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Using the Pragmatic Approach with Special Education and Universal Design for Learning (UDL)

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Abstract:
This paper seeks to find the related between pragmatic approach and understand the effect of using UDL to improve the quality of learning for students with special education needs in schools. The pragmatic approach is used because it concentrates on the knowledge that uncovers the 'real'. Moreover, this paradigm helps to understand that which is necessary to deal with problems as they arise (Parvaiz, Mufti, & Wahab, 2016). Universal design for learning (UDL) development is likely to improve the education standards of students with cognitive challenges by offering an alternative approach to the system of learning through the provision of instructional objectives, evaluations, methods, and materials that can be modified and adjusted to address the needs of students with special education needs. Additionally, the paper will add to the research in the field of special education to help people with disabilities in learning academic and professional skills in special education. Also, as practical addition to investigating how to help better individuals with special needs to improve the learning through developing the skills.
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1. Universal Design for Learning

Universal Design for Learning (UDL) refers to an educational framework that takes into account research in the learning sciences, together with cognitive neuroscience, that aide the advancement of flexible learning environments that have the ability to accommodate individual learning differences (CAST, 2011). UDL also refers to a framework that helps in improving and optimizing teaching as well as learning for all individuals given investigative bits of knowledge into how people learn (Hall et al. 2012). It provides teachers and other instructors with a structure necessary in developing instruction to meet learners' diverse needs. Being a research-based framework, UDL suggests that a one-size-fits-all approach is ineffective because every student often learns in a unique manner (Armstrong, 2010). UDL helps in customizing instruction and adjusting to meet individual needs of each student by creating alternatives for how the direction or instruction is introduced, how learners express their thoughts, and how educators can connect with learners in their learning (Meyer et al. 2014).

The UDL framework can be applied by educators to Common Core-aligned tasks in supporting all students inclusive of those with disabilities in successfully engaging with the Common Core (Ashman & Elkins, 2011). UDL helps in reducing barriers to instruction hence giving the chance to all learners to get to, take an interest in, and progress in the general education curriculum (McGuire et al. 2006). UDL gives an outline to making instructional objectives, materials, routines, and evaluations that effectively work for everybody such as flexible methodologies that can be modified and balanced for individual needs (Karger, 2005). This is because individuals usually bring a wide variety of needs, skills, and interests to learning (Council for Exceptional Children, 2005).

Higher Education Opportunity Act of 2008 (HEOA) provides a concise definition of the term UNIVERSAL DESIGN for LEARNING (UDL) (CAST, 2011). According to HEOA, the term universal design for learning refers to a scientifically valid framework for directing or steering educational practice that gives adaptability or flexibility in the ways data is exhibited, in the ways students are engaged, and in the ways students respond or show knowledge and skills; and decreases hindrances in instruction, gives proper accommodation, bolsters, and challenges, and keeps up high accomplishment desires for all students, inclusive of students who are limited English proficient and students with disabilities (Meyer et al. 2014).

UDL is a set of principles for curriculum development giving every individual an equal opportunity to learn. It provides a blueprint for the creation of instructional methods, goals, materials, and assessments that work for every individual, not a one-size-fits-all solution but instead a flexible approach capable of being customized and adjusted according to individual needs (Hall et al. 2012). This is necessary as individuals often bring a wide range of needs, skills, and interests to learning and a single, one-size-fits-all solution may not be able to cater for those huge varieties of needs, skills, and interests to learning. The framework addresses learner diversity at the start of the design or planning effort by suggesting flexible instructional techniques, materials and strategies (Ashman & Elkins, 2011).

UDL was derived from the fields of the built environment and architecture that required that buildings as well as spaces must be designed in such a way that they are easily accessible to every person, including people with

impairments or disabilities (Flippo & Caverly, 2000). The foundations of the concept can also be traced to the early civil rights as well as special curriculum enactment that stressed the right of all learners to a free, suitable state-funded training or education in environments with the least restrictions (Ralabate, 2011). The concept of UDL system was brought about in the late 1980s by researchers at the Center for Applied Special Technologies (CAST). It was conceived as the aftereffect of the alignment of three calculated movements namely developments in education technology, advancements or progressions in architectural designs, and discoveries from brain research (Ashman & Elkins, 2011).

