

UNIVERSAL DESIGN FOR LEARNING AND MOTOR SPORTS ACTIVITIES: THE INCLUSIVE POTENTIAL OF A FLEXIBLE AND INTEGRATED CURRICULUM

UNIVERSAL DESIGN FOR LEARNING E ATTIVITÀ MOTORIO- SPORTIVE: IL POTENZIALE INCLUSIVO DI UN CURRICULUM FLESSIBILE ED INTEGRATO

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Abstract

The recent indications from the Cast highlight the systematic variability among students of learning styles while orienting teachers to the construction of a flexible curriculum within the various school segments. In particular, the UDL guidelines represent one of the examples of scaffolding, that is the set of help strategies that can be used by teachers to facilitate the learning process of an individual while creating an effective learning setting for everyone. On the other hand, "accessible pedagogy" as defined by Rose, Gravel and Gordon¹⁵ is based on the idea that teaching practice is developed in such a way as to be functional for everyone. Each point of the UDL framework is referred to as a checkpoint, in the three areas of the learning framework: 1) multiple means of involvement; 2) multiple means of representation; 3) multiple means of action of expression. Although the UDL framework is not directly related to the realm of sports practice, it can certainly be adapted by bringing examples for each of the areas of the UDL framework. According to the CAST there are three levels of achievement in each area that positively influence learning outcomes for students and contribute to an individual's motor literacy, they are: 1. Access; 2. Construction; 3. Internalization.

It goes without saying that teachers need to compose all the useful elements so that the curriculum was accessible and flexible to ensure the inclusion of each and every one.

Le recenti indicazioni provenienti dal Cast evidenziano la variabilità sistematica tra gli studenti degli stili di apprendimento orientando al contempo gli insegnanti, alla costruzione di un curriculum flessibile all'interno dei vari segmenti scolastici. In particolare, le linee guida UDL rappresentano uno degli esempi di *scaffolding*, ovvero quell'insieme di strategie di aiuto utilizzabili dai docenti per agevolare il processo di apprendimento di un individuo creando al contempo un *setting* di apprendimento efficaci per tutti. D'altronde la pedagogia accessibile come definita da Rose, Gravel e Gordon si basa sull'idea che la pratica didattica sia sviluppata in modo tale da essere funzionale per tutti. Ogni punto del quadro UDL viene indicato come un *checkpoint*, nelle tre aree del framework per l'apprendimento: 1) molteplici mezzi di coinvolgimento; 2) molteplici mezzi di rappresentazione; 3) molteplici mezzi di azione d'espressione.

Sebbene il framework UDL non sia direttamente correlato all'ambito della pratica sportiva, si può sicuramente adattarlo portando esempi per ciascuna delle aree del quadro UDL. Secondo il CAST ci sono tre livelli di realizzazione in ogni area che influenzano positivamente i risultati di apprendimento per gli studenti e contribuiscono alla alfabetizzazione motoria di un individuo, essi sono: 1. Accesso; 2. Costruzione; 3. Internalizzazione. Va da sé la necessità per gli insegnanti di comporre di tutti gli elementi utili affinché il curriculum fosse accessibile e flessibile per garantire inclusione di tutti e di ciascuno.

