



# Universal design for learning

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## Abstract

According to Universal Design for Learning (UDL), learning and teaching should be easy, open to everyone, and effective for all students. This is done by considering how different and unique each learner is. Science and the idea that there are many ways to interact, reflect, and talk about yourself are what UDL is based on. It says that goals, methods, tools, and tests should be adaptable so that people can get past problems and build on their own skills. By considering the different learning styles, backgrounds, and skills of students, UDL helps teachers plan lessons that get everyone involved, keep students interested, and get better results. For example, it can be used to help make systems that are fair and open to new ideas in general and special education, higher education, and digital learning. UDL is shown to help students from all walks of life, not just those with disabilities. It also helps students who speak more than one language, are smart, or come from different cultural and socioeconomic groups. There is a lot of focus on personalization and including everyone in education systems around the world right now. UDL is a proactive, evidence-based way to rethink how to teach for the 21st century.

**keywords** - Universal Design for Learning (UDL), Inclusive education, Accessibility in education, Learner diversity

## Introduction

Today, diversity in the classroom means more than just having students from different countries, languages, and social classes. It also means that students learn, think about, and show what they know in different ways. Traditional ways of teaching, which stress consistent delivery and grading, can't handle this kind of difference, which makes learning less even. Being able to make sure that all students can access and use lessons that are open, adaptable, and welcoming is what Universal Design for Learning (UDL) is all about. UDL is based on three main ideas that are backed up by cognitive neuroscience and educational psychology: giving students more than one way to be engaged to keep them interested, giving students more than one way to represent content in different formats, and giving students more than one way to show what they know in different ways. UDL tells teachers that they should plan for all of their students from the start, rather than making adjustments for certain groups after the fact. This lessens the barriers and makes it easier for everyone to take part. UDL is important not just in special education, but also in normal classrooms, college, and online learning. It fits in with attempts around the world to make education more fair, personalized, and tech-enhanced. UDL is a good way to help kids from all walks of life and prepare them for success in a world that is always changing and getting more complicated. It does this by making the way we teach and learn more open to everyone.

## Concept and Principles of Universal Design for Learning

All students, no matter their skills, where they come from, or how they like to learn, should be able to access, change, and be a part of learning environments. This is what Universal Design for Learning (UDL) is all about. The idea behind general Design for Learning (UDL) comes from the idea of general





design in building and making products. Instead of making changes to education after the fact to help certain groups, lessons should be planned with the different ways that students learn in mind. Different ways of learning are the norm, not the exception, says the basic idea. This natural variety should be taken into account when making lessons, tools, and tests. It is based on the idea that learning uses three brain networks that are all linked: the affective network, which controls feelings; the recognition network, which controls what we see; and the strategic network, which controls words. These ideas form the basis of the UDL structure, which is made up of three main ideas.

- **Multiple Means of Engagement** This concept talks about the "why" of learning by focusing on ways to keep people interested, motivated, and determined. Because different learners are interested in different things, UDL suggests using a variety of methods to spark interest and keep people working hard. Giving students choices in their learning activities, using examples that are important to their culture, assigning group projects, and encouraging self-regulation are some examples.
- **2. Multiple Means of Representation** This concept focuses on the "what" of learning and says that information should be given in different ways to accommodate differences in how people see, understand, and use it. Some learners do better with visual cues than verbal ones, or the other way around. Because of this, UDL tells teachers to use a variety of text, pictures, sounds, interactive media, and real-life examples, along with techniques that build on what students already know to help them understand more deeply.
- **3. Multiple Means of Expression** In this concept, the "how" of learning is emphasized, showing what students know should be possible in a number of different ways. Because students have different motor skills, ways of communicating, and organizational skills, UDL encourages a variety of assessment types, including projects, portfolios, oral presentations, written tasks, and digital outputs. This gives teachers more options so that students aren't judged based on how well they can present themselves in one way.

All of these principles work together to create a whole method that reduces barriers and increases participation and access. By incorporating these ideas into the planning of lessons, teachers make classrooms where all students can do well, not just those who learn in the usual way. So, UDL is a step toward fairness in education that makes sure differences are seen as strengths instead of problems.

### Application of UDL in Educational Settings

There are many places in schools where Universal Design for Learning (UDL) is useful, from preschool classes to college campuses and online learning sites. It can be used to make learning spaces that all students can use, connect with, and show what they know in a useful way because it is flexible. UDL lets teachers plan lessons for all students that take into account the different ways they can learn from the very beginning. One way a science teacher might show and talk about an idea is through movies, pictures, and hands-on activities. They could also let students write reports, give direct explanations, or make models to show that they understand. This way makes sure that variety is supported from the start and reduces the need for individualized accommodations. With UDL, students with disabilities can be a part of normal classes in a planned way that doesn't affect their learning. This is done in both special and regular schools. UDL helps teachers find a balance between helping students one-on-one and teaching the whole class by giving them a variety of tools and test-taking options. This way, everyone, not just the people who are there, feels like they belong.





Some ideas from UDL are being used more and more in higher education to help adult students, foreign students, and people with disabilities. To use UDL, professors can make sure that class slides have clear text and pictures, record lessons so that students can watch them again later, or give students digital projects or other ways to test their knowledge besides timed tests. This freedom helps everyone do well in school and gets rid of the problems that make it hard for some students to learn or speak a language. UDL is especially helpful in digital and online classrooms because technology lets people participate, show, and talk in different ways. There are many things that can be added to online platforms to make them more useful for all kinds of students. These include discussion boards, interactive simulations, adaptive quizzes, and video lessons with closed captions.

