



Management of Differentiated Curriculum: Foundations and Implementing Strategies

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Abstract. Differentiation in education refers to tailoring instructional processes by considering each learner's individual and age-related traits, ensuring nuances and particularisations in design, organization, implementation, and regulation (Bocoş, coord., et al., 2021a). Essentially, it is a proactive strategy used by educators to meet diverse learning needs through adapting content, processes, products, the learning environment, and assessments (Tomlinson, 2022). Recent studies highlight that differentiation is among the most effective approaches for addressing the growing diversity within schools, including the increasing number of students with special educational needs, as well as cultural, linguistic, and socio-economic differences. (Organisation for Economic Co-operation and Development (OECD), 2023; Pozas et al., 2020).

Differentiation in education can be implemented through differentiation of instruction, which involves adjusting the structure, content, and organization of teaching activities, learning methods, assessment strategies, and educational relationships to match students' psychophysical and individual characteristics. This approach aims to meet their educational needs and help them reach their maximum cognitive and developmental potential (Bocoş, coord., et al., 2021a). Recent literature supports this view, highlighting that instruction differentiation is not a one-time practice but a widely accepted pedagogical philosophy that centers on the learner. (Tomlinson & Imbeau, 2023; Gheysens et al., 2023).

Keywords: Differentiated Curriculum, Management of Differentiated Curriculum, Curriculum Management.

1 The theoretical and conceptual foundations

1.1 The concept of differentiated curriculum

The differentiated curriculum represents a coherent framework of learning pathways and experiences, meticulously designed and flexibly organised, to accommodate varying levels of understanding, educational needs, learning styles, interests, work rhythms, attitudinal profiles, and the diverse potential of learners (Tomlinson, 2022). Fundamentally, the differentiated curriculum is predicated on selecting, structuring, and organizing the learning content, alongside the strategic choice of instructional and educational

methods and assessment strategies, as well as characteristics of the learning environment and situations. The primary objective is to enhance learning experiences by adapting the instructional-educational process to the psychological and individual particularities of each learner, thereby ensuring personalized progress. Consequently, it is appropriate to refer to this as a differentiated and personalized curriculum (Creţu, 1998). This approach offers the opportunity to implement diverse school and educational pathways that enhance learners' motivation and support individual development and personal fulfilment. Such flexibility in the educational offer involves structuring education to meet the specific needs of each student, who maintains individual learning objectives, rather than providing a uniform education for all.

The differentiated curriculum constitutes a highly intricate systemic response to the challenge of educational diversity (Organisation for Economic Co-operation and Development (OECD), 2023; Pozas et al., 2020). It acknowledges the subjectivity of each learner, the heterogeneity of psychosocial groups, and the fact that learners do not constitute a homogeneous group. As a result, uniform teaching cannot guarantee both equity and quality.

1.2 Psychopedagogical foundations of the differentiated curriculum

Curriculum differentiation depends on the combined input from various psychopedagogical theories.

Howard Gardner's theory of multiple intelligences suggests that learners have diverse cognitive profiles, requiring varied approaches in teaching, learning, and assessment (Gardner, 2006). Recent studies show that incorporating this theory into curriculum development can enhance motivation, engagement, and academic success, especially when integrated into inclusive teaching strategies (Attwood, 2022; Cavas & Cavas, 2020; Morgan, 2021).

The zone of proximal development, a concept coined by Lev Vygotsky within the sociocultural theory of learning, refers to the idea that each learner possesses a specific developmental potential that can be activated through appropriate pedagogical support (Vygotsky, 1978). The author introduced the term 'zone/level of proximal development' to describe the immediate, proximal development zone of an individual, situated just above their current capabilities; it is defined as the difference or distance between the current level and the potential level of development. The current level describes what the child can accomplish independently, while the potential level pertains to what the child can achieve with adult guidance or through collaboration with peers, even when the tasks exceed the child's current developmental stage (Bocoş, ed., et al., 2021c). The concept of scaffolding, derived from Vygotsky's theory, entails a metaphorical 'scaffold' constructed considering the learner's current level and their capacity to progress with the assistance of an educator. On this scaffold, the learner gradually ascends toward higher levels of understanding. With the support of the scaffold and adult guidance, the learner progressively develops their skills, as well as their cognitive and metacognitive abilities. Over time, the scaffold can be gradually removed, enabling the learner to perform independently the activities initially carried out under the educa-

tor's supervision (Bocoş, ed., et al., 2021b). This conceptual framework has been expanded in contemporary literature to include support provided via digital tools and adaptive learning platforms (Zuo et al., 2023).

