

## **UNDERSTANDING AND APPLICATION OF UNIVERSAL DESIGN FOR LEARNING (UDL) AMONG SPECIAL EDUCATORS IN INCLUSIVE CLASSROOM**

**Som Krishan\***

**Radhakrishnan Kasturi Venkata\*\***

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### **Abstract**

Inclusive classroom has more diverse learners, where students with disabilities have enrolled. It challenges to special educators to teach all diverse learners in one classroom. Because special educators are professionally trained in particular one disability area. The educators with Qualifications in single disability area will be encouraged to specialize in other disability areas to take care of wide range of diversities in a general school (Samagra Shiksha Abhiyan, 2018). Therefore, it is necessary the special educators have to use multiple instructions to teach all students with disabilities in their classrooms. UDL is one of the framework that fulfill the needs of diverse learners including students with disabilities. The purpose of the study was to examine the

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**\*Research Scholar in Special Education, Department of Hearing Impairment,**

**Faculty of Disability Management and Special Education, Ramakrishna Mission Vivekananda Educational and Research Institute, Coimbatore, Tamil Nadu**

**\*\* Science teacher/Special educator, Rajghat Besant School, Krishnamurthy foundation, Varanasi, Uttar Pradesh**

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understanding and application of UDL in an inclusive classroom setting among special educators. 49 special educators were involved in present study working in inclusive school in Tamil Nadu (India). Survey method was designed to conduct this study and a questionnaire was used to collect the data from the participants. The findings of the study show that special educators have below average understanding about UDL and in comparison they knew more about the principles of multiple means of action and expression than the other principles of UDL. About the application of UDL, it was found that although 72% special educators applied principles of UDL in their classrooms, only 27% special educators' practiced UDL with knowledge, and the rest 45% special educators' practiced the principles of UDL in their classrooms without any knowledge of it as such. The present study concludes that there is a need of formal training about UDL for special educators to cater to an inclusive classroom including children with special needs.

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## **Introduction**

India has progressed steadily in the area of providing education to Children with Special Need (CWSN). The yearly statistics & data released by the government of India regarding the enrollment of CWSN in government schools help us understand the gradual progress that was made. Here this steady growth in the enrollment rate in government schools at both Primary & Upper Primary levels (U-dise, 2017) is clearly seen. This is a good news as it indicates that more CWSN are getting "chance" to study with their typically developing peers in a regular environment instead of a segregated environment of special schools. Thus it can be deduced that we as a society are becoming more open about inclusion of CWSN in regular schools, although just providing a chance to study isn't going to provide a definite solution, we also need to check the effectiveness of instruction techniques & how much they are actually benefiting from the

educational services being provided to them. The table below mentioned presents an explicit description of the same.

Table No. 1 CWSN enrollment rate in Govt. Schools year wise

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
<b>Primary</b>	0.75	0.75	0.74	0.87	1.18	1.3	1.2	1.8
<b>Upper Primary</b>	0.71	0.74	0.7	0.83	0.9	1.18	1.12	1.13

