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An Analysis about the Influence of Culture Transfer on Legal Translation from the Perspective of Intercultural Communication

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ABSTRACT

With the increasingly rapid social development, collusion and integration of different culture around the world, legal translation also becomes an exceedingly important tool in exchanges of laws. Legal translation, in essence, is a non-negligible aspect of intercultural communication, because legal translation is not only a transfer process from one language to another language, but also a study process of various legal cultures. In traditional researches about legal translation,most scholars only have a preference to pay more attention to the faithfulness and exactness of target language, but ignore the significance of cultural elements that are key limitations to the readiness of legal translation. Researchers can take advantage of culture transfer, which is a strategy to avoid misunderstandings in process of legal translation for the intention of improving the quality of legal texts. In this paper, legal translation refers to translation between English legal texts and Chinese legal texts.

Keywords: Legal translation; Culture transfer; Intercultural communication

1.Introduction

In this section, the author makes a brief introduction about intercultural communication and the relationship between legal translation and intercultural communication, which is the basis of the whole paper.

1.1Brief History of Intercultural Communication

The conception of intercultural communication firstly flourished in the America, which was put forward by Edwar Hall in his book called silent language and was formally established until 1970s. After 1980s, the conception became more and more mature. Another scholar Gudykunst (2003) summarized fifteen theories of intercultural communication, which includes the reduction of uncertainty theory; the negotiation of cultural identity theory; negotiation of face theory; attribution theory; intercultural communication network theory, adaptation theory and cultural scale theory. In china, some famous scholars such as Wenzhong Hu, Shijie Guan once made many researches about intercultural communication in the most early time.

1.2Definition of Intercultural Communication

Chinese famous scholar Huwenzhong once defined Intercultural communication as people with different cultural backgrounds engaging in the process of communication [1].

Some other scholars also refer to intercultural communication between people whose culture perceptions and symbol systems are distinct.

1.3Relationship between Intercultural Communication and Legal Translation

Sarcevic once believed that legal translation is an intercultural communicative activity within the legal mechanism [2]. Intercultural communication is mainly categorized as verbal communication and non-verbal communication. The author believes that legal translation is a kind of verbal communication. Besides, there are two main legal systems around the world, one is the civil law, the other is the common law. Different legal systems represent different legal cultures and time backgrounds, simultaneously, language is the most carrier and portrayal of culture. Legal translation is an important medium for communicating legal culture of different countries. The conception of legal culture was put forward by one American scholar called Lawrence in 1969, he once supposed that legal cultural refers to the public's understanding, attitude to legal system and model of legal behavior [3], so people can fully acquire knowledge about different legal culture through legal translation. Famous scholar called Dujinbang believes the key point of legal translation is more than conversion of legal language, but a kind of important legal activity [4].

2.Culture Transfer in Legal Translation

In this section, the author will mainly introduce the definition of culture transfer, the relationship between legal translation and culture transfer and the implication of culture transfer in legal translation. Scholar called Zuoliang Wang once pointed that translators deal with individual words, but is confronted with two completely different kinds of texts [5]. The translator uses words, phrases sentence patterns to build a bridge of communication between different cultures, which is the basis of culture transfer [6].

2.1Definition of Culture Transfer

Culture transfer refers to the process of passing ideas, experiences, skills and other cultural characteristics from one society to another, from one place to another. Culture transfer also can be named after cultural diffusion or cultural transmission. The culture transfer is on the premise of producing cultural differences, which is divided into positive culture transfer and negative culture transfer. The negative transfer means that mother language will exert an adverse influence on translators, which makes translators exceedingly rely on the rules of mother language to have a wrong grasp of target language. Positive transfer means that using thinking of mother language will promote translators' understanding in target language. The author believes that one communicator may be affected by mother culture when he explores target culture, so culture transfer can be viewed as the psychological process from the mother language to target language and process of thinking and revising [7].