Jerome Bruner's (1961) constructivist theory of discovery learning posits that individuals play a central role in the learning process, with guidance from the educator or instructor. According to Bruner, learners achieve a deeper understanding and improved retention of knowledge when actively engaged in exploration and sense-making, discovering concepts independently rather than passively receiving pre-packaged information. He argued that this approach fosters active, logical, and critical thinking, thereby enhancing comprehension and memory retention.

Benjamin Bloom's (1956) taxonomic model, as well as the revised taxonomy by Benjamin Bloom (Anderson & Krathwohl, 2001), offers a theoretical framework and tools for categorizing and diversifying learning tasks across various levels of cognitive complexity, thereby supporting educators and practitioners.

These theoretical foundations constitute essential landmarks, recognised and utilised in recent literature to design a coherent, inclusive, and equitable differentiated curriculum.

1.3 Guiding principles of differentiated curriculum management

Curriculum management / Management of the curriculum is a disciplinary domain, a component of educational management, a subsystem of it, and, at the same time, an expression of the scientific aspect of the concept of educational management. In a broad sense, curriculum management encompasses the entire goal of curriculum theory. This concept expresses the scientific component intrinsic to the management paradigm. Narrowly defined, curriculum management pertains to the systematic aggregation of administrative and pedagogical elements involved in the three interdependent processes through which the curriculum is realized: development, implementation, and evaluation. A functional and operational delineation of curriculum management regards it as an active, interactive process rooted in a coherent and unified set of principles, functions, norms, strategies, and methodological and procedural systems. These are designed, integrated, and contextualized within the curriculum process, specifically in the phases of design/(re)development, implementation, and evaluation, to ensure the attainment of high standards aligned with the curricular aims across various degrees of generality. This approach involves multiple decision-making entities distributed across interconnected hierarchical levels, resulting in distinct competencies and responsibilities at the strategic, tactical, and operational tiers of educational governance (Bocoş & Chiş, 2013). Consequently, effective curriculum management encompasses not only the adaptation of content and pedagogical methods but also the reconfiguration of roles among involved actors and the institutional contexts in which education is conducted.

The management of a differentiated curriculum is:

- a complex and layered field because it involves multiple interdependent dimensions simultaneously, such as differentiation through content, process, product, learning environment, and assessment, along with diverse didactic contexts, all of which interact and influence each other;

- a dynamic field that continually adapts to the evolving educational needs of learners, advancements in technology and digital areas, social changes, and educational policies;
- an interdisciplinary field that relies on the combined insights of various disciplines – psychology, education sciences, sociology, educational management, information and communication technology, and neuroscience—making the development of curriculum differentiation theory and practice possible.

Therefore, managing a differentiated curriculum goes beyond merely applying specific teaching techniques; it entails a professional, institutional, and social commitment to diversity, equity, and inclusion as essential to fairness and educational quality. Achieving this requires shifts in mindset and attitudes, adopting a systemic approach, challenging prejudices and harmful stereotypes, and embracing genuine values, with inclusion being a key part.

The efficient management of the differentiated curriculum is guided by a set of fundamental principles:

- The principle of equity – every learner is entitled to quality education adapted to their needs. Equity isn't about providing identical resources to everyone, but about creating the conditions that allow each student to reach their full potential, regardless of their background, personal traits, or social and cultural environment (Organization for Economic Co-operation and Development (OECD), 2023).
- The principle of flexibility – curriculum structures should be adaptable to context without losing coherence. It covers content, teaching strategies, learning environment organization, and assessment methods, allowing educational pathways to be tailored to each learner's needs and pace.
- The principle of inclusion – differentiation is not about separating students but about integrating all learners into genuine learning communities. In these communities, each learner's uniqueness is acknowledged and seen as a valuable pedagogical resource. Inclusion means fighting all forms of exclusion, marginalisation, and stigmatisation, and fostering an educational environment where diversity is appreciated as a strength, not a problem to be handled (Organisation for Economic Co-operation and Development (OECD), 2023).
- The principle of collaboration – differentiation demands collective effort rather than individual work. It encompasses cooperation among educators, between educators and students, between schools and families, between educational institutions and the community, and among learners themselves. This collaboration takes many forms, including cooperative learning and mentoring in both real and virtual settings.
- The principle of continuous assessment – curricular adaptations should be guided by systematically and objectively collected data, using ongoing formative assessments, and regularly reviewed based on each learner's individual progress. Assessment is not an end purpose but a means to understand and manage the differentiation process (Tomlinson & Imbeau, 2023).