Upon the realization of the fact that the manner in which individuals learn can be unique, David H. Rose, Ed.D. of the Harvard Graduate School of Education and the Center for Applied Special Technology(CAST), first defined the UDL framework in 1990s with an aim of creating a curriculum from the start that gives multiple means of expression to give learners options for showing what they know; multiple means of representation to provide learners with different ways of obtaining knowledge and information; and multiple means of engagement to help in tapping into interests of learners thereby challenging them appropriately and motivating them to learn (CAST, 2011). UDL was introduced into the education domain in the 1990s due to the growth of the momentum for inclusive education (Roberts et al. 2011). The universal design movement in product development and architecture which was originally formulated by Ronald L. Mace at North Carolina State University was responsible for the inspiration of the concept as well as the language of UDL (Hall et al. 2012).

As a research-based framework, the universal design for learning begins with three initial steps namely the definition of appropriate goals allowing for multiple means or ways of attainment, assessment of varied needs of the learner, and the evaluation of the barriers that may be present within the existing curriculum (Ashman & Elkins, 2011).

In defining appropriate goals, the UDL framework requires that standardized goals that include the means to achieve the standard within the goal itself should be set because they allow the learners to have flexibility in how they will actually meet the expectation (Karger, 2005). However, goals with just one rigid expected outcome tend to restrict them to only one medium of expression (McGuire et al. 2006). When establishing student goals, it is, therefore, imperative that the goals are aligned to state standards but also defined in such a way that it allows learners multiple ways of demonstrating the goals have actually been met (CAST, 2011).

Secondly, UDL starts when diverse learner needs are assessed because learners have different preferred areas of interest, weaknesses, and strengths within the setting of the learning environment (Martin & Hanington, 2012). Therefore, with the help of UDL lens, educators including speech-language pathologist are able to identify individual students' interests, strengths and needs across learning networks such as recognition, action as well as expression, engagement and then consolidating them into a UDL group/class profile (Flippo & Caverly, 2000). This helps educators in knowing the students; how they learn best; their strengths, learning styles, cultural backgrounds, and interests they bring to the learning environment; forms of communication they use; how they execute a plan for learning; and their talents (Council for Exceptional Children, 2005).

Finally, applying UDL inside of a classroom begins with the step of evaluating curriculum barriers (England, 2012). A good number of curricula are usually designed as if all learners learn in the same way, however, in reality, that is not the case. Therefore, it is vital that educators analyze the characteristics that are outlined in UDL group/class profiles in order to be able to identify individual learning difficulties (Hall et al. 2012). This will help them in putting more emphasis on as well as addressing the barriers that normally exist within the curriculum (Wehmeyer, 2007). When students with varied learning profiles are provided with the appropriate or right tools for acquiring and understanding content and information, they are able to discover proper difficulties, take part in the learning situation, and progress (Ashman & Elkins, 2011).

The main goal for the UDL is to give every individual an equal opportunity to learn by providing a blueprint for the creation of instructional methods, goals, materials, and assessments that work for every individual. For instance, it does not advocate a one-size-fits-all solution but instead a flexible approach capable of being customized and adjusted according to individual needs (Wehmeyer, 2007). A flexible approach is able to cater for the huge varieties of needs, skills, and interests that individuals often bring to learning. UDL is helpful in addressing learner diversity at the start of the design or planning effort by suggesting flexible instructional techniques, materials and strategies (CAST, 2011).. It, therefore, aids in improving and optimizing teaching as well as learning for all individuals in view of investigative bits of knowledge into how people learn (Martin & Hanington, 2012).

The purpose behind UDL curriculum is to help learners in mastering a particular group of information or a particular set of abilities or skills as well as mastering learning itself thereby becoming expert learners (England, 2012). This will enable them to develop three broad attributes, for instance, they will become strategic, goal-directed and skillful; knowledgeable, and lastly purposeful and inspired to learn more. Additionally, planning educational program utilizing UDL permits educators to eliminate potential barriers that could stop learners from realizing this essential goal (Ashman & Elkins, 2011).

UDL reduces barriers to instruction thereby giving all learners the chance to access, take an interest in, and

progress in the general-education curriculum. It results in flexible methodologies that can be modified and balanced for individual needs by giving outlines to making instructional objectives, materials, routines, and evaluations that effectively work for all individuals (CAST, 2011).

A UDL curriculum is often characterized by multiple representation of concepts and information; flexible alternatives in performance and expression; and multiple ways of engaging learners in the curriculum. It is a four-step process developed by CAST with an aim of helping educators in bringing UDL principles to any curriculum thereby making it more accessible to all learners. In order to make the UDL curriculum more accessible, educators are required to work in teams composed of regular and special education teachers as well as other specialists (Meyer et al. 2014).