2.2Relationship between Legal Translation and Culture Transfer

Translation is one of branches of linguistic and legal translation is no exception. Language is the carrier of culture. Legal culture is a network of values and ideas related to law [8], but

most translators are ignorant of effects of culture elements on legal translation characterized by faithfulness and exactness. The author supposes translators make sense of culture transfer to deal with the balance of source language and target language. For example, when translating foreign legal texts into Chinese, translators can choose to take more Chinese culture into consideration to the intention that makes target language conform to Chinese code of thinking and habit of expression. On the contrary, when translating Chinese laws into foreign texts, translators can follow the express style of foreign legal documents. Legal translation is an important communication tool, which plays a role in exchanging and promoting legal culture from different countries and nations, so the culture transfer can be used as a strategy to improve the quality of legal translation. The relationship between legal translation and culture transfer can be viewed as the process that culture limitation or assistance to transfer in legal language [9].

2.3Application of Culture Transfer in Legal Translation

The key point in legal translation is how to take advantage of positive culture transfer and avoid negative culture transfer. Simultaneously, the author holds the opinion that the culture transfer has a relationship with the theory of domestication and foreignization in translation put forward by an American scholar called L.venuti in his book Translator's invisibility [10]. Arguments about adopting the domestication or adopting foreignization has existed until now. The author believes adopting domestication or foreignization is decided by concrete types of translation texts. Translators can learn lessons from the cognition of vocabulary, grammar, sentence pattern of mother language when they translate English legal texts into Chinese texts, In other words, the author can take the attitude of the ethnocentrism to adopt domestication to make source language conform to the value of target language, which is also the mirror of positive culture transfer. On the contrary, translators should choose to adopt the foreignization to accept the expressing style of source language and cultural differences when translating Chinese legal texts into foreign legal texts, which is also the mirror of the positive culture transfer.

3.Culture Transfer in Different Types of Legal Translation

In this section, the author lists some examples to introduce culture transfer in different types of legal translation, which are respectively translation of legal terms, translation of legal vocabulary and translation of legal texts. This section is the core part of the paper.

3.1Culture Transfer in Translation of Legal Words

There are many legal English words in legal translation. The best way to apply culture transfer to the translation of legal words is to possess the sense of intercultural communication. For example, "lineup" means one person queues up, but translators shall translate it into "queue up and recognize", because "lineup" in legal translation refers to a method by which police ask eyewitnesses to identify suspects. In this way, the police arranges a group of people to stand in a row, including the

witnesses who claimed to have seen the suspect. The police ask the eyewitness to identify the suspect. For another example, "straw man" refers to dummy made of rice straw, but in legal translation, "straw man" in legal translation means the person who makes fake evidence for others. "Discover" means "find out" in common life, but in legal translation, it should be translated into"show somebody legal evidence". "Action" means somebody takes some measures in common life, but in legal translation, it should be translated into "litigation", which means somebody is sued for violating laws. "Exhibit" should be translated into "evidence for proving somebody's crime instead of "show somebody something. "Maritime" should be translated into "maritime business". In summary, the phenomenon of incorrectly translate legal English words can be attributed to cultural vacancy. There is no way avoiding affects resulting from cultural differences when meeting legal English words, so translators firstly take foreign legal system into consideration to look up specific legal implications and make some semantic complements to deal with cultural vacancy which requires translators to give full play to positive culture transfer [11].

