



Exploring the Alternative Training Options for A Level Learners in Uganda

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Abstract: The Higher School Certificate (HSC) or Advanced level in Uganda is a two-year program aimed at preparing students for higher education. However, the current system does not adequately equip graduates with the necessary 21st-century skills required in the workforce and for lifelong learning. There is a growing demand for these skills, and the current A' level system is falling short in meeting this demand. This study examines alternative training options for A' level learners in Uganda, considering the challenges posed by the traditional face-to-face classroom-based mode of education. The research follows a cross-sectional survey design with a mixed methods approach. The population includes stakeholders such as teachers, headteachers, students, parents, employers, and education officials, with a total of 6,343 respondents across the country. The study explores five potential alternatives: home schooling, open schooling, accelerated learning, blended learning, and differentiated A' level. The findings indicate that while home schooling is not a favored option, open schooling, accelerated learning, blended learning, and differentiated A' level are seen as valuable approaches by the majority of participants. These alternatives offer increased flexibility, personalized learning experiences, and enhanced accessibility, making them potential solutions to improve A' level education in Uganda. The study recommends adaptation of open schooling, accelerated learning programs, blended learning, differentiated education at A' level in Uganda. These changes can benefit academically challenged learners, improve student learning outcomes, and prepare students for the world of work and lifelong learning.

Keywords: 21 Century Skills, Home Schooling, Open Schooling, Accelerated Learning, Blended Learning and Differentiated Learning

1. Introduction

In Uganda, the education system begins with Early Childhood Development (ECD) for three years, followed by Primary School for seven years, then Lower Secondary Education for four years. After this, students can progress to the two-year Upper Secondary Education or A level section, which offers a menu of 34 principal subjects and three subsidiary subjects [35, 20]. An A level candidate is required to offer a maximum of three principal subjects, General Paper (subsidiary), and either Subsidiary Mathematics or Subsidiary Information Communication Technology [35, 30]. The main purpose of A level education is to educate individuals, prepare and qualify them for work in the economy, and integrate them

into society [40, 37].

Currently, the mode of training for A' level in Ugandan secondary schools is primarily face-to-face classroom-based [24]. Students attend classes in person, and teachers deliver lessons using a variety of instructional methods, including lectures, group discussions, and demonstrations [30]. In the classroom, teachers use textbooks, handouts, and other learning resources to support students' learning [45]. They also use formative assessments, such as quizzes and class assignments, to evaluate students' understanding and progress. At the end of the A' level, students are required to sit for national examinations, which determine their eligibility for admission into higher education institutions [26]. This mode of teaching and learning has a number of limitations including; the traditional face-to-face classroom-based mode of learning

may not be accessible to all learners, particularly those who live in remote or disadvantaged areas, or those who have disabilities; it is not flexible in terms of when and where learning takes place; does not provide personalized learning experiences; and the traditional face-to-face classroom-based learning can be costly in terms of infrastructure, staffing, and resources [44, 26].

However, with the current training option of the face-to-face, the completion rate of the Advanced level program in Uganda is low at only 5.6% [26, 45]. Additionally, Uganda faces significant challenges such as high unemployment rates, mismatches between skills and education, and a low Human Capital Index of only 38% [45, 31, 28]. The mode of training at A' level in Ugandan secondary schools may be a contributing factor to these challenges.

Furthermore, it is worth noting that during the COVID-19 pandemic, there were disruptions to the traditional classroom-based mode of training in Uganda, as in many other countries [45]. The Ugandan government implemented various measures, including school closures during this period. Such a predicament necessitated the use of other training options in the entire education system [45]. In addition, much as there have been changes in education technologies, the mode of teaching at A' level in Uganda has remained static since colonial times [39, 24, 22, 12]. According to Meyer and Norman (2020), alternative training options for A level learners could be important for promoting accessibility, equity, flexibility, personalization, cost-effectiveness, and innovation in education [24]. Accordingly, this study assessed the alternative training options for A level learners in Uganda.