The four steps of the process include setting goals, analyzing current curriculum, applying UDL to lesson development, and teaching the UDL unit or lesson (England, 2012). In the first step of setting goals, it is imperative that educators have a clear understanding of what the students should learn. The learning goals should be constant for every student (Rose & Meyer, 2002). In the second step, educators should analyze current curriculum by focusing on the profile of the entire classroom. This will help them to identify curricular barriers thereby being able to help them eliminate such barriers. It aids in simplifying concepts being presented and helping learners with organizational and study skills. Thirdly, educators are required to apply UDL to the lesson development. Having a clear curriculum goal and a good understanding of barriers, educators can identify effective teaching methods (England, 2012). In addition, it helps educators to give students different alternatives to demonstrate their understanding of the topic (Ashman & Elkins, 2011). Finally, the UDL lesson or unit should be taught or used in the next lesson in case all students demonstrate their learning of the concepts. This implies that the planning for all learners, PAL, the process is effective and if not, the teacher should revisit the lesson and revise it as required. Generally, joint curriculum planning is beneficial and also effective in enhancing students' learning.

All normal adult students are able to benefit from UDL because of its two major aspects namely emphasis on flexible curriculum and the wide range of instructional practices, learning activities and materials (Rose & Meyer, 2002). UDL has multifaceted ways of presenting contents which benefit all learners, including older ones and those learning English (CAST, 2011). In addition, it has multifaceted options or alternatives for demonstrating what students know. UDL normally offers information in many formats, including visual, texts, audio, hands-on and video which gives all learners an opportunity to access the material in the way that best suit their learning strengths. Therefore, learners are able to acquire information and knowledge they need. Additionally, it gives all learners different ways of interacting with the material and also demonstrating what they have actually learned. By demonstrating what they know, the educators are able to assess students using methods such as oral presentations, pencil-and-paper tests or group projects. This increases the understanding of the students thus making them expert learners (Ashman & Elkins, 2011).

On the other hand, Universal Design for Learning taps into the interest of learners, offering appropriate challenges and increasing their motivation. It looks for diverse methods of motivating students such as making skill building look like games as well as creating opportunities for learners to get up and move freely around the classroom (Karger, 2005). Educators can sustain the interests of students by letting them make choices and also by giving them assignments that are relevant to their lives. UDL reduces barriers to instruction thus giving all students the chance to access, take an interest in, and progress in their general-education curriculum (Rose & Meyer, 2002).

UDL is helpful to all learners including those with a disability or special needs. It helps students with learning and attention issues to acquire knowledge and skills needed by providing flexible opportunities for assessment (England, 2012). This allows such students also to demonstrate their learning by using multiple ways including oral and visual presentation, instead of just written assessments (Hall et al. 2012). In addition, UDL helps in building movement into learning by teaching a wide range of learning styles. It engages learners both visually and auditorily by giving instructions both in writing and orally. The use of different learning styles ensures that students with special needs also get to acquire the same knowledge their normal peers acquire with lots of ease (Ralabate, 2011).

On the other hand, UDL provides cognitive supports to students with special needs. It gives learners organizing cues by presenting background information for new concepts with the help of videos, pictures, artifacts, as well as other materials that are suitable to the individual needs of such students. Additionally, it ensures that varieties of materials are used in presenting, illustrating, and reinforcing new contents (Ashman & Elkins, 2011). Moreover, UDL uses multiple strategies in presenting content hence enhancing instruction to students with special needs through the use of role play, web-based communications, music, hands-on activities, educational software, and cooperative learning (England, 2012). UDL advocates the use of multisensory teaching technique that helps children with disabilities to learn effectively through more than one sense (Meyer et al. 2014). This technique is often very helpful for learners that have language processing deficits and learning disabilities. It increases their chance of actually acquiring the information being taught in class (Council for Exceptional Children, 2005).

UDL presents information in ways that adjust to the learner need, rather than requesting that the learner

adjusts to the information (Rief, 2015). This is useful for children with learning as well as attention issues since it gives them more than one approach to interact with the material. UDL can make it less demanding for children to utilize their qualities to chip away at their shortcomings (CAST, 2011).