3.2Culture Transfer in Translation of Legal Terms

Legal translation is a kind of very professional translation, which needs translators to have a good knowledge of legal terms. For example, the word "will" is usually viewed as model word and means "somebody has a plan to do something", but in legal translation, it means "a legal document of one person's disposition of his estate after his death. "Brief" is equivalent with "concise", which means using few words can convey important information, but in legal translation, it should be translated into lawyer's defense document". For another example, "slander" not only means one person says bad words behind somebody to do great damage to reputation, but also refers to oral slander instead of written slander. "Equity" refers to equivalence, but it should be translated into "a kind of legal system-common law", in legal translation, which was oriented from Britain since the 14th century. "Guardian" should be translated into "somebody who performs the duty of raising children or looking after the old instead of "protector". "Fruit of poisonous trees "means the evidence through unlawful approaches in legal translation instead of common fruit with poison. "Bargaining" should be translated into "plea bargaining" instead of "transaction", which means one kind of deal including defense and action. "Next friend" refers to "agent". "Black-letter law should be translated into "important articles of law. "Access right" should be translated "parent's right to visit their children" instead of "permission to enter". "Indecent assault" refers to one kind of unlawful obscene actions instead of "rude abrupt attack". "Fruit of the crime" is translated into "illegal income from actions violating laws". "Baby act" should be translated "laws stipulating that minors shall not assume legal responsibility [12]. In summary, translators are supposed to take a correct attitude to legal culture differences and break culture restrict to legal translation, making each part conform to expression habit of target language.

3.3Culture Transfer in Translation of

Legal Slang

Legal slang widely exists in foreign legal texts, which is originated from some significant and momentous legal events. Only translators firstly refer to some composition and references can make it easy and exact to deal with legal slang. For example, in the 14th century, British people put red herring in places where foxes were present to test the hunting dogs of the ability to testify if they can resist extra smells and continue to find other foxes. British at the end of the 19th century, until the 19th century, British people began to use "red herring" to refer to false clues or fake faces presented by people in order to confuse their opponents. "Fee simple" was in the background of the appearance of the system of land partition in feudal period of England, so it should be translated into "real estate of which heirs have an absolute right to dispose". [13] "Friend of the court" should be translated into "office of juvenile's legal assistance"instead of "friends of court". It is necessary for translators to have a knowledge of the background of legal allusions, which prove the necessity of mastering the culture transfer.

4.Strategies about How to Utilize Culture Transfer in Legal Translation

In this section, the author mainly introduces some strategies about how to apply cultural transfer to legal translation, which is aimed at improving the readiness and efficiency of information communication of legal translation. It is difficult to understand and translate legal language because translators not only achieve the equivalence of language function, but also achieve the equivalence of legal function [14].

4.1Avoidance of Excessive Culture Narcissism in Legal Translation

In any cognitive activity, people are accustomed to take themselves as criterion of judgement. Cultural narcissism refers to people usually judge everything in accordance with their opinions about certain culture. That is to say, anyone always thinks his culture is most advanced [15]. In legal translation, the author believes the most important thing for translators is to avoid undue culture narcissism and have a respect for foreign legal culture, taking differences in two legal systems into full consideration to explore the balance between source language and target language. In legal translation, the author holds the opinion translators should avoid adopting the Ethnocentrism. Translators are not only advised to pay attention to expressing style and cultural implications of own source legal culture, but also consider the characteristics of target of target legal culture.

4.2Adoption of Different Translation Strategies in Legal Translation

The author believes translators had better to take corresponding translation strategies according to different legal translation texts, which includes direct translation, creative translation and free translation. Directive translation keeps both the content and the type of the original text. The free translation only keeps the content of the original text and is not limited by form of content. The creative translation means that translators need to play their subjectivity. The author believes that culture transfer is presented in the creative translation and free translation, because these

two translation methods are also the mirror of translator's second creation. In most cases, translators can easily find the corresponding Chinese implications in the dictionary when they meet most legal words or terms, such as evidence, arbitrator, civil and so on. Secondly, when confronted with some special foreign legal expressions with specific cultural background, such as "country agent", "halfway house", "caveat" and so on, translators can adopt the strategy of free translation because these legal expressions are shaped in special backgrounds, which is in accordance with the function of culture transfer. Translators should take concrete contexts into consideration in legal translation to properly expand implications of legal words or terms to make some necessary cultural supplement. In summary, the core of mastering culture transfer is to flexibly adopt different translation strategies.

