efficacy and appropriateness of employing specific technologies in e-coaching contexts(Boyce & Clutterbuck, 2010).

Central to this discourse are the multifaceted considerations that guide the selection and utilization of technology within e-coaching programs. These considerations encompass a spectrum of elements, ranging from the discernment of program requirements and expectations to the intrinsic attributes of chosen technologies, such as usability, accessibility, and security. The alignment of these factors is pivotal in ensuring that the delivery methods employed effectively convey the intended messages and activities of the e-coaching program, thereby facilitating the achievement of desired outcomes.

In light of these complexities, this paper endeavors to delineate critical factors that warrant careful consideration during the design phase of proposed e-coaching programs. By examining the interplay between program requirements, coaching techniques, and communication technologies, this paper aims to provide insights into the strategic integration of technology within the coaching domain, thereby fostering more informed and effective coaching practices.

Research Aim

This paper aims to assess the viability of implementing a customized e-coaching program for first-year students at Hail University's College of Computer Science and Engineering in Saudi Arabia. By investigating e-coaching practices in education and gathering empirical data through surveys and interviews, the study explores student and faculty perceptions, needs, and expectations. By integrating insights from the literature with empirical findings, the paper aims to identify key design requirements for developing and implementing an e-coaching program aligned with strategic goals. The goal is to improve students' academic performance and overall learning experience.

RESEARCH METHOD

The research method employed in this study aimed to provide a comprehensive understanding of e-coaching within the education sector, encompassing perspectives from both students and faculty members. By triangulating data from literature sources, surveys, and interviews, the study sought to derive insights crucial for the effective design and

implementation of an e-coaching program tailored to the specific needs of Hail University's computer science and engineering students as shown in Figure 3-1.

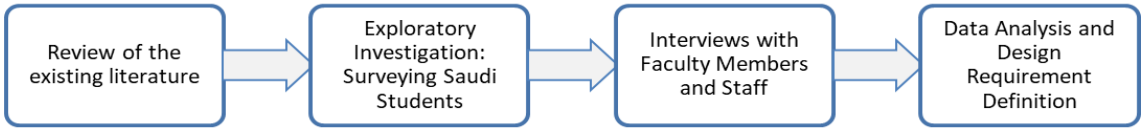

Figure 1 Triangulating Perspectives: Methodology for Designing an E-Coaching Program at Hail University

Review of the existing literature
The first phase of the research involved conducting a comprehensive literature review on e-coaching within the education sector. The primary objective was to gather information pertaining to the current state of e-coaching practices, various approaches employed, best practices identified, and the effects of e-coaching on students' performance.

Exploratory Investigation: Surveying Saudi Students
An exploratory investigation was conducted by surveying a randomly selected sample of first-year students enrolled in the computer science and engineering college at Hail University. The survey aimed to:

- Investigate students' perceptions of e-coaching.
- Examine the correlation between variables outlined in the conceptual model (TAM+++).
- Define students' needs and expectations regarding e-coaching.

Interviews with Faculty Members and Staff
In addition to the student survey, interviews were conducted with faculty members and staff. The purpose of these interviews was to:

- Gain insights into faculty members' perspectives on e-coaching.
- Collect organizational and technical requirements essential for engineering the e-coaching program.

Data Analysis and Design Requirement Definition
Following the collection of survey and interview data, a thorough analysis was conducted. This analysis integrated findings from the literature review with empirical data gathered from the survey and interviews. The objective was to define the design requirements necessary for building the proposed e-coaching program.

GATHERING DESIGN REQUIREMENTS PROCESS

The induction of requirements for the proposed e-coaching program at Hail University involves gathering insights from various stakeholders to tailor the program to Saudi Arabian higher education. This section explores previous experiences with e-coaching in Saudi universities and presents findings from surveys and questionnaires to inform the program's design and objectives.The following figure, Figure 2, shows the proposed e-coaching requirements gathering process for Saudi higher education.