The study was significant in that the outbreak of COVID-19 pandemic led to the closure of many schools, resulting in disruption to the traditional education system. However, alternative training options emerged as a solution to enable students to continue their education despite the disruption caused by the pandemic. These options provide students with greater flexibility in learning, allowing them to learn at their own pace, study at their convenience, and access materials from anywhere with an internet connection. Moreover, they are more cost-effective compared to traditional classroom-based learning, as there are no travel or accommodation expenses associated with attending a physical class. Alternative training options also provide personalized learning experiences, enabling students to receive feedback on their progress and adjust their learning strategies accordingly. Additionally, they increase access to technology, which is increasingly vital in today's world, allowing students to access a wide range of digital tools and resources to enhance their learning experience.

2. Literate Review

2.1. Theoretical Review

The study was guided by Social constructivism which is a theory of learning that emphasizes the role of social

interactions and cultural context in the development of knowledge and understanding. One of the most prominent proponents of social constructivism was the Russian psychologist Lev Vygotsky, whose ideas have had a significant impact on the field of education. Vygotsky's theory of social constructivism is based on the idea that learning is a social process that occurs through interaction with more knowledgeable others. In his view, individuals acquire new knowledge and skills by working collaboratively with others who have more experience and expertise in the relevant domain [43]. Vygotsky's theory also emphasizes the importance of cultural context in shaping the way that individuals learn and understand the world. He argued that culture provides the tools and symbols that individuals use to make sense of their experiences and that learning is a process of appropriation and internalization of these cultural tools [43].

One of the key concepts in Vygotsky's theory of social constructivism is the zone of proximal development (ZPD), which refers to the range of tasks that an individual can perform with assistance from a more knowledgeable other but cannot yet perform independently [43]. According to Vygotsky, learning occurs most effectively when individuals are challenged to perform tasks that are just beyond their current level of competence, with the guidance and support of a more knowledgeable other.

Vygotsky's theory of social constructivism has had a significant impact on the field of education, particularly in the areas of scaffolding and collaborative learning. Scaffolding refers to the support and guidance that more knowledgeable others provide to learners as they work on challenging tasks within their ZPD [44]. Collaborative learning involves the use of group work and other forms of social interaction to facilitate learning and problem-solving [44]. Overall, Vygotsky's theory of social constructivism emphasizes the importance of social interactions and cultural context in the development of knowledge and understanding. By understanding and applying his ideas, educators can help learners to acquire new knowledge and skills more effectively and efficiently.

Vygotsky's theory can be applied to a variety of educational approaches, such as home schooling, accelerated learning, blended learning, and differentiated learning. Home schooling allows for individualized instruction and increased social interaction between the parent and child, while accelerated learning provides opportunities for immersive, hands-on activities and collaborative group work. Blended learning combines traditional face-to-face instruction with online activities, providing flexibility and opportunities for both individualized and collaborative learning. Differentiated learning tailor's instruction to meet the unique needs of each student, promoting individualized instruction and social interaction among students.

In summary, Vygotsky's theory of social constructivism emphasizes the importance of social interaction and collaboration in the learning process, and has had a significant impact on education. Scaffolding and collaborative learning

are rooted in this theory, and it can be applied to various educational approaches that prioritize social interaction and cultural context in learning.

2.2. Empirical Review

Alternative training programmes considered in this study include among others; home schooling, open schooling, accelerated learning curriculum, blended learning and differential upper secondary.

2.2.1. Home Schooling

Home-schooling has now become one of the alternative education models that are in demand by families in various countries [32] including Uganda. Home-schooling is an educational practice that optimises the intelligence potential possessed by each individual. According to Fitriana (2016), home schooling is a learning system with an at-home approach and is popularized as an alternative education at the family level and places children as subjects of learning [9, 14]. Home schooling can be stated as an effective alternative education in developing children's potential. The direct output of home schooling is academic excellence, community builder and good character. Outcomes resulting from home schooling are that children can continue their education to a higher level, can learn independently, can learn from others, and participate in social activities [9].

Ripperger-Suhler's (2016) study indicates that home schoolers are not disadvantaged academically or with regard to social-emotional development or socialisation [36]. In South Africa, home schooling is growing phenomenally, and educational reasons and religious beliefs appear to be the most important reasons for home schooling in South Africa. Ray (2017) synthesised research on learner outcomes related to home schooling in areas of students' academic achievement, children's social, emotional, and psychological development, and the success of adults who were home educated [34]. Ray (2017) found that positive outcomes on a variety of variables are associated with home schooling [34]. This research intended to find out if some Ugandan parents had opted for home schooling as an alternative to mainstream A level education with an aim of borrowing some good lessons.