Keywords: accessibility, UDL, sport, physical activity

Parole chiave: accessibilità, UDL, sport, attività motoria

1. Universal planning: a new frontier of inclusion

In 2006, the UN Convention on the Rights of Persons with Disabilities calls on the international community to protect diversity starting from accessibility, specifying in article 9 that States Parties adopt adequate measures to guarantee persons with disabilities, on an equal basis with others, access to the physical environment, to transport, to information and communication, including information and communication systems and technologies, and to other equipment and services open or provided to the public, in both urban and rural areas (UN Convention, 2006). The *recapitalization* of the culture of accessibility, whose origins date back to the architectural world with subsequent evident repercussions in the socio-educational field, has made it possible to widen the interpretative boundaries of diversity, affirming that it is necessary to guarantee people with reduced or impeded motor skills or sensory to use the urban space safely, to reach the building [...], to enter it easily and to use spaces and equipment in conditions of adequate safety and autonomy. In particular, in educational contexts it was necessary to integrate multiple and diversified transversal approaches in a complementary way, appealing to what emerged in national and international scientific debates, on the subject of diversity and opportunities. Already in the 1970s, the architect Ronald Mace paved the way for subsequent reflections on the relationship between diversity and accessibility in a universal key, introducing the concept of the usability of spaces so that they can be used by all people, in the widest possible way, without need for adaptations or specialized design (Mace, 1985) e basic idea is to start from diversity to design goods and services that are useful and usable by each and every one, aiming at spreading "accessible pedagogy" to "guarantee people with disabilities, on an equal basis with others, access to 'physical environment, transport, information and communication, including information and communication systems and technologies, and other equipment and services open or provided to the public, both in urban and rural areas' "(UN Convention article 9). The innovation introduced by the UDL is that of equity understood as a guarantee of participation and access to learning by all pupils, which is operationally expressed in an equitable allocation of resources and in a differentiation from the perspective of individualization and personalization of educational-didactic approaches, strategies, materials. (Meyer, A, Rose, D.H., and Gordon, D., 2014), The originality of this approach lies in paying attention to the "environments" and the underlying climate, going beyond the physicality of the place itself but leaving room for the originality of virtual environments and related assisted technologies that can guarantee multiple and diversified forms of unique personalized and customizable learning. Therefore, it ranges from didactic contents, lesson plans and multimedia objects intended for educational institutions starting from a survey of research evidence relating to the theme of differences in learning, the potential of educational technologies and good teaching practices. The theory behind the UDL focuses on three main neuronal networks that are strongly interconnected with each other:

- recognition network, located in the posterior part of the brain, supersedes the reception and first processing of information received through the senses. Thus, it recognizes what we perceive and makes it available to our memory and to the other two main networks.
- strategic network, is placed in the front part of the brain and processes the information received from our recognition apparatus. It allows us to provide answers to complex problems through reasoning: if the recognition network determines how we receive information from the outside, the strategic one is responsible for how we in turn enter information into the environment around us, selecting and organizing them.
- affective network, which is responsible for tracing the information processed by the other two networks by establishing our priorities on the basis of our interests, our memories, our emotions. It can act as a brake if a particular type of content evokes negative memories in us. These networks work and

interact differently from individual to individual, generating a variability in learning giving rise to as many forms of learning: recognition learning: refers to a student's ability to recognize and remember concepts, it is usually facilitated by reading a text, watching a movie, etc...;

strategic learning: it is linked to a student's ability to respond to particular contents, concepts or skills; affective learning concerns the emotions experienced by the student during the learning process as "they are not separated from cognitive activity, on the contrary they concretely affect cognitive processes, such as attention, memory, understanding; they draw attention and resources to what induces them and direct the attitude. It goes without saying that learning variability requires a more flexible approach to education which must adapt the curriculum¹ to the multiple needs of students. Taking into account the reference framework offered by neuroscience and the student's mutability in the three aforementioned areas, the CAST (Wakefield, MA: CAST Professional Publishing) in this sense has developed specific Guidelines based on the following founding principles:

1) Provide different means of representation, in order to guarantee students the possibility of showing what they know and can do through the medium deemed most effective and easy. More precisely, as students have different ways of perceiving and understanding the information presented to them, it is essential to provide the same information through different sensory modalities (sight, hearing, touch); provide information in editable formats; explain the main vocabulary and symbols to make sure all students understand them; expose content through a variety of means, not just textual; activate the learners' previous knowledge

2) Provide multiple means of action and expression, to guarantee all students equal opportunities in interacting with educational content and sharing what they have learned, through the use of a mix of plural didactic mediators (visual, auditory, tactile, concrete, representative and abstract), the systematic use of technologies (assistive and compensatory) and offering alternative options for executive functioning (e.g. guiding the definition of appropriate objectives, supporting the planning and use of strategies, to monitor progress).

3) Provide multiple means of involvement, useful for identifying and exploiting the tasks and approaches that most motivate each student to connect with learning.