4.3Improvement of the Consciousness of Intercultural Communication

Legal translation is not only a simple conversion process from one language to another language, but also a process of translators' second creation and culture communication. Translators should keep the mind that legal translation is a magnificent intercultural communication activity, translators can improve the consciousness of intercultural communication from three aspects, which are respectively elimination misunderstandings of cultural differences, breaking the stereotype of legal translation, avoidance of the ego-ethnocentrism and concentration on the culture shock in the process of legal translation.

4.3.1Eliminate Misunderstandings in Expression Differences

Expression differences is one of cultural differences, which are the basis of any kind of translation. For example, native English speakers are accustomed to using passive sentences, which frequently exists in translation of science and technology, because these passive sentences are more objectively describe truth without translators' subjectivity. The same applies in legal translation characterized by exactness and faithfulness, but Chinese native speakers are habitual to use many verbs. Besides, there are also large amounts of complex compound sentences linked by many conjunctions, but in Chinese texts, people usually use many short sentences and four-word phrases. In any kind of English texts, people's attitude and feelings are placed in front of events, but Chinese always firstly list events and then express feelings and ideas. In English texts, there is a phenomenon that pronouns and synonyms are used to replace person or thing mentioned above [16]. The author believes a qualified legal translator firstly has a comprehensive knowledge about these differences, which will lay a solid foundation in improving the quality of legal translation.

4.3.2Break the Translators ' Stereotype of Legal Translation

The famous scholar called Wenzhong Hu in his writings once defined stereotype as one kind of belief about attribute of personality and group. In other words, people will shape the first impression on something or somebody affected by the specific culture. In many years of legal translation practice, most translators only view legal translation as a medium of transferring foreign laws, exceedingly emphasize the

mechanical equivalence between word and word, sentence and sentence, but overlook the hidden cultural implications and feedback of readers. So it is necessary for readers to break the stereotype from the perspective of intercultural communication.

4.3.3Avoid Legal Translators ' Ethnocentrism

Ethnocentrism is a phenomenon that people get used to understand and measure other cultures in accordance with concept and standard of own culture [17]. For most legal translators, they all believe own legal culture is superior to other legal culture. It is emphasized that translators should be centered in type of legal texts and demand of target language. The author believes that any qualified translators should show enough respect for bilateral culture, trying their best to get rid of effects on legal translation derived from ethnocentrism.

4.3.4Pay Attention to the Culture Shock in the Process of Legal Translation

"Culture shock" was firstly put forward by a scholar called Oberg and refers to people's negative feelings or unaccustomed symptoms to certain culture. In legal translation, the author believes the phenomenon of culture shock is presented in the translation of legal slang. Most translators may not make sense of these true meanings of legal slang and only adopt the direction translation according to literal meaning, which gives rise to culture shock and makes readers become confused, surprised, and even disguised, so it is a necessity for translators to improve cognition about legal translation to avoid bringing culture shock to readers.

4.3.5Explore the Aesthetic in Legal Translation

For any translator, another task is making full use of culture transfer to explore the aesthetic in legal translation. The author believes the key point of aesthetic in legal translation is to express and communicate the principle of justice, humanistic care and feelings. Legal aesthetic covers three aspects, which are the beauty of exactness, the beauty of fuzziness, the beauty of concise [18]. Translators can adopt different translation strategies and culture transfer to give full play to the aesthetic of legal translation.