2 Strategies for differentiated curriculum management

2.1 Content differentiation

Content differentiation is a method traditionally applied in curriculum management. It involves adapting instructional-educational content, materials, and information that learners are to assimilate, both in terms of quantity (the volume of knowledge) and quality (the nature of the knowledge, its complexity, depth, difficulty level, practical methods of implementing internal didactic transposition, necessary operationalisations, cognitive correlations and interrelations, adaptation to the speed, rhythm, and learning style, and accessible levels of cognitive process functionality). This may involve strategies such as simplifying or deepening texts, using alternative resources (visual, audio, interactive), providing additional information and tasks for advanced learners or support materials for those with learning difficulties or slower learning paces. Thus, managing differentiation through content requires a deep understanding of each category of learners and even of each individual learner, including their level of preparation, to make decisions regarding individual educational pathways and to meticulously plan the necessary teaching resources (Langelaan et al., 2024; Meutstege et al., 2023).

To achieve content differentiation, it is proposed that educational and instructional materials are grounded in underlying values, considering that content is not neutral; rather, it reflects selections, organizations, and hierarchies constructed in accordance with human knowledge values. These encompass and interrelate the following three components: conceptual-theoretical or cognitive, procedural-practical or applicative, and attitudinal-behavioral. Consequently, during the process of internal didactic transposition, three types of content, each possessing distinct instrumental, informational, and formative attributes, may be utilized, with each corresponding to specific categories of knowledge.

- 1) cognitive (conceptual) contents and theoretical knowledge;
- 2) action-oriented content and practical knowledge;
- 3) attitudinal/affective-attitudinal (referential) contents and affective knowledge.

Depending on how these three types of content are valued and, implicitly, on the nature of the learning tasks, knowledge can be either theoretical or practical – more precisely, mainly theoretical or mainly practical. Regardless of its form, knowledge requires thinking operations that give it an active, critical, process-oriented, and transformative nature. However, rational knowledge also coexists with affective knowledge and an emotional understanding of the surrounding reality. (Bocoş & Chiş, 2013).

2.2 Process differentiation

Process differentiation of the curriculum explains how procedural aspects are emphasized, focusing on the methods learners use to decode, understand, and internalize content during learning.

In managing process differentiation, various procedural aspects involved in learning are taken into account. These include characteristics of communicative processes (both intra- and interpersonal communication), retrospective and prospective reflective pro-

cesses, sensory cognitive mental processes (such as sensations, perceptions, and representations), higher cognitive mental processes (including thinking, memory, and imagination), affective processes (such as emotions, feelings, and passions), and processes like will, which is a complex mental regulation mechanism.

At the micro-educational level, when creating learning pathways and constructive learning situations tailored to learners' unique traits to generate positive and meaningful learning experiences, educators can employ a range of diversified and adapted didactic strategies. These strategies are based on a varied methodology customized to learners' specifics and designed to foster learning. They include differentiated approaches to task resolution by adjusting the complexity and diversity of didactic re-sources used and involving procedural aspects in distinctive ways (Bocoş & Chiş, 2013). Other strategies encompass organizing activities by level or within homogeneous groups, designing open tasks with multiple resolution levels, implementing metacognitive strategies, facilitating inter-collegial mentoring, utilizing technology to individualize and personalize learning pathways, and engaging in research-based learning.