Some options that move in this direction are using various ways to stimulate the interest and participation of learners, for example, by providing opportunities for choice; make the contents of the lesson as relevant and authentic as possible; minimize threats and distractions; encourage commitment and perseverance. each principle is divided into three guidelines (for a total of nine) and each guideline, in turn, runs through a variable number of control-verification points checkpoints, or micro-objectives, useful for the implementation of the framework. The UDL guidelines were designed to assist educators (beginners and experts) to consider the key sources and types of variability of students who have to engage in a given learning goal, choosing and designing flexible curricula that lead to growth. of each individual student towards this goal. The guidelines are based on scientific research in relation to learning in order to be able to detect the primary dimensions along which each student is subject to variation. The guidelines offer concrete suggestions aimed at guiding systematic variability among students. These suggestions are the results of a multi-year review of thousands of research articles, which identify the experimentally specific didactic validity of the techniques and interventions adopted. In general, the guidelines and checkpoints act as a guide to teachers, to be able to better explain the teaching concepts, and build flexibility within the learning environment. Furthermore, the UDL guidelines represent the set of help strategies used by a teacher to facilitate the learning process of each and every one, thus offering multiple effective learning options for all.

2.The application of the UDL guidelines to motor sport activity

The UDL guidelines are an essential part of the didactic planning process used to support all students,

with and without disabilities in the classroom thanks to the reference to strategies that will have to be intentionally varied respecting individual and specific learning times and modalities. The curriculum is proactive and constructive in order to meet all the needs of the students. The possibility of using an open and flexible curriculum would satisfy the need for a design capable of accommodating all operational suggestions from different research fields. Especially in the motor field, in the light of the latest ministerial references that introduce the motor education teacher alongside the generalist teacher in primary schools, a strong communicative thrust is solicited and concretized above all the collaboration of a specialized team, which will be decisive in establishing which strategies put in place to meet the student's learning needs. The learning environment for sports practice, if not carefully planned, can have negative consequences among peers, including bullying, social isolation especially for students with disabilities. Using the UDL approach can minimize the differences between students and promote a more positive and welcoming environment where everyone can achieve personal success. The UDL framework in sports practice was developed in response to specific difficulties including:

- students with disabilities (but not limited to) often reported that the speed of playing a game is too fast to keep up with others, leading to embarrassment and negative social interactions.

- Creating a team is a problem, like being chosen last. When it is proposed to students to create teams, inevitably the primary choice falls on the most skilled players, consequently the participation of all could be conditioned. The didactic innovation introduced by the UDL is that of equity understood as a "guarantee of participation and access to learning by all pupils, which is operationally expressed in an equitable allocation of resources and in a differentiation from the perspective of 'individualization and personalization of educational-didactic approaches, strategies, materials.'"¹⁰ It must be said that at school, the heterogeneity typical of today's classes, requires a flexible approach to adapt the curriculum¹¹ to the multiple needs of the students to whom it must provide:

- 1) different means of representation, in order to guarantee students, the possibility of showing what they know and can do through the "means" considered most effective and easy. More precisely, as students have different ways of perceiving and understanding the information presented to them, it is essential "to provide the same information through different sensory modalities (sight, hearing, touch); provide information in editable formats; explain the main vocabulary and symbols to make sure all students understand them; expose content through a variety of means, not just textual; activate the learners' previous knowledge".
- 2) multiple means of action and expression, to guarantee all students equal opportunities in interacting with educational content and sharing what they have learned, through the use of a mix of plural didactic mediators (visual, auditory, tactile, concrete, representative and abstract), the systematic use of technologies (assistive and compensatory) and offering alternative options for executive functioning (e.g. guiding the definition of appropriate objectives, supporting the planning and use of strategies, enhancing the ability to monitor progress).
- 3) multiple means of involvement, useful for identifying and "exploiting" the tasks and approaches that most motivate each student to stimulate the interest and constant participation of all learners.

The inclusive approach of the UDL recognizes the differences of pupils and considers it necessary to adopt teaching methods in the plural to enhance diversity orienting didactic action to body education to movement, to sport, in formal, non-formal and informal educational systems, to allow each individual to become aware of his being a whole person, which is expressed and accomplished through movement, the action ", Motor and sports activities in this sense have socio-cultural relevance, referring to "the ability to let the individual out of his selfish self-referentiality to make him become a person in the relationship with others, thus giving him the opportunity to transform and grow." Sport in particular, already has an intrinsic inclusive value in itself, adopting the UDL framework "puts the basic principles of education for all in dialogue with a concrete plurality of codes and resources" placing flexibility and universality at the center of planning of inclusive school itineraries that can be used for sports motor education.