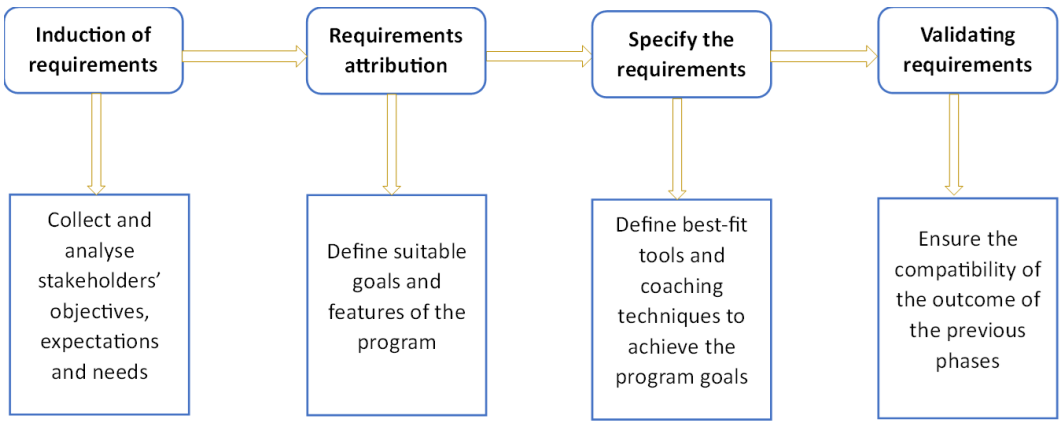

Figure 2 Proposed E-Coaching Requirements Gathering Process for Saudi Higher Education

Induction of requirements
IT and online-based program designers learn business design quality, content, and outcome expectations during requirements induction(Henderson & Venkatraman, 1992). This component gathers university goals, teachers' thoughts, and students' expectations to finish program design's introductory phase. University, professor, and student goals, needs, and expectations should be collected during requirements introduction.

Three-dimensional requirements, needs, and expectations were collected during induction. Considering Saudi higher education e-coaching studies. That will influence Saudi universities' e-coaching uptake and expand on these research findings and recommendations. Second, thesurvey evaluated students' comprehension of coaching, awareness of e-coaching programs' benefits, and cultural factors affecting their participation. We extracted their wants and expectations. Thequestionnaire emailed to teachers and HR personnel collected the university's organizational and technological demands and faculty members' remote learning recommendations during the COVID-19 epidemic.

E-coaching adoption in Saudi universities
This section addresses e-coaching in Saudi institutions to identify concerns and set targets. Analyzing previous studies that implemented e-coaching and similar programs at Saudi institutions will help us avoid their pitfalls and build on their triumphs.

Alkhatnai (2023) revealed that cultural barriers may prevent Saudi colleges from adopting mentorship programs to boost academic performance. Qualitative research from twelve university administrators showed that excellent coach-coachee relationships improve skills and outcomes.

The accepted curricula needed to be more interactive and student participation enhanced because Saudi students resist one-way guidance, which they regard as monitoring and control rather than aid and skills development. They should not collaborate (Alkhatnai, 2023). The study suggests mixing students from different educational years to give younger students older students' accumulated experiences. Helping younger students may make seniors happy (Alkhatnai, 2023).

Ghawji et al. (2017) evaluated Alfaisal University students' and mentors' perspectives and expectations of the university administration's mentoring programs to help first-year students set academic and career goals. Students need inspiration most, according to the report. Interactive support, direction, and constructive feedback are the goals. However, teachers noted direct criticism often backfires. Participants should understand program objectives and coach-student roles and interactions early on to increase responsiveness.

Prince Sultan University mentorship and peer help case study by Ismail and Ismail (2018). The study revealed that Saudi institutions are just starting to employ mentoring and coaching courses, and few have effective mentoring frameworks. Increased collaboration and teamwork, common ground, and a cooperative, need-tailored style rather than commanding and condemning improve motivation and engagement, the study showed. Coaches are expected to listen, sympathize, and help participants without criticizing.