In the management of differentiated curriculum, a perspective gaining ground in the field's literature is the use of metacognitive strategies. This involves the educator supporting each learner to achieve self-control, self-regulation, and the optimisation of cognitive functioning and learning, through:

- reflecting on one's own cognition as a cognitive tool for organising, planning, structuring, regulating, improving, and making cognitive processes more efficient;
- gaining knowledge regarding one's own cognitive activity, how information is processed and interpreted, how knowledge is formed, and how understanding is constructed;
- identifying of one's own metacognitive profile;
- developing a personalised metacognitive repertoire, composed of metacognitive knowledge, metacognitive strategies, and metacognitive experiences – as fundamental components of metacognition (Flavell, 1979);
- creating and developing metacognitive skills (planning competence; monitoring competence; self-regulation competence; self-evaluation competence; transfer competence).

Frequently, in educational practice, learners develop their metacognitive skills implicitly, which diminishes the efficiency of resource utilization and learning (Dignath, C., & Veenman, 2021). Metacognition is teachable; therefore, it is both appropriate and essential to train learners in metacognition. Educators must prioritize explicit and differentiated instruction of metacognitions (Dignath, C., & Veenman, 2021; Stan-ton, et al., 2021) and actively engage learners in diverse learning scenarios, enabling them to:

- explicitly acquire metacognitive knowledge, to learn why, when, and how to use it for managing cognitive activity;
- explicitly acquire metacognitive strategies (planning, monitoring, self-evaluation, self-regulation, metacognitive reflection, transfer) through the use and adaptation of metacognitive knowledge to ensure the management of one's own mental activity and the regulation of cognitive activity;

- benefit from a variety of metacognitive experiences, which they should become aware of in relation to the tasks at hand;
- transfer the metacognitive knowledge acquired in specific situations to other situations and contexts.

The educators' concern for the development of metacognitive skills and competencies is not an isolated, occasional, or unsystematic one; on the contrary, it must be viewed systemically and integrated into the entire curriculum project, as a fully embraced didactic philosophy.

2.3 Product differentiation

Product differentiation involves recognizing the value of various physical, digital, or ideational products created by learners during the curriculum. These products, which stem from the educational activities learners participate in, showcase their understanding, skills, and achievements. As learners develop different products, they apply their knowledge, practice, and evolve their skills, with these outputs serving as evidence of their readiness and skill development. Such products can be tailored to individual characteristics, supporting improved learning outcomes and greater satisfaction with the educational process (AM et al., 2023; Liou et al., 2023). The same competency can be expressed through a variety of formats, including drawings, worksheets, re-ports, essays, oral presentations, practical demonstrations, projects, software, animations, tutorials, portfolios, or e-portfolios.

The classification of products created by students can be carried out according to several complementary criteria, among which we mention and exemplify the most common ones. At the same time, we clarified that these classifications are not mutually exclusive, and a single product may be categorized into multiple categories simultaneously, each defined by different criteria. For example, a tutorial may be classified concurrently as follows: a digital material product (criterion a), a digital product (criterion b), a creative product (criterion c), a linguistic product in the mother tongue or foreign languages (criterion d), an interdisciplinary product (criterion e), and a product of independent activity (criterion f). Consequently, the most frequently used criteria for classifying student products are:

- a) the nature of the products – a.1.) material products, which have a concrete existence, are perceptible through the senses and can be: a.1.1.) physical material products – drawings, artistic works, crafted objects, models, portfolios; a.1.2.) digital material products – software, animations, tutorials, digital presentations, videos, clips, websites; a.2.) ideational products, which exist only in the mental/symbolic realm – ideas, solutions, theories, mental schemes, value judgments, reasoning;
- b) support/environment of realizing the products – b.1.) physical/written products – on paper, in a notebook, on a board; b.2.) mental products – reflections, mental calculations, mental connections; b.3) digital products – soft-ware, tutorials, animations, PowerPoint presentations, videos, websites;