### **Benefits and Impact of UDL**

Universal Design for Learning (UDL) is a way to teach and learn that is great for all students, teachers, and schools as a whole. UDL makes school more fair and accessible for all students by getting rid of the things that make it hard for students with disabilities, language barriers, or social and economic issues to fully engage in school. By giving students many ways to interact, represent, and talk, UDL makes sure that all of them can access material in a way that works for them. This makes people feel like they fit and are included. It's easier and more fun for everyone to learn this way because students are more motivated and can understand and use what they've learned better when it's shown to them in different ways. UDL also helps students be independent and self-disciplined by letting them choose how to do projects and show what they've learned. In turn, this builds skills like evaluating oneself, making choices, and fixing problems, all of which are important for learning throughout one's life.

One thing that UDL does for teachers is make active teaching planning possible. UDL teachers don't change lessons after the fact to fit the needs of each student. Instead, they plan lessons from the start that take into account how each student learns. This makes the lessons more useful while saving time and money. Teachers are also more likely to try new ways of teaching with this method. They use technology, multimedia tools, and flexible testing methods that help a wide range of students and make the classroom better for everyone. UDL changes more than just the classroom; it changes the whole school system by pushing everyone to be fair and include everyone. International commitments to inclusive education, such as the United Nations' Sustainable Development Goal 4 (Quality Education), say that everyone should have equal access to education and the chance to learn throughout their lives. Universities and schools that use Universal Design for Learning (UDL) are in line with these goals.

Studies have also shown that UDL helps people get along with others. This is because welcoming classes reduce stigma, encourage students to work together, and prepare them to live and work in diverse communities. In this digital age, UDL is especially helpful because it can adapt to new goals in education, such as personalized learning and teaching with technology. We all learn in different ways, and UDL changes the story from one of fixing problems to one of appreciating differences. This changes both how good and fair schooling is. In this way, UDL not only helps groups that aren't well-represented, but it also helps all students learn better, making it a model for the future of education that is good for everyone.

### **Challenges and Limitations of UDL Implementation**

Universal Design for Learning (UDL) is a strong framework for making education fair and open to everyone, but it is hard to put into practice and has some restrictions that keep it from being widely used. One of the biggest problems is that teachers don't know enough about it or have enough training. A lot of teachers don't know what UDL is or think it's too hard to understand without knowing a lot about neuroscience, educational design, and technology. Teachers might have trouble putting theory





into practice if they don't have a plan for ongoing professional growth. Another problem is a lack of resources and facilities, which is especially true in schools with limited funds or resources. Access to technology, multimedia tools, and flexible teaching materials is often needed for UDL to work well. However, these things aren't always available in schools that aren't getting enough money, in rural areas, or in growing regions. This makes me worry about fairness in the system that is supposed to encourage inclusion.

Time and work load pressures are another problem. Creating lessons that include many ways to interact, be represented, and show oneself needs a lot of planning, creativity, and preparation. It might be hard for teachers who already have a lot to do to use UDL regularly, especially in big classrooms where students have different needs. It can also be hard to figure out how to evaluate learning results in a UDL framework. Standardized tests are often used for traditional assessment, but UDL encourages different ways of expressing yourself, which can make evaluation less clear and require teachers to come up with new ways to grade and use rubrics. For quick reference, here is a list of the Challenges and Limitations of UDL Implementation, broken down by point:

- **Lack of Awareness and Training** – A lot of teachers don't know how to use UDL principles or don't have the professional development chances to do so.
- **Resource Constraints** – Tech, digital tools, and flexible materials are hard to get to, especially in schools that aren't well-funded or that are in rural areas.
- **Time and Workload Pressures** – Making lessons based on UDL takes more planning, which can be too much for teachers who are already very busy.
- **Assessment Difficulties** – Standardized tests and UDL's flexible ways of evaluating students often don't work well together, which makes review more difficult.
- **Institutional and Policy Barriers** – Stiff curriculums, systems that are based on tests, and accountability structures make it harder to be flexible, which is needed for UDL.
- **Evidence Base Limitations** – Some people say that more large-scale, real-world studies are needed to prove that UDL works in the long run.
- **Resistance to Change** – Some teachers see UDL as an extra task rather than an integrated method, especially in big classes or ones that are focused on tests.

## Conclusion

UDL, which stands for universal design for learning, represents a significant shift in the way that we teach and learn. It goes away from the notion that there is a single solution that is applicable to all situations and toward the notion that various learners are typical and not exceptional. The Universal Design for Learning (UDL) framework is a framework that provides equitable learning opportunities across all levels of education, including general school, special education, higher education, and through digital platforms. In order to accomplish this, it places an emphasis on a variety of different modes of involvement, representation, and expression. Not only has it made education more accessible and assisted kids in performing better in school, but it has also assisted students in being more self-sufficient, motivated, and socially included. However, despite the fact that Universal Design for Learning (UDL) has a great deal of promise, it is still difficult to put into reality. This is due to the fact that teachers do not receive sufficient training, there are not enough resources, examinations are difficult to comprehend, and institutions are obstinate. It is necessary for us to work on a number of different levels in order to address these issues. These levels include supporting legislation, investing in technology, fostering professional growth, and doing ongoing empirical research in order to build up the body of evidence. In the end, Universal Design for Learning (UDL) is not only a collection of approaches; it is also a way





of thinking about education that places an emphasis on innovative ideas, justice, and flexibility. At a time when learning environments are becoming more varied, Universal Design for Learning (UDL) is a method that gives educational institutions the ability to create classrooms in which all students are able to fully participate and succeed.

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