E-academic advice and coaching at King Abdul Aziz University, Jeddah, helped freshmen succeed academically and plan professions, according to Noaman and Ahmed (2015). The poll indicated that students most commonly complained that consultants make suggestions based on their interests rather than their skills, beliefs, and desires. To provide customized coaching, encourage student engagement, input, thinking assessment, and talent identification. The survey also found that KAU advises slowly, delaying counsel. E-academic advising services should consider students' demands for timely aid, say Noaman and Ahmed (2015).

The review suggests the following e-coaching program needs and expectations for students.

- Program ability to develop strong student ties
- Students want collaborative, participatory coaching with immediate feedback.
- E-coaching programs should provide guidance materials on reliable online platforms for responsiveness and rapid access.

Students' expectations and needs
We describe how surveys revealed students' expectations and needs. Four necessities were identified:

Enhance awareness of e-coaching: Students want more e-coaching information, according to the poll. E-coaching awareness is supposed to assist students comprehend and use the program's benefits, grasp how it may help them improve, and tailor sessions to their needs to maximize their benefit. Awareness could significantly affect the conceptual model's independent and dependent variables and help students evaluate the program's usability and willingness to enroll in comparable programs.

Conformity to students' cultural characteristics and beliefs: The survey indicated that programcompatibilityincreases students' e-coaching intents. Students expect programming components to meet their subjective standards. Students should avoid activities that contradict Saudi religion and culture because Saudi society is conservative. E-coaching materials will represent a comprehensive understanding of culture norms and values and match students' expectations regarding the program's cultural compatibility.

Subjective norms, students' consideration: Subjective standards also encourage students to use e-coaching. That offers personalized activities and responses to understand and meet varied people's subjective norms-shaped perceptions. The program should let students express their thoughts and decision-making criteria.

Coaching should be interactive: User-friendliness affects program interaction and usefulness. Interactivity and perceived ease of use were positively correlated in thesurvey, demonstrating that students regard e-coaching programs as easy to use as they interact with them. Students must participate in interactive activities that allow them to ask more questions and receive more feedback.

Expectations from faculty and university

Their open-ended questionnaire responses revealed university prerequisites and academic and HR staff expectations. HR and teachers affect university decisions. Many lecturers in management and planning know the university's vision and aims. Remote learning helped them master online teaching and student engagement, which could increase online coaching resources. HR and faculty expected five points.

Expert engagement: Many faculty members recommend involving teachers, students, and other concerned parties in the development and implementation of the proposed e-coaching program to ensure that its materials and activities meet real student needs based on academic learning requirements and the university's vision and mission.

Diversification of communication methods: Communication methods should be varied to reflect students' interests and competencies. Teacher experiences with remote learning demonstrate students' abilities and choices vary. Some students participated in online sessions, while others preferred email and reading before asking questions.

Understanding students' differences: Student abilities and preferences vary, as seen by questionnaire replies. To tailor the proper reaction, techniques and approaches to understand and recognize students' skills are needed. Assessing their input and self-reflection, holding additional one-on-one sessions to understand students' needs and ability to participate in certain activities, and achieving desired results may be used.

Balancing the academic and social needs of students: Answers included encouraging students to participate in non-academic activities to develop their talents and skills as university goals, in addition to improving academic performance. Faculty and HR intended the e-coaching curriculum to balance academic and social development. The course should let students generate and implement realistic life and educational solutions and communicate with teachers and peers to transfer experience.

Refine time management and prioritization abilities: Students need time management and prioritizing most to balance academic and social activities. First-year university students struggle to manage academics, social, athletics, and literature. Student time management and prioritization abilities are needed now.

Requirements attribution

The second step in requirements collection is attribution. It defines the aims and core aspects of the proposed e-coaching program to meet needs and expectations based on requirements induction findings.

Establishing the suggested e-coaching program's objectives

The proposed e-coaching program aims to:

- Raise awareness of e-coaching among students.
- Support first-year students in overcoming challenges.
- Help students develop skills for successful self-behavior change and university engagement.
- Utilize appropriate and effective methods.
- Interactively communicate with students throughout the e-coaching program.
- Understand students' needs, skills, and individual differences.
- Encourage student participation and provide timely, tailored feedback.
- Track program progress and student performance, identifying areas for improvement.