- c) the degree of originality and creativity – c.1.) reproductive products, in which the learner reproduces, applies, organises, processes, or synthesises the acquisitions they possess – summaries, fact sheets, reproductive exercises; c.2.) creative products, which involve originality, creativity, personal contribution, added value, innovation – original solutions to problems, artistic works, models, software, tutorials;
- d) the learning contents – d.1.) artistic contents (artistic products – drawings, paintings, sculptures); d.2.) linguistic contents (linguistic products – verbal responses, worksheets, essays, reports, compositions, oral presentations etc., which, based on the language criterion, can be: d.2.1.) linguistic products in the mother tongue; d.2.2.) linguistic products in foreign languages);
- e) The degree of curricular integration – e.1.) Monodisciplinary products – literary essays, chemical experiments, geometry problems; e.2.) Interdisciplinary products – projects on climate change (integrating geography, chemistry, biology); tutorials for chemical experiments (integrating chemistry, English, informatics); e.3.) Transdisciplinary products – school layout plans (integrating mathematics, arts, civic education, geography); ecological awareness campaigns (integrating sciences, Romanian language, arts, information and communication technology);
- f) The skills – f.1.) written linguistic products involving writing abilities – essays, compositions, reports, journals; f.2.) calculus products that involve computational skills – calculations, mathematical exercises, problems, statistics; f.3.) products that require practical skills – objects, models, installations, technical products; f.4.) intellectual activity products that require intellectual skills – logical schemes, conceptual maps, analyses, syntheses; f.5.) products resulting from independent activity that make use of independent activity skills – reading sheets; individual projects, portfolios, products of systematic observation activity, products of technical activity, products of exploration activity, products of research activity.

By analyzing students' activities, we can assess their knowledge, skills, practical abilities, competency development, psychological traits (such as intelligence, creativity, aptitudes, and emotional balance), learning progress, interest and motivation, as well as their responsibility in task completion.

2.4 Learning environment differentiation

Learning environment differentiation refers to the strategic efforts through which the various physical/material, spatial, temporal, psycho-social, and procedural/informational coordinates that significantly influencing the course of learning processes are valorized, modeled, and adapted. Fundamentally, learning environment differentiation involves diversifying and adjusting, from a systemic perspective, the set of structural and functional elements comprising the learning environment, both as an educational and physical space, to ensure its efficacy. These elements, which may be natural or

anthropogenic, operate and interact in a complementary and convergent manner to facilitate and optimize the learning process, thereby creating an ideal space for learning and development (Rusticus et al., 2023).

In the management of learning environment differentiation, various components can be valorized, diversified, and adapted. These components are interconnected, interdependent, and tailored to the specific needs of learners. They can be classified as follows:

- a) Physical/material components of the educational space, which need to be arranged ergonomically, in a flexible and reconfigurable manner, with individual and group work areas, and accessible resources:
 - furniture (benches, chairs, lectern, storage cabinets);
 - teaching resources (desks, interactive whiteboards, visual materials such as maps, posters, and wall displays; books; technological re-sources including laptops, computers, and networks; and digital re-sources like educational software, learning platforms, tutorials, videos, animations, applications, simulations, and educational games);
 - environmental conditions: proper and consistent lighting (natural or artificial), air quality, temperature, humidity, noise levels;
 - hygiene measures: daily and routine cleaning, disinfection, ventilation, and waste management;
- b) Human/psycho-social component:
 - educational actors: the learners and educators, between whom didactic communication occurs.
 - the educational climate, or learning environment, describes the psycho-social and cultural conditions where teaching happens, encompassing several interconnected dimensions.
 - the system of promoted values – the principles that underpin the culture of the class and the educational institution;
 - the relational, social, affective, intellectual, cultural, and moral atmosphere that characterizes teaching activities:
 - relational climate – the quality of relationships between educator and learner and among learners;
 - social climate – group cohesion, collaboration, and a sense of belonging within the class community;
 - affective climate – emotional safety, empathy, acceptance, and respect;
 - intellectual climate – stimulation of critical thinking, creativity, and intellectual curiosity;
 - cultural climate – valuing cultural, linguistic, and ethnic diversity;
 - moral climate – promoting ethical values, responsibility, justice, and fairness;
 - the motivational climate encompasses valuing effort, individual progress, curiosity, the work atmosphere, the level of involvement, responsibility, and self-responsibility within the learning process;

- the set of behavioral norms – clear standards that are negotiated and accepted by all participants in the educational act;
- the balance between individual and group activities, signifying a harmony between autonomous and collaborative learning;
- the relationship between cooperation and competition, fostering healthy competition and genuine collaboration;
- the democratic or non-democratic nature of educational activities, which pertains to the degree of participation, involvement, responsibility, self-responsibility, autonomy, and co-decision granted to learners within the learning process;
- the existence or absence of a genuine partnership between educators and learners, reflecting the quality of the pedagogical relationship and the level of student involvement in planning activities;
- the educator’s didactic style, including the predominant pedagogical approach, flexibility, and capacity to adapt to the diversity of students;
- the type of authority exercised – whether democratic, authoritarian, or permissive authority;
- the cognitive and non-cognitive behaviours of learners in both school and extracurricular contexts – motivation, attitudes, values, and learning strategies;
- fostering a culture of inclusion, understood as a system of values, ways of thinking and acting that support inclusion, encompassing shared vision, values, policies, and inclusive practices within the school and educational community.