Universal Design for Learning ensures that the needed or appropriate supports are in place to help students with intellectual disabilities in achieving the quality of life in a wide range of viewpoints or aspects including learning (Rose & Meyer, 2002). In addition, it ensures that curriculum and instruction are carefully modified so as to help such learners in reaching their full potential in both academics as well as in other functional areas like independent living (Schelly et al. 2011). While these learners will have confinements in numerous versatile practices, these constraints will exist together alongside qualities in different areas inside of the person (Meyer et al. 2014). UDL also ensures that self-reliance and independence are always essential objectives of every single instructional strategy utilized with learners with intellectual disabilities (Gargiulo, 2012). Although a student with intellectual disabilities normally learns and comprehend fewer things at a very slower pace than average children, with the help of UDL, they continue to learn and comprehend some given aspects of the world (Ashman & Elkins, 2011).

Universal Design for Learning helps in completely addressing the limitations experiencing in intellectual functioning and versatile conduct that is frequently experienced by people with intellectual disabilities (Ralabate, 2011). It ensures that teachers provide or give direct guideline and instruction in various skill areas outside of the general educational programs. Although such skills are more practical in nature, they are completely fundamental for the future autonomy or independence of people with intellectual disabilities (Ashman & Elkins, 2011). Extra skill areas such as vocational training help in preparing people with intellectual disabilities for a specific trade, for instance, it helps them in directly developing expertise in techniques that are related to skill and technology (McGuire et al. 2006). Vocational education helps in enhancing practical knowledge as well as life skills that are applicable in the real world. The utilization of real materials or real devices in natural environments is a key part in the effective guideline of learners with intellectual disabilities (Hall et al. 2012).

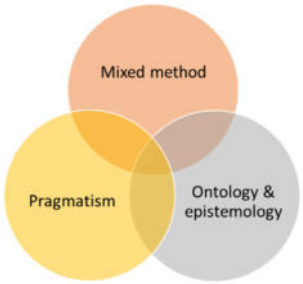
Throughout ones' education, it is clear that every person learns in their own unique way. Therefore, UDL helps educators, students, and community in embracing such differences with the help of different teaching techniques (Gargiulo & Metcalf, 2009). UDL helps educators to come together in creating different methods of teaching that have the ability to help every individual learner no matter what their learning style is (Meyer et al. 2014). It supports the diverse teaching methods thereby enabling students to gain the skills and knowledge they need to succeed (Organisation, 2008). Therefore, UDL helps educators and the community to identify the learning methods of each student thereby giving opportunities to students that have similar learning methods the chances and support for their unique learning styles (Ralabate, 2011). Students are therefore recognized and appreciated for their learning methods instead of being pushed aside and considered low students. UDL enables teachers to incorporate many different learning styles in order to stimulate senses of children. This way, learners who learn hands-on are noticed and hence the lesson involves each student (CAST, 2011).

UDL helps students in offering the same kind of flexibility required in the classroom by presenting school subjects in such a way that all students can access the information. In addition, it gives learners diverse ways of demonstrating their knowledge (Roberts et al. 2011). UDL supports different learning strategies thereby helping the learners' enthusiasm about learning. Since universal design for learning is not in conflict with other practices and methods, it is important to teachers because it incorporates and supports numerous current research-based approaches to learning and teaching (Rose & Meyer, 2002). In addition, it encourages group work or cooperating learning and project-based learning thereby increasing the knowledge available to students (Rief, 2015). Finally, it helps teachers in meeting the challenge of serving all students including those with special needs while improving learning for all (CAST, 2011).

A curriculum that is universally designed is often shaped or molded from the start to address the needs of the greatest number of its users (Karger, 2005). This implies that it is often costly, excessively tedious or time-consuming, and sometime later changes to the educational modules unnecessarily. UDL requires a huge amount of funds and resources to maintain. Additionally, it takes a considerable amount of time to establish and maintain (Hall et al. 2012).

2. The pragmatic approach

The pragmatic approach uses to concentrates on the knowledge which uncovers the antecedently real. Moreover, this paradigm helps to understand which is necessary to deal with problems as they arise (Parvaiz, Mufti, & Wahab, 2016). Also, this approach is consistent with the mixed method. For example, use qualitative and quantitative data to collect information such as: use the pre and post-test, observation forms, open questions and interviews, to find out the effect of UDL on achieving the principle of improve the learning with student's special education in the schools. We will review the following topics: the relationship between pragmatic and each one of ontology, epistemology and mixed-method.