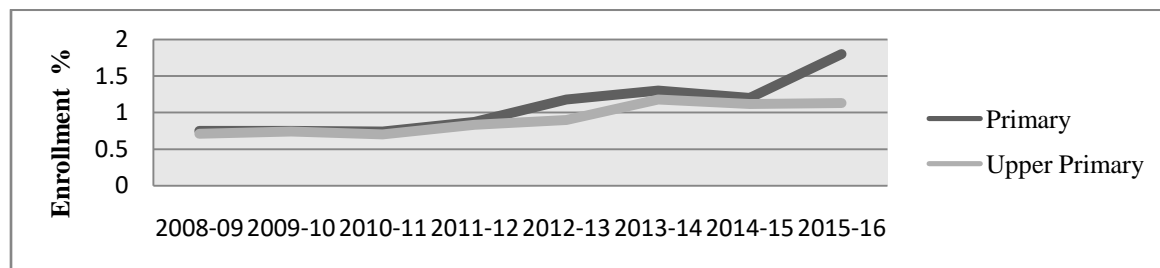


Figure: 1 CWSN enrollment rate in Govt. Schools year wise

The situation becomes difficult for a teacher if he/she is not well equipped to deal with & teach CWSN along with typically developing children in the same classroom. Not being able to handle learner diversity causes frustration to a teacher & is a cause of professional burnout (Talmor, Reiter, and Feigin 2005). When we use the term 'Learner Diversity' we should consider the factors such as physical, visual, hearing, sensory, attention and communication impairments (Burgstahler, 2011), which is basically incorporating elements specifically to help Children with Special Needs (CWSN) & the recent change in the legislation in Right of Persons with Disabilities (2016) also emphasizes the same. Some of the other recent developments in the field also point out strongly towards having an inclusive environment for teaching-learning, one of such recent development is that the educators with qualification in a single disability area will be encouraged to specialize in other disability areas to so that he/she becomes more adept at catering to the needs of wide range of diversities in a general school (Samagra Shiksha Abhiyan, 2018).

Such modifications are welcome as an Inclusive classroom has diverse learners, especially where students with disabilities are enrolled and it proves to be a big challenge even for a trained special educator to teach all diverse learners in one classroom. As a special educators are professionally trained in one particular disability area. Therefore, it is necessary

that the special educators should use multiple instruction techniques to teach both typical & CWSN in the same classroom. UDL is a framework that fulfills the needs of diverse learners including students with disabilities. UDL training for teachers is seen as a transformative practice and as a useful model that makes inclusion successful (Richmond, & Sung, 2013). It is a promising & an evolving instructional approach followed in the Inclusive Education system to meet the educational needs of diverse learners in a classroom including CWSN. Awareness of UDL among in-service teachers and administration of regular schools will greatly add on to the quality of education provided to the students. SSA focuses on Education for All irrespective of the abilities, disabilities, caste, gender, socio-economic level; every child has to get an education under one roof. UDL is proven to be effective as a supportive approach for a teacher teaching a diverse classroom in the current education system, however application of UDL in India is very less (Odunavar & Kamaraj, 2018). As a systematic & standard approach first we need to find out what is the level of understanding of UDL among teachers teaching in an inclusive setting, and also to find out up to what level the teachers are applying UDL in their respective classrooms & whether they are doing it with knowledge. Thus the purpose of the study is to examine the understanding of UDL among special educators and application of UDL in the classroom.

### **Review of Literature**

UDL is a vast area of knowledge & a lot of qualitative & empirical research has been done on it all over the world. As the current study focuses on the understanding & application of UDL, the researchers have considered & analyzed previous studies which fall under the following four topics:

- a. Teacher's Knowledge of UDL
- b. Level of Incorporation of UDL in classrooms
- c. Teacher's Perception of UDL

*“Teacher knowledge and use of universal design for learning”* Glaser, (2017). The researcher conducted an informal survey using purposive sampling to check knowledge & application of UDL among general & special educators. The teachers were asked to select their classroom teaching methods & strategies based on the three main principles of UDL (multiple means of representation, multiple means of action and expression, and multiple means of engagement). The questionnaire checked the respondent's familiarity with UDL, level of incorporation UDL in

their lessons, and the amount of pre-service & professional development training they received on UDL. The results showed that although half the teachers were familiar with UDL, yet very few had received any training on UDL. It was also seen that mostly special educators were incorporating UDL in classrooms more than general educators.

*“Universal Design of Learning (UDL) is a means of Challenging Exclusion”* Odunavar & Kamaraj, (2018). The study was conducted to identify the status of implementation of UDL at school level & to identify the theoretical & practical knowledge of general educators about UDL. Mixed method-Convergent parallel design was used with Random Sampling Technique in this study. The results showed that both theoretical & practical knowledge among general educators about UDL was insignificant.