These elements are relevant for the management of curricular differentiation and contribute to fostering a positive climate across all these dimensions, a climate that represents a prerequisite for the effective functioning of differentiation (Goagoses et al., 2024; Hawkins et al., 2023). Consequently, to effectively leverage the characteristics of the educational climate for differentiation, it is essential to establish and promote positive, harmonious, stimulating, engaging, and secure learning environments. Such environments should facilitate the full expression and involvement (cognitive, affective, and psychomotor) of all learners in teaching activities, including reflection, thinking, questioning, idea expression, sharing experiences and feelings, proposing action strategies, and becoming aware of and articulating cognitive dysfunctions and learning difficulties. This approach encourages cognitive, non-cognitive, and meta-cognitive efforts and promotes active, interactive participation in comprehensive and stimulating learning processes. In such positive learning environments, learners are afforded opportunities to exercise their freedom of expression, thereby creating the conditions necessary to value and empower them as active participants in their own development and growth.

c) Procedural/informational and normative-regulatory component:

- activities schedule;
- official curriculum documents (framework plans, school programmes, methodologies, regulations);

- normative-regulatory components (official norms and regulations, official information made available to all educational agents).

The multitude and diversity of the structural and functional elements of the learning environment significantly influence the effectiveness of differentiation. The management of the learning environment, which involves integrating and adapting these elements to the individual characteristics of learners, constitutes essential support for implementing the differentiated curriculum and enhancing learning efficiency.

2.5 Assessment differentiation

Differentiated assessment is a fundamental dimension of the differentiated curriculum, closely connected to other types of differentiation such as content, process, product, and learning environment (Tomlinson, 2001, 2022; Tomlinson & Imbeau, 2023). It involves tailoring strategies, methods, tools, and assessment criteria to address students' educational needs (Tomlinson, 2022), considering their cognitive profiles and potential. This approach ensures assessment serves as an authentic tool for understanding and supporting learning, rather than just measuring performance (Tomlinson & Imbeau, 2023).

Primarily, assessment differentiation can be achieved by:

- a) diversify assessment tools such as written tests, oral exams, practical assessments, digital assessments, portfolios, e-portfolios, projects, self-assessment, and peer assessment;
- b) differentiate assessment criteria by tailoring standards to each student's development level, focusing on their individual progress;
- c) evaluate individual progress not solely based on performance against fixed standards;
- d) implement continuous formative assessment as an ongoing data source for refining differentiation strategies, as outlined by Tomlinson (2022);
- e) use formative assessment mainly driven by learners as a tool for adjusting strategies, according to Cnesco (2023) and Nunziati (1990);
- f) assess student work through various products to demonstrate competencies;
- g) promote self-assessment and metacognition, encouraging students to evaluate their own progress and foster autonomy in learning.

Differentiated assessment does not imply lowering standards for certain students; rather, it involves identifying the most appropriate methods through which each learner can demonstrate their knowledge (what they know and understand), skills (what they do with their knowledge), and attitudes (their manner of relating to what they know and do) upon completion of learning experiences.

3 Conclusions

The management of a differentiated curriculum constitutes a complex, layered, dynamic, and interdisciplinary discipline that cannot be reduced to a simplistic set of techniques applied mechanically.

The theoretical underpinnings of differentiated curriculum management, the spectrum of available strategies, and the diversity of exploitable didactic contexts collectively constitute a domain of action that requires multiple competencies, authentic collaboration, and a long-term strategic vision. Classroom and group management are critical to implementing these strategies, as educators must coordinate differentiated activities tailored to diverse learner groups.

The concern for achieving curricular differentiation serves as an indicator of curriculum modernization, mature curricular visions, and the overall quality of curricular processes. Contemporary challenges, rather than posing obstacles, present opportunities for innovative reconfiguration of curricular practices, aiming towards genuinely differentiated, inclusive, and personalized education.

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