2.2.2. Open Schooling

Open Schooling (OS) is a flexible education system that allows learners to learn where and when they want, physically away from a school and a teacher [15]. It uses several teaching methods to support learning and has no age restrictions, the content of courses to be taken or the number of courses in which students must enrol [15]. Abrioux (2009) defines open schooling as "the physical separation of the school level learner from the teacher, and the use of unconventional teaching methodologies, and Information Communication Technologies (ICTs) to bridge the separation and provide the education and training" [1]. There is little doubt that OS can assist in dramatically improving access both by school-age children and by adults to high-quality secondary schooling, just as Open and Distance Learning (ODL) has already done at

the tertiary level for secondary school leavers and adults [15]. Accordingly, Open Schooling provides quality education for all due to its flexibility in place and pace of learning, flexible curriculum, self-learning material, media and ICT support, Personal Contact Programme (PCP), recognising and accommodating learners' preferred learning objectives and need for student support services that will maximise the individual's chances of success [1, 15].

Mhlanga (2009) adds that due to the openness of entry, care is taken to provide sufficient academic support to academically challenged learners as identified upon enrolment [25]. This may be through the provision of bridging courses or more face-to-face support, additional units or learner guides within existing courses, or more time to complete the programme [15]. As one of the available alternatives to mainstream A level education, this study would establish whether Open Schooling can be a viable option for A level education in Uganda.

2.2.3. Accelerated Learning Curriculum

Accelerated learning is a pedagogical approach that has evolved over time and is rooted in Howard Gardner's theory of multiple intelligences [10]. The approach emphasizes effective and deeper learning rather than simply increasing the speed of learning [7, 19]. Smith (2003) simplified the theory of multiple intelligences and proposed an accelerated learning cycle that includes four core elements and four general activities [38]. This model has been used in various educational contexts, including programs designed to help developing countries reach the Millennium Development Goals [23].

Randall, O'Donnell and Botha (2020) examined the impact of the Accelerated Learning Programme for out-of-school girls on student learning outcomes and traditional school enrolment [33]. They found that the majority of girls advanced through the levels as expected (80%) and, on average, improved their numeracy and literacy skills. This study suggests that an accelerated learning curriculum could be a viable alternative to mainstream A level education in Uganda.

2.2.4. Blended Learning

Blended learning, which combines teaching methods from both face-to-face and online learning, has been established as a highly effective instructional model for addressing the challenges of student achievement, limited resources, and the expectations of 21st-century learners [4]. Blended learning is also known as 'hybrid learning' or the 'flipped classroom,' and it involves using a variety of learning resources to deliver a combination of online and classroom-based interventions to support learning [4, 27].

Blended learning is a flexible learning strategy that integrates innovative and technological advances of online learning with the interaction and participation of traditional classroom learning [27]. Valiathan (2002) defines blended learning as learning that mixes various event-based activities, including face-to-face classrooms, live e-learning, and self-paced learning. By providing several online options in addition to traditional classroom training, students are able to

learn more [42, 4].

Mondal *et al.* (2019) investigated the effect of a blended learning strategy on critical thinking, problem-solving, science process skills, and science achievement among secondary school students [27]. They found that effectively blending online learning with face-to-face instruction can improve higher-order thinking and science learning among secondary school students. A blended learning strategy can be considered one of the new initiatives of pedagogical approaches for integrating ICT into science education. This research aims to explore the effectiveness of blended learning in enhancing the implementation of the A level curriculum and to identify appropriate strategies for achieving this goal.

2.2.5. Differentiated Upper Secondary

There are different pathways for students after completing Upper Secondary education in various countries. In Bulgaria, upper secondary education is stratified into general and vocational schools, with further differentiation within each track, but all schools grant access to higher education [5]. Norway's Upper Secondary education is competence-based, with vocational and general education differentiated, and all students must complete Common Core Subjects and Core Curriculum Options [6]. In Turkey, upper secondary education is differentiated between academic and vocational, and vocational education is offered in various fields [5]. In Finland, Upper Secondary is differentiated into General Upper Secondary and Vocational Upper Secondary, with the former aiming to provide students with knowledge and skills necessary for further study and working life and the latter aiming to prepare students for vocational expertise [13, 19].