Identifying the essential e-coaching program elements

Defining the difficulty level of the desired e-coaching program is crucial to identifying design specifications, key concerns, and participant expectations. After understanding e-coaching and collecting university and student needs and expectations, the research will propose a definition of e-coaching programs and six technical features believed to be

essential to meet the dimensions of the proposed definition and the needs and expectations collected in the requirement induction phase. E-coaching IT systems or tools must also help coaches establish and maintain tailored, cooperative relationships with coachees in which they feel supported, so coaches can understand their positions and effectively plan and achieve the desired behavioural change consistently with coachees' perspectives. Thus, the research suggests the following definition of an e-coaching program that meets the collected requirements.

E-coaching programs are computer-based interactive platforms that enable coaches to observe, analyze, predict, and respond to a coachee's behavior in a virtual setting. This structured environment fosters ongoing collaborative dialogue, allowing coaches to actively assist coachees in setting and achieving goals. The effectiveness of this process relies on a thorough understanding of coachees' needs, abilities, and the implementation of persuasive techniques.

As defined above, the suggested e-coaching program should be context-focused to help students with academic performance and social activities in their early university years. The term also suggests that the e-coaching program should stimulate interaction and be predictive and adaptive to behavioural changes. The following features are necessary for e-coaching program creation. These qualities were based on studying the research on e-coaching programs, assessing students' demands, and gathering faculty and staff requirements.

Social ability: The e-coaching program must be able to communicate with trainees. Training and system cooperation depend on this discourse (Wooldridge & Jennings, 1995). Program activities must address peer and societal influence on student involvement and interaction and provide solutions that fit their religious, social, and subjective norms. Faculty members advised the e-coaching program to incorporate social influence and subjective standards to understand students' social needs to attain its goals.

Context-conscious: The e-coaching program is adjusted to organizational needs, such as the university's long- and short-term goals for implementing it. That includes boosting students' academic achievement and social, sports, and cultural activities. The program also addresses pupils' context. The survey found that e-coaching programs and their benefits were poorly understood. The program will spend five to ten minutes in each session educating students about e-coaching, how to use materials, and the coaching sessions' outcomes to boost academic achievement and university social activities.

Credibility: The e-coaching program will use reliable sources to develop trust in the introduced materials (Flanagin & Metzger, 2008), which may encourage students to interact and follow recommendations.

Theoretical background: The e-coaching program will use a theoretical foundation and effective behavioural change models like the Critical Alignment Model CAM to modify behavior. That will increase the likelihood of positive findings from authorized models with empirical data.

Practical communication tools: The program will employ email, Zoom, and Telegram for simple contact. Faculty members mentioned these tools as practical communication tools they utilized during remote learning. Students can easily access and use them. The program will also distribute materials via video, audio, and email PDFs. The variety of communication methods is meant to accommodate students' diverse communication abilities and preferences and encourage involvement.

Interactivity: Interacting with other systems (e.g., trainee inputs and physical and mental activity patterns) to gather and process information for enquiries and recommendations requires an interactive interface. Zoom will be used during sessions to receive rapid participant queries and ideas. Post links to useful activities and information. This engagement will facilitate a two-way dialogue between the coach and the students to meet their need to be heard and eliminate opposition from seeing the advice as monitoring and order-giving. It could also promote collaboration and teamwork by encouraging idea development and reciprocal learning and experience transformation (Ismail & Ismail, 2018). The program's interaction should also allow participants' voices and allow the coach to listen, show sympathy, and provide consistent assistance to meet students' requirements.

Specify the requirements

This step is critical as it involves converting the objectives and characteristics of the program and aligning them with the necessary coaching and communication strategies to meet the criteria and expectations.

Identify the most effective e-coaching techniques

The forthcoming e-coaching program will integrate three coaching methodologies. An extensive evaluation of various coaching approaches is conducted, with the aim of eliminating those that do not contribute to the achievement of program objectives and meet the necessary criteria. For instance, traditional instructional coaching, which places students in a passive role and hampers their engagement and interaction, is excluded based on research by Cornett & Knight (2009) and Vogt & Rogalla (2009). Instead, coaching techniques that have demonstrated favorable results in relevant areas are selected.