5.Conclusions

In this paper, the author creatively supposes that culture transfer has an influence on legal translation from the Perspective of Intercultural Communication. While ensuring the accuracy of legal translation, translators can appropriate some strategies of culture transfer in order to achieve the purpose of communication between different legal cultures [19]. Situations and contexts in culture affect people's interpretation and transmission of information, which is also suitable to legal translation [20]. In this paper, the author respectively makes a brief introduction about the intercultural communication, relationship between legal translation and culture transfer, the concrete application of culture transfer in legal translation and strategies about how to utilize cultural transfer in legal translation. To some extent, an y translation is an intercultural communication activity. The author believes legal translators should be skilled at mastering all kinds of basic translation strategies and laws of different countries. What is more important, they should gradually improve sense of intercultural communication and study to take advantage of culture transfer to improve

the quality of legal translation. The accuracy of legal translation not only refers to the literal exactness, but also emphasize the validity and reliability of intercultural communication result, which is the innovation of the whole paper.

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Applying Constructivism in Neurodiverse Classrooms

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ABSTRACT

Cognitive development theories differ on how young students can meaningfully process new information and retain that information for future knowledge–building through scaffolding within their zone of proximal development. More traditional theories like the cognitive load theory adhere to the rote memorization approach by categorizing students as passive learners and the teachers as initiators who provide information in a structured, often rigid format, to be stored and retrieved for future application using their working memory. In contrast, the more progressive theories, like constructivism, are premised on the belief that students should proactively initiate their own learning while teachers act more as facilitators. The current trend in government policy under ESSA is to embrace the latter approach in the classroom, which is also more inclusive of all types of students, especially neurodiverse students. Moreover, teachers can utilize the wider range of assistive technology tools to accommodate and support their students' unique learning styles.

Keywords: Learning; Constructivism; Cognitive load theory; Zone of proximal development; Assistive technology

1.Introduction

When children struggle academically in the classroom, the traditional recourse may have been to address their needs for support by classifying them as limited in intelligence and capability before placing them in special education classrooms under the presumption that they would hold back the rest of the class in a regular classroom setting [1]. However, the more progressive pedagogical approach is to integrate these students, recognizing them as equally valuable and beneficial to a dynamic classroom environment. They may have different methods of learning, as well as their own challenges, but their unique set of circumstances can be overcome with the right accommodations and support.

Constructivism is a theory that allows these types of students flexibility in their mode of learning rather than forcing them to abide by a rigid set of expectations which may not be effective or in alignment with their learning style [2]. This theory, along with the more traditional teaching theory known as cognitive load theory, will be explained and discussed in detail in this paper. In addition, the paper will delineate how educators can implement effective teaching strategies in their classrooms, especially with the increasing availability of more advanced assistive technology to support students with varying academic and intellectual needs.

2.Constructivism, Cognitive Load Theory, and the Zone of Proximal Development

To implement a more effective instructional design in alignment with the cognitive development of young students, one must consider the leading theories on how they process

new information. Cognitive Load Theory asserts that cognitive functions, such as short-term and long term memory, are essential considerations of instructional design [2]. The theory is, in part, based on evolutionary educational psychology which posits that processing biologically secondary knowledge mimics the architecture of biological evolution [3]. Specifically, while biological primary knowledge such as language skills are naturally acquired, biological secondary knowledge is acquired through problem-solving, reading, listening, and researching in a more structured educational setting. Writing, science, and math also fall within this latter category [2].

Before secondary knowledge can become part of one's general knowledge base, the information must first be organized in the working memory, also known as 'short-term' memory, which is limited in capacity and duration. Once the information is acquired and interpreted, it can be stored in the long-term memory, which has much great er capacity [4]. For example, in the process of reading, knowledge stored in the long-term memory region can be retrieved as working memory in order to generate an action. In other words, the knowledge of how to read, which is stored in the long-term memory of a literate individual, may be brought back as working memory to function together with the new information to facilitate learning [4]. Moreover, although working memory is limited when working with new information, it is not when working with information previously learned and processed before being stored in one's long-term memory [4].