However, the Upper Secondary education system in Uganda is not effectively meeting the needs of students, as it is not differentiated to cater to either academic or industrial talent, leading to a waste of time, money, and talent [2]. Thus, a study was conducted in Uganda to assess the available and alternative training options for A level learners based on the goals and priorities of the country currently and in the future, and to establish whether there exist gaps in the Uganda A level curriculum regarding current and future society expectations. The study covered the four regions of Uganda and involved head teachers, A level teachers, students, registrars, lecturers, policymakers, examining bodies, and students from universities and tertiary institutions.

3. Methodology

3.1. Research Design

The study followed a cross-sectional survey design and employed the mixed methods approach. The use of mixed methods strengthened the findings because they were drawn from both qualitative and quantitative research, thus, minimizing the limitations of both approaches [8].

3.2. Population of the Study

According to the study, the population included a diverse

group of individuals who have a stake in A-level education in Uganda. These individuals included registrars, lecturers, human resource officers, members of the Sector Skills Council, UNEB test developers, DIT assessors, UBTEB Learning Area Heads, members of the private sector, A-level leavers, parents or sponsors, A-level students, teachers, and secondary school head teachers. The total population size was 505,327, and it was determined through the use of the Uganda Bureau of Statistics (UBOS) statistical abstracts [41].

3.3. Sample Size Determination

According to Krejcie and Morgan's (1970) table, a quantitative study selected a sample consisting of 8 universities and 20 colleges [17]. The study chose 97 districts out of a total of 135, and from each district, two government A level secondary schools and one private A level secondary school were purposively selected. The study further chose the randomly head teachers from each school as part of the sample, as well as three A' level teachers (one from science, humanities, and vocational subject areas) from each school. This resulted in a total sample size of 291 head teachers and 1,746 A' level teachers.

For the qualitative study, the sample size was determined based on saturation levels, and data collection stopped once categories/themes were saturated. The study gathered data from a total of 6,343 respondents across all four regions of Uganda (Central, Northern, Eastern, and Western), which were split into 16 zones.

3.4. Sampling Techniques

The sampling techniques and tools used for data collection in a study involving A-level education in Uganda are outlined here. Systematic sampling was used for selecting 291 head teachers and 1,746 teachers, while convenience sampling was used for selecting 1,380 S6 students, 120 university students, and 300 tertiary institution students for focus group discussions. Purposive sampling was used for selecting eight university lecturers, 20 tertiary institution registrars, 60 tertiary institution lecturers, 552 A-level leavers, six human resource officers, five Sector Skills Council members, 250 members of the private sector, 15 UNEB test developers, five DIT Assessors, five UBTEB Learning Area Heads, and five UNATU members for interviews. For university and tertiary institution students, systematic sampling was used for selecting 384 and 383 respondents, respectively, for questionnaire surveys. Convenience sampling was used for selecting 184 parents for interviews. A total of 600 stakeholders were consulted. The sampling techniques were chosen to minimize the need for extensive randomization procedures, while the tools used were questionnaires and interview and focus group discussion guides.

3.5. Validity and Reliability

The study employed questionnaires that we designed and evaluated and were reviewed by three independent educational research specialists to ensure content validity. The

content validity index for both questionnaires exceeded the recommended threshold of 0.7, indicating good content validity [29]. To establish the reliability of the research instruments, a pilot study was conducted in ten secondary schools across five districts, and a test-retest pilot study was carried out in two schools outside the data collection program. The Cronbach Alpha reliability coefficient formula and SPSS software were utilized to determine reliability coefficients, which were 0.85 and 0.89 for the two questionnaires, indicating high data reliability. The interview and FGD guides were also piloted in six districts, and adjustments were made based on results discussed by the NCDC R&E working group to ensure instrument reliability.