The method of behavioural coaching

Behavioural coaching is focused on achieving specific goals and taking concrete actions to reach them. The problem-solving-oriented The GROW model (Alexander & Renshaw, 2005) and TGROW model which developed in 2003 by Dowley, are extensively utilized in the field of education (Short et al., 2020) and are endorsed as successful coaching strategies in well-established education systems such as the UK (Leadership et al., 2005). Behavioural coaching is a user-friendly tool that simplifies the process of teaching and learning, making it accessible to students, instructors, coaches, and leaders. Research conducted by Baker et al. (2010) has demonstrated that it can effectively alleviate anxiety, help students cope with exam stress, and enhance academic achievement. The behavioural approach is subject to criticism for its failure to incorporate cognitive-emotional elements, incorporate unconscious content, and address systemic faults that impact the process of learning. Several scholars in the field of human behavior suggest integrating cognitive elements into cognitive-behavioral strategies as a means of preventing negative attitudes and thoughts (O'Broin & Palmer, 2009; Palmer & Szymanska, 2018; Passmore, 2018).

The method of cognitive-behavioural coaching

Cognitive-behavioral coaching refers to a form of coaching that focuses on understanding and modifying thoughts and behaviors to achieve desired outcomes.

Behavioural approaches fail to consider cognitive and emotional elements, as stated. Integrating cognitive variables into the behavioural approach aims to examine the connection between emotions and behaviors in order to promote psychological stability and resilience, enhance performance, improve health and mental well-being, and alleviate stress (Palmer, 2007). This approach encourages introspection and is employed by educators to study and assess their instructional methods (Costa & Garmston, 2002). Combining both approaches is considered more sophisticated and expected to provide superior outcomes, but coaches require additional training in an educational setting (Palmer & Szymanska, 2018).

The method of solution-focused coaching

Individuals from diverse educational backgrounds can easily understand and apply solution-focused coaching techniques. Additionally, it has been employed in mixed methods research to enhance life skills (M. Adams, 2022). The approach promotes the utilization of coachees' abilities, expertise, and assets to tackle obstacles by prioritizing future-oriented solutions rather than dwelling on the past (A. M. Grant, 2006). Nevertheless, concentrated teaching has beencriticized for its inability to resolve intricate challenges. The approach's lack of depth and shallowness may result in the failure to tackle fundamental problems, hinder lasting transformation, or compromise the sustainability of the change. It may have reduced effectiveness when obstacles arise due to the activities of others, leading to a scenario that is beyond one's control (A. M. Grant, 2022). When utilized in conjunction with other approaches, the solution-focused methodology enhanced students' abilities to solve problems, cope with challenges, develop resilience, increase educational performance, attain goals, and alleviate depression resulting from unforeseen circumstances.

Identifying the e-coaching communication tools

Faculty members anticipate expanding the range of communication channels. The system takes into account the individual differences and preferences of students in order to provide them with appropriate support tailored to their communication abilities, talents, and preferred methods. The proposed e-coaching program will utilize email, Telegram, and Zoom to deliver course materials, conduct weekly and individual meetings, share activity links, and offer written feedback. This pick was motivated by faculty ideas and similar research on e-coaching and e-learning programs that highlight the efficiency of Telegram and Zoom in communicating and delivering online courses.

The selection of email as a communication medium is based on its ability to encourage introspective thought (Pulley, 2007). The text-based form of email facilitates the collection and analysis of thoughts, enabling the identification of thinking and behavioural patterns, and the adjustment of feedback (Hamilton & Scandura, 2003).

The Media Richness Theory (Daft, Lengel, & Trevino, 1987), explores the impact of technology on communication by analyzing its capacity to provide prompt feedback, transmit a large amount of information, and support several communication channels. The face-to-face connection on online platforms such as Telegram and Zoom is enhanced because to the excellent communication speed, the ability to provide immediate feedback, and the high volume of spoken information that can be communicated over many visual and auditory channels. Email, a type of communication that relies on text and does not require immediate responses, lacks depth because it has delayed feedback, limited information transfer, and only allows for one communication route. High-speed communication disregards users' technical aptitude and preferences and may not always be advantageous. Face-to-face encounters promote spontaneity but do not foster reflective thinking, which can be more effectively accomplished through email (Pulley, 2007).