3. Motor sports activities at school with an inclusive character for a flexible curriculum

When curricula are designed to meet the needs of a "standard" student population they do not address the variability of learners. It is worth expressing in the best way the notable changes that the use of the UDL methodology makes possible regarding the learning process, with particular reference to four components of the flexible curriculum, namely: 1. Objectives; 2. Evaluation; 3. Methods; 4. materials. UDL emphasizes the interconnection of the latter and emphasizes the importance of the evaluation objectives in designing an effective curriculum. (Rose, D., & Meyer, A., 2002).

Targets

In order for a training course to be effective, positive but above all clear objectives must be set. Goals are often considered as learning expectations. According to traditional teaching, these objectives represent the knowledge and skills that students should master, they are homologated, the same for everyone. According to the UDL perspective, they have been articulated in such a way that the variability of the differences among students regarding the means to achieve the motor task and the results to be achieved is recognized. While traditional resume design focuses heavily on content objectives, a UDL resume aims to nurture experienced students. This requires a continuous and interactive process that will last for a lifetime. Within the UDL methodology, the objectives are not standardized. Following the UDL methodology, it is the teachers themselves who have to plan the objectives and the means to achieve them based on the class of students they have to work with. When the UDL framework is applied, the learning objectives are decoupled from the tools and means to achieve them in order to allow teachers to plan the entire learning path based on the talents and needs of each student by providing them with multiple means to achieve those goals. Ultimately, every student needs to be able to become self-directed and dependent. To this end it is necessary to make them understand what the real learning objectives are, but above all the means to be able to achieve them adequately. By making explicit the connections between the objectives and the other components of the learning process (assessment, methods and materials), it will be more possible to make students aware of the aims of the lessons and other learning activities. Assessment Within the education system, evaluation takes on different names and has different purposes. In general, assessment refers to the process of gathering information about a learner's performance in order to be able to make educational decisions about it. The two main types of evaluation are formative and summative. Formative assessment has a diachronic (the assessment is not limited in time) and holistic (global assessment of the learner) gaze. It can take place through peer-to-peer self-assessment and is prepared by the teacher in the classroom and in an informal manner. Summative assessment is a quantitative assessment that aims to measure what the student / candidate can do with respect to the specified criteria. When we consider the variability of the students with reference to the three neuronal networks, it is obvious that the assessment under this aspect must be flexible and adjustable in order to guarantee the variability of the students. In fact, in order to better evaluate, one should not offer just one means of response, but multiple opportunities using different tools or media to allow students to be able to demonstrate their ability to express themselves. When the assessments are flexible, directed towards the variability of the students, they can effectively represent what the students have learned since they are constructive assessments. Given the variability of students, it would be impossible to design a standard version of assessment that produces adequate results for each student. According to the UDL approach, flexibility and the provision of different options in the way students interact with the material are essential in order to reduce learning barriers and build constructs

adequately. A UDL assessment provides support where needed, giving all students a fair value, a chance to demonstrate what they feel, know and can do. Assessment should foster the exchange between teachers and students in order to understand each other's strengths and limitations, in order to allow learners to take a proactive role in their education, also favoring the clarification of expectations, frustrations and goals renewed. This implies sharing feedback openly, so that teachers and pupils can evaluate their work and agree together on ways to teach and learn more effectively.

Methods

Teaching methods include the decisions, approaches, procedures and routines that teachers adopt to accelerate and improve learning. A single methodology, such as the frontal lesson, cannot be useful to all pupils in the same way. According to this methodology, the methods must support the three neuronal learning networks and in particular:

- for affective networks it is necessary to offer multiple choices of contents and tools; different levels of adjustable difficulty; possibility of choice and prizes; choices related to the learning context;
- for strategic networks it is necessary to provide flexible models with qualified performances; opportunities to practice with the tools; provide continuous impertinent feedback; flexible opportunities to demonstrate skills;
- for recognition networks it is necessary to provide more examples; highlight the critical characteristics of a particular content; provide more means and tools to present the content; bear the learning context and background of the students.