3.6. Data Analysis

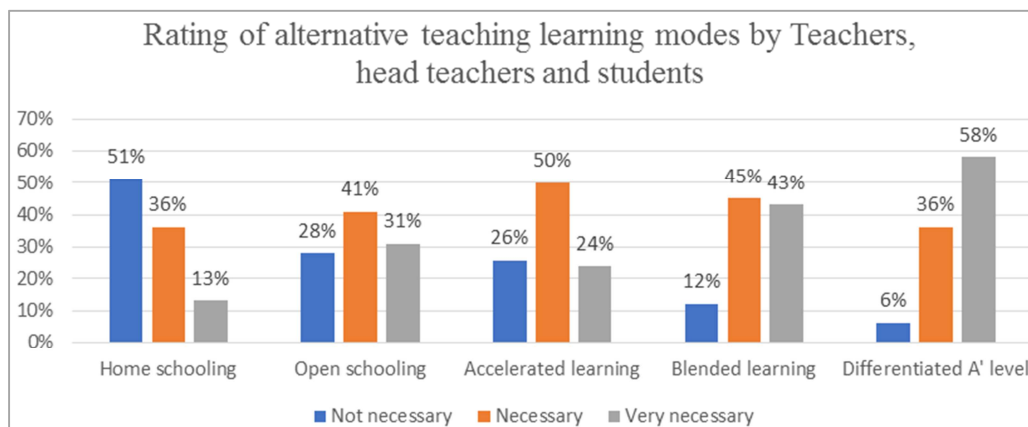
In this study, the authors employed the Statistical Package for Social Science (SPSS) version 22 to analyze quantitative data using descriptive statistics. This approach involved summarizing sample data through tables and graphs that presented percentages, frequencies, measures of central tendency (e. g., mean, minimum, maximum), and measures of dispersion (e. g., standard deviation). This is a common method used in quantitative research as it provides a clear overview of the data and is consistent with the

recommendations of Kothari (2005) and Amin (2005) that emphasize its significance in quantitative data analysis [16, 3].

The study employed qualitative data collection methods, including interviews and focus group discussions, and analyzed the data using content analysis. The researchers transcribed the responses, interpreted them, and with the assistance of other researchers, identified major themes and categories. The qualitative data was presented in line with the study objectives and complemented the quantitative data to validate the findings. The results were presented using quotes or paraphrases with consent from the participants. The content analysis approach used in the study is consistent with Kothari's (2005) recommendation for effectively extracting relevant information from qualitative data [16].

4. Findings and Discussion

The research aimed to identify different options for training based on the goals and priorities of the country. Various stakeholders were asked questions on different issues to determine available alternatives. Teachers, head teachers, and university students were presented with five different modes of study as potential alternatives for A-level education. The responses of these stakeholders are presented in Figure 1.



Source: Field data, 2022

Figure 1. Rating of alternative teaching learning modes by teachers, head teachers and students.

According to the data shown in Figure 1, it was found that around 51% of the participants did not consider home schooling to be the best option for A' level education in Uganda. In contrast, South Africa has seen a significant increase in home schooling, driven by educational and religious reasons. Research by Ray (2017) suggests that home schooling has positive outcomes on academic achievement, social and emotional development, and the success of adults who were home educated [34].

Moreover, a majority of the respondents, which included 72%, 74%, 88%, and 94% of the participants, expressed that open schooling, accelerated learning, blended learning, and differentiated A' level, respectively, were necessary and could be considered as alternative approaches for A' level education in Uganda. Therefore, it can be inferred that differentiated A'

level, open schooling, accelerated learning, and blended learning could be adopted as viable options for A' level education in Uganda based on the participants' responses.

In tandem, with the above findings, a parent interviewed said "I believe that differentiated A' level education would be a great option for my child. It's important for them to have the flexibility to learn at their own pace and explore subjects that they are passionate about." Still in agreement an Employer interviewed said "I think differentiated A' level education is a great option for preparing students for the workforce. It allows them to specialize in areas that are in demand in the job market, giving them a competitive edge when they enter the workforce." According to other interviews conducted with various education stakeholders, differentiated A' level and blended learning are important options for learners. For

instance, a UNEB test developer highlighted the benefits of differentiated A' level, stating that it promotes cognitive development through the academic aspect and psychomotor and affective skills through the vocational aspect. Similarly, a member of UNATU emphasized that differentiated A' level enables learners to acquire both knowledge and practical skills. This implies that differentiated education may provide students with the flexibility to learn at their own pace and explore subjects they are passionate about. Similarly, Norway and Finland have already differentiated their Upper Secondary education into vocational and general education [6, 13].