Based on cognitive load theory, building a breadth of information stored in long-term memory can be efficiently achieved through a commonly practiced teaching method called the "worked example effect" [2]. This approach encourages showing a learner an example of the completed work before asking them to perform the task. Studies have proven this method to be effective in improving student performance [2]. The rationale for this method is that a "worked example" reduces the workload of the working memory, because it eliminates possible alternative actions. With more "worked examples" stored in the long-term memory, students can learn to develop solutions based on previous "worked examples" and think deeper by themselves. Essentially, to formulate better solutions while processing new information, general knowledge acquired from previous learning, including worked examples, must be stored in the long-term memory [2].

Over the years, cognitive load-based approaches have been criticized as ineffective in teaching students to self-monitor or self-regulate [5]. Specifically, some cognitive development theorists believe that self-regulation should be cultivated in a learning environment in which students have more autonomy and are encouraged to be proactive in acquiring knowledge. They argue that self-generated thoughts, feelings, and behaviors can be channeled to attain desired goals, thereby increasing self-satisfaction and sustained motivation [5].

Applying this cognitive development theory to the classroom setting, constructivists advocate that teachers should foster a deep and meaningful learning environment in which the students develop their critical thinking skills [6]. Constructivist approaches, which recognize the interplay of individuals with their environments, were first applied in classrooms as early as the 1960s [7]. Jean Piaget, a Swiss psychologist, was one of the first people to develop the idea of constructivism [7]. Piaget's theories, especially those related to the early years of development, are still used today, such as the idea that as neurotypical children (children without clear developmental disorders or drawbacks) grow, they reach milestones at certain ages [7]. These approaches are used in teaching institutions

across the world in a wide range of subjects such as math, science, and humanities.

3.Methods

The constructivist method usually calls for more group work, as students are encouraged to critique each others' ideas and answers while working together to solve problems in experiments and projects [6]. Allowing students to work at their own pace and learn with their own understanding of things creates a more flexible learning curriculum than would be likely if all subjects were taught through a single method from one teacher. Research shows that constructivism promotes creativity and engagement in students, although many different contextual factors and individual personality traits, as well as learning abilities, must also be considered [8].

Lev Vygotsky, a psychologist from the same era as Jean Piaget, posited a similar theory about the cognitive development of children,. Vygotsky, however, placed greater emphasis on the importance of societal and cultural impacts. He argued that social interaction is the most essential component of learning and development and that biological development and environmental factors conjointly affect learning outcomes. His social theory consists of three principles: (1) social interaction plays a key role in the acquisition of knowledge, (2) some aspects of cognitive development are limited to a specific developmental periods, and (3) that the process rather than the product of learning must be assessed for humans to fully learn and understand [7,9].

Vygotsky furthered Piaget's theory by classifying all tasks into three categories: (1) those we can do by ourselves, (2) those we can do with guidance, and (3) those we cannot do at all [9]. The first and third categories are not particularly helpful to learning, as doing something one is already good at does not help them develop, and attempting something that is too advanced or unfamiliar for a particular age will be too frustrating to facilitate learning [9]. For example, assigning basic addition tasks to an average high schooler would be pointless, just as a kindergartener should not be attempting calculus without having first mastered basic addition. Instead, the focus of learning should fall within the second category wherein students attempt things that they can do with some guidance.

In developmental psychology, the second category, where most learning occurs, is called the zone of proximal development [4,9]. This zone can be applied in a wide range of subjects, from mathematical calculations to daily problem solving, to aid a child's cognitive development. The zone itself is essentially the gap between a learner's task completion level and their potential for task completion under guidance. Vygotsky contention was that the potential for future development, and not a simple evaluation of task completion, is crucial for assessing and promoting cognitive development [7,9].

Similar to Vygotsky's zone of proximal development, scaffolding refers to interactive instructional relationships between teachers and their students that enables students to solve problems beyond their unassisted efforts [4,10]. Scaffolding involves providing assistance to students only upon reaching the upper threshold of their respective zones of proximal development. Through scaffolding, students learn new skills or concepts, which culminates in completing a task successfully, ultimately reaching autonomy via a gradual transfer of knowledge or learning strategies from the teacher to the student [10].