According to the UDL perspective, effective methods are methods that can be continuously adapted to meet the needs of students and include all students within a collaborative learning environment.

It is now clear that variability among students is omnipresent: students diversify in the way they engage in their work, in how they understand information and what is the most effective way to express their learning. Since these factors are largely predictable dimensions of variability, a range of skills and interests can be planned when constructing teaching methods. Through an evaluation based on direct observation, teachers can become aware of what is hindering the learning process, which are the most motivating arguments, which types of adaptation of teaching methods are necessary to achieve a good level of learning. One of the ways in which other teachers can increase the involvement of pupils within the learning process is to offer them a role within the teaching itself. The UDL guidelines underline the importance of promotion and collaboration within the class community. Encouraging students to act as tutors or mentors for their peers has multiple benefits. Mentors gain confidence and strengthen their skills by teaching others; while the peer group benefits from individualized coaching. If carefully structured, peer collaboration can increase opportunities to raise motivations for learning. If flexible rather than rigid groups of students are created, it is possible to improve differentiation and the emergence of multiple roles within the learning community.

Materials

The materials include the media used to present learning content and the media tools used by students to demonstrate their knowledge. Within the UDL framework, the proposed material must be varied and flexible. In order to interact with learning, the materials must be able to offer alternative paths to success, including the choice of content to learn where appropriate, it must also have various levels that help the growth of students' motivation and options that increase their interest. From the UDL perspective, effective materials are those that align with the goals; involving students and helping them to become proactive. offering the tools and supports needed to access, analyze, organize, synthesize and demonstrate understanding in various ways including choosing content where appropriate, various levels of support and options. It seems even more important to decline the above points in a motor sporting key, letting the educational need of each and every one emerge with respect to bodily accessibility in relation to learning. Programming a motor sport activity implies an interest

in the specific educational teaching for the use of corporeality in movement as a channel of access to the main knowledge and, if necessary, vicarious knowledge. Last but not least, each activity assumes a knowledge on the part of the proposing teacher of the educational purposes underlying an educational project that ranges from disciplinary knowledge in a trans-inter-disciplinary key. It follows a commitment and a docimological responsibility of a high professional level.

Conclusion

Designing motor sports practice by applying the UDL framework implies offering a range of options along the dimension of the novelty in any learning situation. Since the 1980s it has spread in the didactic-educational environment as a real framework for improving and optimizing teaching and learning for all people based on scientific insights into how human beings learn. This is the universal design for learning that is introduced in the educational field by Rose, Gravel and Gordon. with the aim of transferring the principles of design for everyone from the architectural plan and the construction of products to that of education, through action centered on study programs (Center for Applied Special Technology ,2018). According to the recent reflections of the CAST, Universal Design for Learning (UDL) can be defined as a transformative innovation. The key to this transformation is not the standardization of education, but its personalization in order to build results that aim at the discovery of the individual and his talents, in order to place students in an environment where they really want to learn and where can truly discover their passions. The inclusive model of universal design distorts ordinary teaching, which must be designed from the outset "for all" and not with subsequent adaptations. At school, the possible integrated application of UDL suggestions could help teachers in the field to rethink projects accessible to the skills of each student (Cottini, 2019) by redefining contexts and human and material resources in an attempt to respond didactically to: • the thing of teaching; • the how of learning; • because of learning, for the construction of an accessible didactic curriculum respectful of the complexity of the needs of each and every one. At the same time, the need for the “recapitalization” of the culture of the body in the school environment has made it possible to broaden the interpretative boundaries of the teaching-learning process, affirming the function of didactic corporealities capable of incorporating its various forms. In the didactic-motor field, the specific constraints of docimological actions have led to reflect on the possible use of forms of bodily-kinesthetic accessibility for the understanding of the semantic and vicarious plurality that motor experience can assume in educational-training contexts in the light of suggestions from the ministry and education and research in the international arena from Cast.

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