Saudi students heavily rely on Telegram for communication. Telegram was selected based on its advantages, as highlighted in previous research, and its capacity to meet the identified requirements. According to Aladsani (2021), the user-friendly nature of Telegram enhances program engagement, facilitates media exchange, and ensures sufficient privacy safeguards, hence promoting user participation. The survey additionally discovered that users expressed

contentment with Telegram as a platform for delivering courses. According to Gyane (2021), Telegram enables users to record and save training materials for convenient access at any time. Discussion pages foster participant collaboration and engagement. Kechil et al. (2019) endorses Telegram as a versatile and user-friendly communication platform and program delivery system that facilitates the exchange of knowledge and input from participants.

Zoom simplifies the process of arranging and hosting meetings, creating both physical classrooms and an interactive virtual learning environment (Cirucci, 2023). According to Stefanile (2020), the usage of live chat and reaction emojis fosters a synchronous interactive environment, which enhances users' involvement, motivation, and enjoyment of the learning experience. Additional modalities, such as waiting periods, breakout rooms, and annotation tools, enhance program orientation (Andel et al., 2020) and enable small groups of participants to engage in targeted activities according to their individual needs and capabilities, while also receiving more personalized direction and feedback. Almarzooq et al. (2020) assert that Zoom facilitates social engagement through virtual talks. This may facilitate the intended objective of the e-coaching initiative, which is to assist students in participating in university social activities while enhancing their technical abilities to enhance academic achievement.

Validating requirements

The requirements validation step is intended to ensure that the suggested e-coaching program considers all requirements and can meet all expectations and needs gathered from various sources. Furthermore, the chosen coaching methodologies and communication instruments align with attaining the program's objectives and fulfilling expectations. The requirements validation procedure consisted of two distinct stages. Initially, the results from the students' survey and the faculty members' and HR staff's questionnaire were thoroughly analyzed through several inductively conducted reading rounds. The purpose was to identify any overlooked expectations and needs and calculate any extra data. Additionally, request viewpoints from coaching professionals and faculty members to verify the alignment among the gathered needs, the objectives and characteristics of the e-coaching program, and the chosen coaching methodologies and communication platforms.

The results of the requirements validation procedure revealed that expectations and needs have been adequately collected and retrieved from many sources, such as past analogous studies, the institution, and students, as well as expressed by instructors and human resources employees. Despite a few minor issues regarding integrating behavioural and cognitive coaching techniques, which require highly skilled coaches to guarantee effective execution, experts have approved the goals, features, coaching techniques, and communication tools of the proposed e-coaching program. It was also clarified that the coach should receive specialized training in implementing and utilizing both of these coaching methods. Concisely, the results of the requirements validation procedure demonstrate that the proposed e-coaching program exhibits promising potential in attaining its objectives.

CONCLUSION

In conclusion, this paper has explored the intricate relationship between technology and coaching within the educational sector, with a focus on the design of an e-coaching program for first-year students at Hail University, Saudi Arabia. By synthesizing insights from literature review, surveys, and interviews, key factors influencing the effectiveness of e-coaching initiatives have been identified.

The research methodology, involving data triangulation and systematic requirements collection, has provided a comprehensive understanding of program design needs and expectations. The proposed e-coaching program, informed by these findings, emphasizes social ability, context-consciousness, credibility, theoretical background, practical communication tools, and interactivity.

Moving forward, the strategic integration of technology into coaching practices must continue to evolve, addressing the dynamic needs of students and stakeholders. By aligning with organizational goals and stakeholder perspectives, e-coaching programs can effectively enhance student learning experiences and academic performance.

This study contributes practical insights for the development and implementation of tailored e-coaching programs in educational settings, facilitating the advancement of coaching practices in the digital age.

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