The relationship between pragmatism and ontology, epistemology:

Pragmatism is an American methodological approach originating from the work of William James (1842-1910), John Dewey (1859-1952), Charles Sanders Peirce (1839-1914) and Herbert Mead (1863-1931). Fishman (1991) explained the term of pragmatic is a searching for the feasible, workable solutions to human problems. From academic side by Rorty (1991) the pragmatism is Is to enable people to deal with the problem and physical environment successfully, this gives people happiness to solve this problem. Thus, the pragmatist focuses on 'How things really are?' and 'How things really work or "what the solution problems? (Patton, 1990; Creswell, 2003). Also, the research question is the central focus in pragmatists paradigm. This paradigm believes that should stop asking questions about the natural laws and reality (ontology) and theory of knowledge (epistemology) (Mackenzie & Knipe, 2006; Creswell, 2003; Pow, ell, 2001).

It is important to consider its ontology, epistemology and methodology. Crotty (1998, p. 10) defined ontology as "the study of being and is concerned with 'what is', with the nature of existence, with the structure of reality as such". Burrell and Morgan (1979) noted that the positivist ontological perspective is objective due to its philosophical stance of realism. Furthermore, this approach uses objective variables in order to verify certain sets of hypotheses (Crotty, 1998). Unlike the positivist/scientific paradigm, interpretivism "looks for culturally derived and historically situated interpretations of the social life-world" (Crotty, 1998, p. 67). The paradigm is based on epistemological and ontological positions and assumes that "reality is dependent on the meanings of people in the society, and such socially constructed reality is ungoverned by any natural laws, causal or otherwise" (Guba & Lincoln, 1989, p. 86).

Epistemology is central to any research endeavour (Cohen et al., 2007). Epistemology can be defined as "a way of understanding and explaining how we know what we know" (Crotty, 1998, p. 9). In educational research, there are three main epistemological paradigms: positivist, interpretive and critical (Cohen et al., 2000).

Parvaiz, Mufti, & Wahab (2016) indicated that Al most of theories such as: Positivism, Realism, Interpretive and Critical Theory, are linked to ontological assumptions about the nature of the world we are investigating and our views about its materiality as well as its generality of representation through previous theoreticals. In addition, this type of theories depends on the results of previous studies to generalize the results of empirical research. Most research also uses these theories in comparison with modern theories such as Pragmatism, Symbolic Interactionism (Blumer) and Ethnomethodology. Similarly, in Saudi Arabia, most of the researches focus on positivistic paradigm and a few researches of Interpretive paradigm which are still dominant in educational research (AL-Kahtani, 2015). The most important of these studies in the field of special education who they were based on a positivist and Interpretive paradigm, namely, AL-Kahtani (2015), AL-quraini (2011) and Battal (2016), while are used quasi-experimental, qualitative and quantitative designs. This is one of the reasons that the researchers encouraged to use Pragmatism paradigm in the researches to enrich the field of special education using a new theory.

Moreover, selecting a methodology for Positivism, Realism, Interpretive and Critical Theory rely on there is the high theoretical definition. Therefore, the role of the researcher becomes independent of the phenomenon which is being researched. Thus, the researcher avoids subjectivity in research processes (Parvaiz, Mufti, & Wahab, 2016). The advantage of these theories that the researchers can maintain the worth of the status quo in what is being investigated. However, the researcher views everything as inadequate and incomplete and feels the immediate need for change, though he or she is not always in a position to engender the required change (Laughlin,2004).

On the other hand, Pragmatism theories assume that the world is not material. Equally, learning from and relying on previous theoretical studies is both inappropriate and potentially corrupting of the diversity and detail of an investigation. In other meaning the empirical detail is not mere confirmable or refutable "data" for some prior theory but becomes important in its own right and cannot be transferred to another study for the reasons that other theories could not be used in the context of this study - both are separate and distinct and should be approached as such(Laughlin,1995).

Powell (2001): Conflicting the pragmatist epistemology with prevailing positivist and anti-positivist opinions of scientific discovery. The reason is the positivism emphasizes the objective, law-like properties of a brute reality

independent of observation (Donaldson, 1992; Wicks & Freeman, 1998), anti-positivism emphasizes the creative role of active, subjective participants, none of whom owns a privileged claim on truth (Burrell & Morgan, 1979; Astley, 1985; Martin, 1990). Pragmatism, on the other hand, rejects positivism, because no theory can satisfy its demands (objectivity, falsify-ability, the crucial experiment, etc.); and refuses anti-positivism because virtually any approach would satisfy them. (p. 884).