4.Results

4.1Constructivism in the Neurodiverse Classroom

Over the years, constructivism has moved from research into classroom application. Traditionally, too much emphasis was placed on

curriculum and not on student thinking, which discouraged viewing students as original thinkers with opinions about the emerging world around them [11]. While some may argue that explicit instructions better serve neurodivergent students, others have promoted constructivist strategies that encourage students to develop ideas by collaborating with their teachers and peers [6]. Constructivism has also helped bridge the learning gap in inclusive classrooms by assisting a student with special needs with active participation and learning tailored to the student's own learning characteristics, the task at hand, and contents that are already familiar to the student [12].

Since constructivism is based on the notion that people acquire knowledge by constructing their own understanding of the world around them, it prioritizes student-dominated learning and interaction [4]. However, teachers in the classroom still play a critical role as facilitators rather than information conduits. As facilitators, teachers must show students scaffolding techniques through which they can connect their past experiences to new information, thereby enhancing their knowledge [6]. Moreover, with careful design appropriate technology tools can provide additional assistance in supporting the students' learning especially in neurodiverse classroom settings [6].

Constructivist classrooms emphasize real-life problem-solving, problem-based learning (PBL), independent investigation, the pursuit of personal interests, simulation, discussion-collaborative learning, think-pair-share, and the utilization of higher-order thinking skills [14]. Constructivism is based on the idea that everyone, whether neurotypical or with special needs, learns differently. Therefore, student-centric learning can allow all students to build their own ideas and learn in their own ways. Others believe that constructivism can help students with neurological conditions such as ADHD, bipolar disorder, or fetal alcohol spectrum disorder because it allows them to pace the lessons themselves and still learn alongside their peers[12].

In this spirit, the Every Student Succeeds Act (ESSA) replaced No Child Left Behind as the national educational policy in 2015. ESSA states that the Individualized Educational Plan (IEP) team determines when a student with a significant cognitive disability should be evaluated under an alternative assessment standard so long as the determination is consistent with guidelines established by the state (Section 1111 (b)(2)(D)(ii)(I)). ESSA applies more constructivist approaches to both assessment and instructional design, even permitting the use of assistive technology when appropriate, especially for students experiencing learning disabilities or neurodivergence. Despite these potential benefits, some argue against construc tivist approaches in teaching because tailoring lessons to accommodate each student may be time-consuming and inefficient [13].

4.2Working Memory of Neurodivergent Students

Working memory is a basic mental skill which allows the brain to hold information in the short term, thereby facilitating learning and completion of tasks. Moreover, new information once acquired can be stored in long term memory but potentially retrieved as working memory when the need arises again in the future [2,3]. Children with learning difficulties such as ADHD or those with other executive function disorders who are neurodivergent may struggle to utilize this brain function and to perform everyday tasks [17].

One challenge that neurodiversity presents when being applied to autism is the fact that autism encompasses a wide range of learning disabilities that presents a multitude of different circumstances and challenges [18]. Further exploration is needed regarding how to address some of these learning challenges such as assisting in developing one's working memory in the classroom and beyond.

The ability to use working memory is especially important for young children in school because working memory is needed when performing tasks such as mental math, including helping children to visualize numbers and to apply mathematical functions in their heads [17]. Children working memory deficits have difficulty picturing numbers and holding them in their working memory order mentally manipulate them and produce correct answers. Working memory deficits may also hinder children's performance of physical tasks, as they may not remember in which order the tasks must be completed, or they may not be able to make sense of the instructions they are provided[19].