*“Effectiveness of teacher training on the use of UDL strategies with special education students in middle school”* Gavin, (2017). The study was conducted to see the co-relation between UDL training received & the level of incorporation of UDL strategies in classrooms. Addressing the multitude of learners in a classroom using UDL principles was emphasized by the researcher. The findings of the study showed that there was significant correlation between the amount of use of UDL strategies in the classroom and UDL training received by the educators.

*“Teachers Perceptions of Barriers to Universal Design for learning”* Anstead, (2016). Gathering insights on perceptions of teachers about the barriers in the implementation and application of UDL was the purpose of this study. The teacher perceptions about UDL were mostly negative & showed a pervasive perception that implementing UDL would create additional work and overwhelming stress & indicated resistance more often than interest about implementation and application of UDL. It was also seen that the teachers’ thought that implementation and application of UDL would require longer lesson plans and more work. It is to be noted that the teachers also scored low on knowledge about principles of UDL which is directly related to the perceptions.

### **Aim**

To study whether special educators are applying UDL principles in their classrooms, and if they are, then are they applying with or without awareness of UDL framework.

## **Objective**

The objectives of present study are:

1. To study the understanding of UDL among special educators
2. To study the application of UDL in inclusive classroom by special educators

## **Research Method**

### **Participants**

A total of 49 participants were involved in present study. Ten participants were working in special schools and thirty nine participants were working in a regular school in the state of Tamil Nadu. Out of them, 21 special educators are diploma holder, 22 special educators have a B.Ed. Degree and 6 special educators have M.Ed. in special education degree. All participants have different levels of teaching experience in years. Participants' have done their professional qualifications in Hearing, Visual and Intellectual Disability areas.

### **Instrument**

A survey questionnaire was used to examine the understanding and application of UDL. The survey questionnaire was modified from Glaser, 2017 survey section. There are two sections in this tool; first section is related to background information of participants. The second section of the tool was used to study the understanding and application of UDL among educators. There were 8 questions in second section of tool, the first 4 questions are to study understanding of UDL and the participants have to respond in yes or no for three questions, and for the fourth question the participants have to choose the correct UDL principles. The next 4 questions study application of UDL in inclusive classrooms. For the first question the participants have to respond in yes or no for a particular statement. In the next three questions the participants have to choose any 5 or less/more plan of action from the given options, which they apply in their classrooms. The validity of the questionnaire was established with the help of 5 experts from rehabilitation professional, and established reliability of the tool the Pearson correlation of coefficient has calculated, which is highly correlated ( $r=.91$ ).

### **Data Collection**

The data was collected through direct interaction with the participants during a continuous rehabilitation program (In-service training program). The questionnaire was

distributed & all instructions were given to the participants by the researcher. The questionnaire was given to 60 participants, but the researcher received only 49 filled questionnaire back.

## Data Analysis

The data analysis was done through descriptive statistics (Percentage & frequency).

## Results and Analysis

The result of the study was explored based on the objectives of the study. The first objective explored the results of understanding about UDL among special educators and the second objective explored the results of application of UDL in inclusive classrooms.

### Objective 1 – To study the understanding of UDL among educators

The study of understanding about UDL among special educators, examined through 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> questions and the results are mentioned in figure 2 and 3.

Table No. 2 Understanding about UDL

S. No.	Description	Yes		No		Total No.	Total %
		N	%	N	%		
1	Familiar with UDL	45	92	4	8	49	100
2	Undergone UDL training	16	33	33	67	49	100
3	Pre-services education on UDL	3	6	46	94	49	100