For researcher role, is allowed to be involved in the observation process and is permitted to preserve his/her subjectivity completely. At this paradigm, the methodological approach has no pre-defined theoretical definitions for the interpretation of the resultant outcome. The advantage of this theory is Leave the change choice in the end, but the researchers see a little issue in maintaining the status quo. (Parvaiz, Mufti, & Wahab, 2016; Laughlin, 2004).

1.1 Justifying of use of Pragmatism for Mixed Method Research

Mixed methods research was defined as research which collects, analyses data integrates the results by the investigator and draws inferences using both qualitative and quantitative approaches in a single study (Creswell, 2014). However, in a historical review, Mayoh, & Onwuegbuzie (2015) report that specialists gave nineteen definitions of mixed methods in the field. The scope of these definitions was varied; philosophical conceptualisations, logical rationalism, practical guidelines, domains, principles, validity and orientation all formed common themes that identified throughout (Mayoh, & Onwuegbuzie, 2015). The authors conclude that mixed methods research is the use of a combination of qualitative and quantitative methods which stand as a third research paradigm in itself.

Mixed methods are essential in the field of special education, since they offer particular value when helping researchers solve problems in educational or social field (Teddlie & Tashakkori, 2002). Moreover, mixed methods can be used to answer questions that could not be answered using any other approach. Most researchers use mixed methods to enrich their ability to understand and address the problem under study field (Teddlie & Tashakkori, 2002). However, the mixed method has some difficulties have reported in mixing qualitative and quantitative methods. The first cause is differences in paradigmatic background and the practicality of implementing combined methods (Mayoh & Onwuegbuzie, 2015); Happ et al., 2006; Creswell, 2014). Nevertheless, mixing both the qualitative and quantitative methods do not necessarily mean mixing their paradigms (Mayoh & Onwuegbuzie, 2015; Johnson, Onwuegbuzie et al., 2016). Thus, the mixed method is essential for experimental research to rationalise any combined procedure by demonstrating why this combination is appropriate for a certain study and how it is to implement. In other words, the feasibility of any proposed research approach, whether it uses a single or mixed method, depends on its suitability to answer the research questions and on what type of data can be produced (Mayoh & Onwuegbuzie, 2015; Robson, 2002; Creswell, 2014). Mixed methods research can combine the individual strengths and practical benefits of the methods used while overcoming the possible inadequacies of each approach (Johnson, Onwuegbuzie et al., 2016; Creswell, 2014). Combining the two types can result in a productive, holistic, objective and complementary approach. Also, that cannot be achieved if a single research method is used (Mayoh & Onwuegbuzie, 2015; Johnson and Onwuegbuzie, 2004; Brannen, 2005; Happ et al., 2006; Dunning et al., 2008). Moreover, inclusion the two types of the method can inform theory and practice relating to a particular research question; hence, data analysis goes beyond the meaning of numbers or words in isolation from each other (Mayoh & Onwuegbuzie, 2015; Bryman, 2006). Therefore, in this study the researcher selected this approach order to conduct a cohesive and sound research academically, researchers are required to support the use of mixed method with some form of methodological paradigm along with its ontological and epistemological justifications (Parvaiz, Mufti, & Wahab, 2016).

Pragmatist approach emerged as a result of the contradictions between approach positivism and interpretive approach. Where the approach positivism uses deductive reasoning, and aim to confirm often a well-established theory employing primary data analysis in the research. In contrast, the interpretive approach often draws upon inductive reasoning where the purpose is development of theory (Morgan, 2007).

On the other hand, pragmatism employs an ‘abductive’ reasoning process which moves back and forth between an inductive and a deductive reasoning process (Morgan, 2007). In other words, the abduction process is the spontaneous conjectures of instinctive reason of finding theories that might explain an unexpected fact (Patokorpi, 2006).

Pragmatists have believed that there is a “real world” and the people have their unique interpretations of that world (Morgan, 2007). Thus, a pragmatist may do not depend on or accept the 'subjectivity' and instead adopt the notion of ‘inter-subjectivity’. For example, as Pansiri (2005) declared, “for pragmatists, values play an important role in conducting research and interpreting results, and the researcher is advised to accept external reality and choose explanations that best produce desired outcomes” (p. 198).