Further, in an interview a Headteacher said *"Open schooling could be a game-changer for A' level education in Uganda. It allows students to access quality education from the comfort of their homes and eliminates some of the challenges that come with traditional schooling, such as transportation and overcrowded classrooms."* This implies that Open schooling could make quality education more accessible and eliminate some of the challenges associated with traditional schooling, such as transportation and overcrowded classrooms. This is supported by the view that open schooling provides quality education for all due to its flexibility, self-learning material, media and ICT support, and personalised student support services [14]. Mhlanga (2009) also adds that open schooling ensures academic support is provided for students who require it [25]. Additionally, a majority of respondents believed that accelerated learning, which aims to advance learning levels quickly, was necessary.

As for accelerated learning, an A' level alumni said *"Accelerated learning would have been a great option for me when I was pursuing my A' levels. It would have allowed me to complete my studies in a shorter amount of time and it would have given me the opportunity to pursue other interests after graduation."* This implies that accelerated learning could offer students the opportunity to complete their studies in a shorter amount of time and pursue other interests after graduation. Research by Randall et al. (2020) found that an Accelerated Learning Programme for out-of-school girls improved numeracy and literacy skills and traditional school enrolment [33].

Relatedly, a Local leader on blended learning said *"Blended learning is a great way to ensure that students in rural areas have access to quality education. It combines traditional classroom learning with online resources, making it easier for students to access the latest educational materials."* According to other interviews conducted with various education stakeholders, Blended learning is also seen as valuable by a UNEB test developer who believes that integrating ICT in learning and teaching is crucial in today's dynamic world, as it helps to solve major societal challenges. This implies that Blended learning, which combines traditional classroom learning with online resources, may be particularly useful in providing quality education to students in rural areas. Relatedly, Mondal et al. (2019) found that blended learning improved higher-order thinking and science learning among secondary school students [27].

5. Conclusion, Contribution of the Study and Recommendations

5.1. Conclusion

Based on the findings of the study, unlike the traditional face-to-face classroom-based learning currently being used at A' level in Uganda, alternative training options, such as open schooling, accelerated learning, blended learning, and differentiated A level, can enhance accessibility and equity in education by providing flexible learning opportunities that allow learners to study at their own pace and from any location with an internet connection. These options can also offer personalized learning experiences that improve engagement and motivation, reduce costs, and drive innovation in education. Ultimately, alternative training options can lead to better learning outcomes and prepare learners for the digital age. On this basis, this study concludes that there is a need for a more flexible and personalized approach to A level education in Uganda. Majority of the respondents believe that traditional home-schooling is not necessary at this level, but open schooling, accelerated learning, blended learning, and differentiated A level are essential for improving the quality of education. Majority of the respondents believe that traditional home-schooling is not necessary because formal schooling is widely available in Uganda, with many government-funded and private schools operating across the country. This may have led many respondents to believe that traditional home-schooling is not necessary, as there are already established institutions that provide education.

The study suggests that adopting differentiated A level could help address the diverse learning needs of students and ensure that each student receives personalized attention and support. Additionally, incorporating open, accelerated, and blended learning approaches can help improve access to education and enhance the effectiveness of teaching and learning. Overall, the study highlights the importance of flexibility and personalization in A level education in Uganda, and the need for the education system to adapt to the changing needs and preferences of students.

5.2. Contribution of the Study

From a theoretical perspective, the study provides insights into the effectiveness of alternative training options in enhancing academic achievement and reducing disparities in education. The study also contributes to the broader literature on education policy and the implementation of alternative education programs.

From a practical perspective, the study informs policymakers and educators on the design and implementation of alternative training options for A' Level learners in Uganda. It helps to identify the best practices for delivering quality education to students who may face barriers to learning, such as financial constraints or limited access to educational resources.

5.3. Recommendations

According to a study on improving the education system in Uganda, several recommendations were made. Firstly, home schooling is worth exploring further in Uganda, although it may not be necessary at the A level. Open schooling, which provides flexible learning options and self-learning materials, should also be adopted to benefit academically challenged learners. Accelerated learning programs and blended learning, which combines face-to-face and online learning, were also deemed necessary to improve learning outcomes and higher-order thinking in science. Additionally, differentiated A level education, as seen in Norway and Finland, should be adopted to give learners the option to prepare for the world of work or an academic pathway. Lastly, it is recommended that further exploration of these options be undertaken.

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