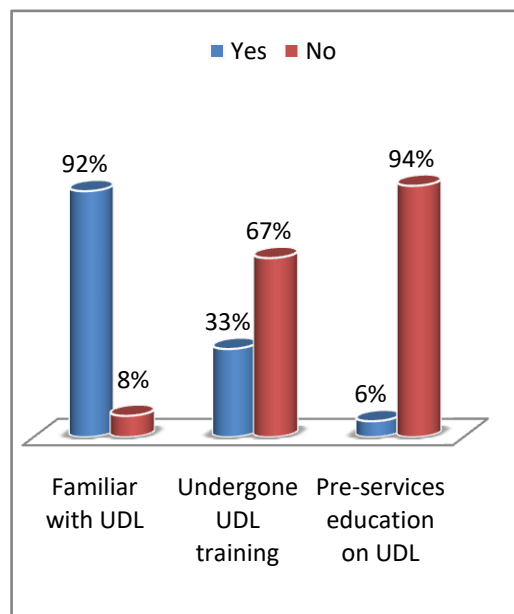


Figure: 2 Understanding about UDL

The result reflects that 92% (45) special educators are familiar with UDL concept, they know that UDL means we have to providing multiple option for learning, and rest 8% (4) are not familiar with UDL concept at all. The participants' response in the second question shows that only 33% (16) special educators have undergone UDL training and 67% (33) have not undergone

UDL training. The result of third question shows that 6% (3) special educators had pre-service education on UDL and 94% (46) did not have pre-service education on UDL.

Table No. 3 Identification of UDL Principles

S · N ·	Description	Right		Wron g		T o t a l N o.	Tot al %
		N o.	%	N o.	%		
1	Multiple means of represent	17	35	32	65	49	100
2	Multiple means of action	26	53	23	47	49	100
3	Multiple means of engage	13	27	36	73	49	100

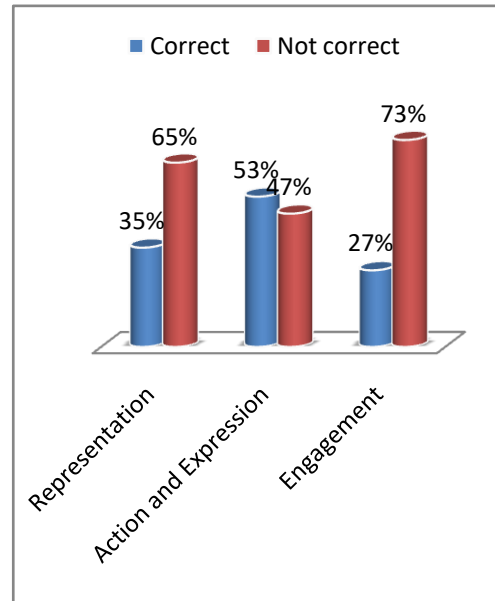


Figure: 3 Identification of UDL

#### Principles

Overall average 38% special educators were able to correctly identify UDL principles. The principle of multiple means of action and expression was the most identified by (53%) special educators and the principle of multiple means of engagement was the least correctly identified (27%). This reflects that special educators have below average understanding about UDL and in comparison they know more about principle of multiple means of action and expression than the other principles of UDL.

#### Objective 2 – To study the application of UDL in Inclusive classroom by special educators

The result of this objective is mentioned in figure 4, 5, 6 and 7.



Table No. 4 UDL practices in teaching

S. N.	Description	Yes		No		Total No.	Total %
		No.	%	No.	%		
1	UDL practices in teaching	13	27	36	73	49	100

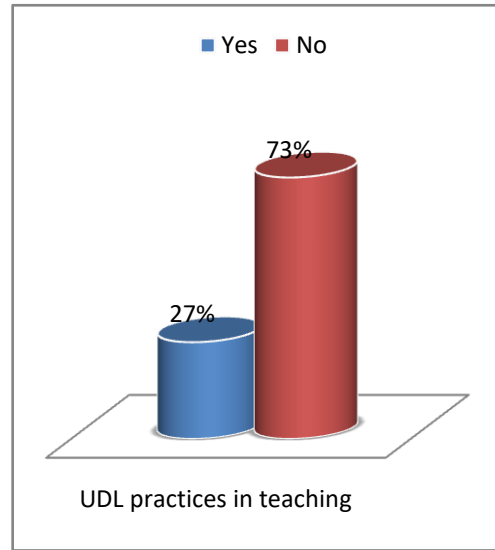


Figure:4 UDL practices in teaching

Figure 4 shows that 27% (13) special educators were using UDL in their classrooms and the rest 73% (36) special educators were not using UDL in their classrooms. However, 92% special educators have awareness of UDL but only 27% special educators had the understanding of UDL concepts & principles. The response of participants regarding the strategies is as follows:

Table No. 5 Strategy used in multiple means of Representation Principle

S.N.	Description	Applying	
		No. of Participants	%
1	Two Strategies	2	3.50
2	Three Strategies	3	6
3	Four Strategies	9	18
4	Five Strategies	34	69
5	Six Strategies	2	3.50
Total		49	100

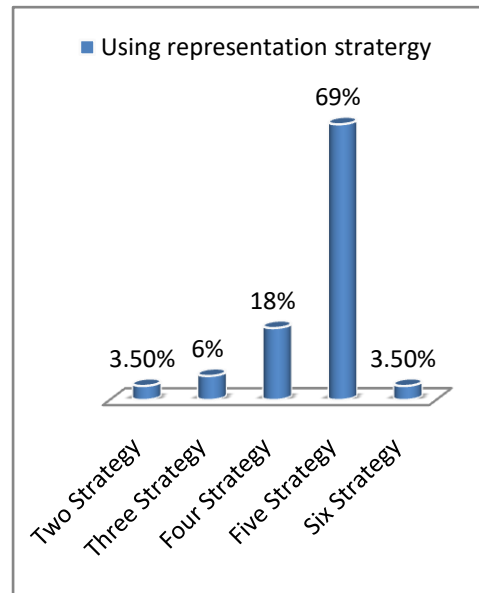
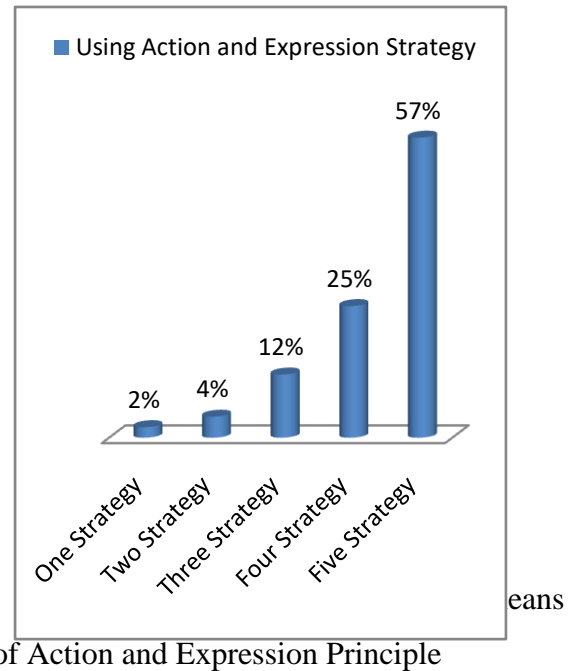


Figure: 5 Strategy use in multiple means of Representation Principle

The result revealed, that 73% special educators are using five and more than five strategies regularly in their classrooms. The most common strategies used by educators are pre teach vocab, concepts, graphic organizers, concept maps, multiple views or print formats, Examples and non-examples to develop patterns and concepts etc.