Regarding the method of enquiry, pragmatism embraces the two extremes espoused by positivism/post-positivism and those supported by interpretivism. The former emphasizes quantitative methods as opposed to interpretivists’ qualitative approaches. Not surprisingly therefore pragmatism has been hailed as the foundation of

mixed-method research (Tashakkori & Teddlie, 1998; Teddlie & Tashakkori, 2003, p. 197)

The rationale for the adoption of pragmatism to data analysis and data collection method links directly to the purpose and the nature of the research problem which is being posted (Creswell, 2003). In pragmatism, instead of the method being dominant, the research problem is viewed as the most important concern (Creswell, 2003). Often the adopted data collection methods (interview, questionnaires, observation and articulation/documentation etc.), narratives (qualitative and quantitative) and the analysis (descriptive, factor, content, thematic and discourse etc.) are deemed to be the most likely factors to provide a deep insight into the research problem (Creswell, 2003; Mackenzie & Knipe, 2006). Therefore, pragmatism explicitly hails the foundations for the mixed method researcher.

Parvaiz, Mufti, & Wahab (2016) confirmed that the Pragmatism studies being less using common in researches because from the researcher's point of view, the most researchers rely on the usual methods (critical theory, realism, and interpretive) found in previous studies. It also seems that there may be a lack of pragmatism and mixed method research in Saudi Arabia, where there have been one relevant research studies of UDL carried out by Saudi researcher, namely, Al Salem (2015). One of the most significant characteristics of these studies is that they were based on a mixed method, with using pre-test, post-test, questioner and quasi-experimental designs.

On the other hand, there is a great start to some research in the special education field to use the mixed method with using UDL. Also, this study was based on those researches to help the researcher to use this method in this study, as the most important of these researches by Marino, Gotch, Israel, Vasquez III, Basham & Becht. (2014), Hall, Cohen, Vue & Ganley (2015) and Maginot(1992). Those researches using UDL and technology to learn the students with learning disabilities.

Therefore, from the above is clear that there is a gap in the field of special education research, in terms of the decrease a number of researches which is using mixed style and pragmatism. Therefore, this gap will be bridged by the use of pragmatic theory and mixed approaches to enrich the field of education for these modern methodologies.

1.1.2 The rationale for using mixed methods to collect data:

Figure (1) illustrates the emphases of mixed research (Johnson &Christensen,2017)

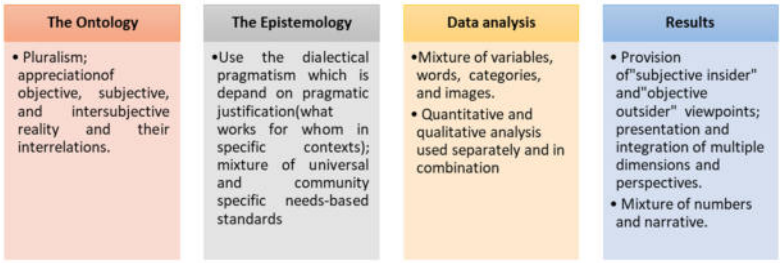


Figure (2) illustrates the emphases of the mixed approach

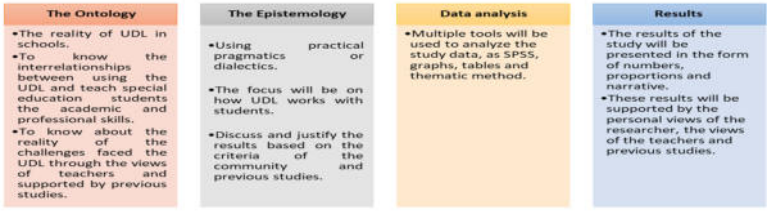


Figure (1) and (2) illustrates the reality of ontology and epistemology with a mixed method and the reality of UDL in schools. By collecting qualitative and quantitative data to compare the outcomes of students' improvement before and after using UDL. Also, mix method collect qualitative and quantitative data to learn the interrelationships between using the UDL and teach students special education of academic and professional skills. According to a huge of studies that are interested using UDL with disabilities students in education, by such as the observation lists, pre and post-test to collect information to detect the impact of UDL in the education of students special education the academic and professional skills (Coyne, et al, 2012;Kennedy, et al, 2014; Hall, et al, 2015; Marino, et al, 2014;Vesel & Robillard, 2013; Katz, 2013;Miller & Lang, 2016; Webb & Hoover, 2015;Courey, Tappe, Siker & LePage, 2013; Spooner, et al,2007; Katz, 2015).

1.2. Procedural considerations in using the mixed methods approach:

Mix method focused on that combining qualitative and quantitative methods should threaten neither the validity of the design nor the findings (Sandelowski,2000, Sale et al., 2002, Tashakkori and Teddlie, 2003, Stewart et al., 2008). According to divide proposed by Creswell (2009) to the design of the mixed method, there are six types.

The first type: sequential explanatory design, where are collected and analysis of quantitative research data in the first stage followed by the collection and analysis of qualitative data in a second stage. The second type: sequential exploratory design, which adopts on collecting and analyzing qualitative data first and then moving on to the process of collecting and analyzing quantitative data. The third type, sequential transformative design: where depends on the questions of the supposed search which will be answered by the researcher, and this design does not adhere to any sequence in the process of quantitative or qualitative data collection. The fourth type, concurrent triangulation design: This strategy collects quantitative and qualitative data in one phase. Followed by a phase comparing qualitative results with quantity and whether quantitative results are consistent with qualitative results. The fifth type, concurrent embedded design: which rely on data collection using quantitative and qualitative approaches in a single stage with a focus on the basic form of one of the collection of scientific research data. The sixth type, concurrent transformative design: where this strategy uses a research theory as well as the application of quantitative and qualitative approaches to data collection together in the same stage, which are used both methods equally important or one of them may be of greater importance (Chen,2009; Creswell, 2009). Table (1) shows more differences between mixed method designs.

The table (1) The differences between designs for the mixed method by Creswell & Clark (2011).

The designs	Explain the designs
Sequential Explanatory Design	This method is a two-phase design where the quantitative data is collected first followed by qualitative data collection. The purpose is to use the qualitative results to further explain and interpret the findings from the quantitative phase. For example, a survey may be used to collect quantitative data from a larger group. Members of that group may then later be selected for interviews where they can explain and offer insights into their survey answers.
Sequential Exploratory Design	This method is also a two-phase design. The qualitative data is collected first, followed by collection and analysis of quantitative data. The purpose of this design is to develop an instrument (such as a survey), to develop a classification for testing, or to identify variables. Using the information from journals or diaries to develop an appropriate survey to administer to a larger sample would be an example of this design.
Sequential Transformative Design	This type of design also has two phases, but allows the theoretical perspective of the researcher to guide the study and determine the order of data collection. The results from both methods are integrated together at the end of the study during the interpretation phase.
Concurrent Triangulation Design	In this design, qualitative and quantitative data are collected concurrently in one phase. The data is analyzed separately and then compared and/or combined. An example would be if a researcher collected survey data and interview data at the same time and compared the results. This method is used to confirm, cross-validate or corroborate findings. It is often used to overcome a weakness in one method with the strengths of another. It can also be useful in expanding quantitative data through collection of open-ended qualitative data.
Concurrent Nested (Embedded) Design	This design includes one phase of data collection in which priority is given to one approach that guides the project, while the other approach is embedded or nested into the project and provides a supporting role. The embedded approach is often addressing a different question then the primary research question.
Concurrent Transformative Design	This method involves concurrent data collection of both quantitative and qualitative data. It is guided by a theoretical perspective in the purpose or research question of the study. This perspective guides all methodological choices and the purpose is to evaluate that perspective at different levels of analysis.

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Concurrent Transformative Design This method involves concurrent data collection of both quantitative and qualitative data. It is guided by a theoretical perspective in the purpose or research question of the study. This perspective guides all methodological choices and the purpose is to evaluate that perspective at different levels of analysis.

The mix method composed of two main steps: the quantitative step followed by a qualitative one, in a sequential explanatory design. In other words, the qualitative step was explanatory, intended to provide an in-depth understanding of the end-open questions and observation lists findings. The advantages of conducting the explanatory design were that It consists of two phases making application for researchers easier, because the researcher conducts the two methods in separate phases and collects only one type of data at a time (Chen, 2009; Creswell & Clark, 2011).

Although the mix method designs are clear and accurate, this approach still faces challenges specific to this design. The challenges are: this design requires a lengthy amount of time for implementing the two phases. Also, the researchers suffer to difficult keep on the same individuals for both phases in a collection the qualitative data and quantitate data. Thus, it can be difficult to secure internal review approval for this design because the researcher cannot specify how participants will be selected for the second phase until the initial findings are obtained (Creswell & Clark, 2011; Creswell, 2014; Johnson & Christensen, 2017).

Finally, Mix method help to collect the qualitative data and qualitative data. However, the goal of the quantitative part was to explore preferences of the participants, while the role of the qualitative part was to explain these findings. For example, using questionnaire, open questions, observation, interview, pre and post-test. Therefore, to reveal the impact of UDL on improving learning for people with special needs.

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