Table No. 6 Strategy used in multiple means of Action and Expression Principle

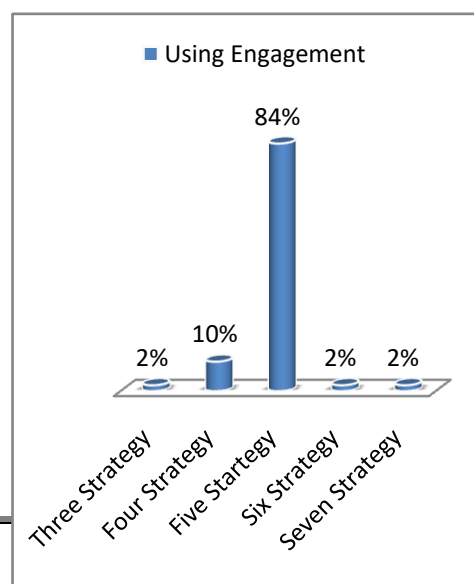
S.N.	Description	Applying	
		No. of Participants	%
1	One Strategy	1	2
2	Two Strategies	2	4
3	Three Strategies	6	12
4	Four Strategies	12	25
5	Five Strategies	28	57
Total		49	100



The result reveal that out of total participants (49), 57% special educators are using five strategies regularly in their classroom. Apart from these rest other special educators are using below five strategies. The most common strategies used by educators such as varity in methods for student response (e.g., text, speech, drawing, manipulative, video, storyboards), Assignments use multiple medias/ formats, and Use of supports to express student understanding.

Table No. 7 Strategy used in multiple means of Engagement Principle

S.N	Description	Applying	
		No. of Participants	%
1	Three Strategies	1	2
2	Four Strategies	5	10
3	Five Strategies	41	84



4	Six Strategies	1	2
5	Seven Strategies	1	2
Total		49	100

*Figure: 7 Strategy use in multiple means of Engagement Principle*

The result revealed that out of total participants, 88% special educators are using five and more than five strategies regularly in their classroom. The most common strategies used by educators for such tasks are related to student interest, Individualized feedback to support student learning, and Student choice of flexible work groups (e.g., individual, pairs, small group).

Overall approximate 72% special educators are using UDL in their classroom. This percentage is considered based on using UDL strategies. Only those special educators who are using five or more than five strategies in their classroom can be considered as they are implementing UDL in their classroom. Out of 72% special educators only 27% special educators practices UDL with knowing, and the rest 45% special educators practices UDL in their classroom but without having known the UDL.

### **Analysis of three Principles of UDL**

**Principles of multiple means of representation:** analysis of 1<sup>st</sup> principle, overall 73% special educators are using multiple means of representation principle in their classroom, but 35% are using with knowing the multiple means of representation principle apart from that 38% special educators were using without knowing this principle.

**Principle of multiple means of action and expression:** analysis of 2<sup>nd</sup> principle, overall 57% special educators were using multiple means of action and expression principle in their classroom, but 53% special educators were using with knowledge this principle, apart from that 4% special educators were using it without knowing the principle.

**Principle of multiple means of Engagement:** analysis of 3<sup>rd</sup> principle, overall 87% special educators were using multiple means of Engagement Principle in their classroom, but only 27%

special educators were using it with knowledge of the principle, and 60% special educators using it without knowing this principle.

### **Discussion**

The collected data shows that special educators have below average understanding about UDL framework, it may be due to lack of formal training about UDL. Only those participants who have undergone UDL training have a good understanding about it. Glaser (2017) study also shows that teachers have a lack of understanding about UDL framework, but most of the participants were familiar with UDL concept. Few special educators got little information & understanding of UDL when they attended any workshops or refresher program. Glaser (2017) stated similar output in the context of application of UDL, where 76% special education teachers were using UDL in their classroom.

### **Recommendations**

- Periodic short term UDL training should be given to at least one in-service teacher & one administrator in every government school.
- The teachers who have scored high in awareness & application, especially those who are already familiar with the UDL principles slightly should be selected to give complete knowledge about UDL.

### **Conclusion**

UDL is a proven & effective method of teaching in an inclusive classroom. The results showed paucity in understanding about UDL therefore formal in-service training for special educators is required. The training will help in capacity building of special educators in handling & teaching children with special needs & diverse learning styles in a better way. Also a practical solution would be to design a UDL instruction module, prepared by curriculum development agencies for the use of teachers. It is absolutely necessary to prepare students curriculum based on UDL approach, then teachers can used appropriate implementation of UDL framework.

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