Children who appear to have working memory deficits may instead have attentional deficits [20]. In other words, rather than having difficulty holding the information in mind, the child may have initial difficulty paying attention to the instructions provided. It is worth noting that in the past few decades, studies indicate that many disorders of the brain or mind are not without benefits. For example, those diagnosed with autism spectrum disorder (ASD) appear to have strengths working with systems and identifying tiny details in complex patterns just as those with dyslexia seem to perceive peripheral or diffused visual information more quickly than neurotypical individuals [15]. Given such varied presentations and capacities, a full evaluation of a child's cognitive abilities may help uncover the factors involved in their academic difficulties [21]. This improved understanding may help assist educators in determining what, if any, assistive technologies may be effective in addressing the student's individual learning style.

4.3Importance of Assistive Technology in New Education Policy

Assistive technology refers to any technological device, item, piece of equipment, or product system that improves the functional capabilities of individuals with disabilities in bolstering their cognitive skills as well as in maximizing their attention span and time management [22]. Assistive technology may be viewed as more appropriate for low-functioning students, especially when main streaming them for social reasons, but high-functioning, learning-disabled students may benefit from such academic support as well [22].

To manage tasks and succeed in goal-directed activities, students need to have a wide range of executive skills, which consist of metacognition, appropriate behavior and actions, mental shifting, and sustained attention. When these executive functions are weak or lacking, the student can be hindered academically [23]. In order to reduce such obstacles, various assistive technologies may be employed to help meet each student's individualized needs. For example, for students who struggle with self-control, Book Creator, a software application, helps students with self-management in social situations [24]. In addition, the Self-Management Checklist Maker is a website that teachers can use to monitor their students, and which, in turn, can aid the student [24].

Low-tech prioritizing strategies, reflective journaling, and capturing thinking can help students develop their metacognition skills. Capturing thinking can be done through the utilization of technologies such as the Smart- Pen or AudioNote app, both of which record students as they talk themselves through an activity or assignment [25]. Cognitive flexibility, shifting, and organization manifest in the student's ability to follow a schedule and make connections across situations. These skills can be aided with technology such as Choiceworks, First-Then Visual Schedule, Time-Timer, and Wunderlist to help students manage time and make sure not to get lost throughout the day. Similar to scheduling, goal-directed persistence--the students' ability

to maintain their focus to accomplish a goal--can be extremely difficult for some, especially if they struggle to follow a schedule [24]. Goal-directed persistence can be aided with simple things such as calendars,checklists, and data chart organizers [24].

One effective strategy teachers use to jog students' working memory is the KWL (Know Want Learn) activity before introducing new but related information [25]. Another form of assistive technology can be software applications like graphic organizers or other visual aids like slides and flashcards used to further support learning. Moreover, websites like Khan Academy provide user-friendly tutorials online about multiple subjects.

While these learning tools assist students in the classroom, neurodiverse students also need social and emotional support. Despite the wide range of assistive technology available today, one of the most important factors in the successful mainstreaming of neurodiverse students is dependent on the positive attitude projected by the classroom teacher [28]. Hence, the teacher still plays a significant role by reinforcing the belief that the neurodiverse students are actually adding value to the classroom.

5.Conclusions

In recent years, appreciation for active learning through constructivism, wherein students acquire and process new information, has drawn attention to the importance of including and embracing neurodiverse students in the classroom. In the past, learning processes such as cognitive load theory expected students to simply absorb information instead of taking a more proactive role. Constructivism's broader acceptance has encouraged children to take greater initiative in the learning process, while teachers serve as facilitators rather than rote pedagogues. This approach can be more beneficial to neurodiverse students because students can tailor their learning experience to what fits them, rather than attempting to learn through a more rigidly structured methods. This cultural shift in learning may fundamentally change the structure of classrooms in the future.

More traditional, rigid learning models required students to absorb information as passive learners. Those who could not process the information readily were often placed in special education classes, in part because classroom teachers could not accommodate the unique learning styles of every student in their class. However, with the growing acceptance of constructivism, more educators are implementing student-led learning while utilizing advances in assistive technology. While educators recognize the importance of mainstreaming some neurodiverse students, teachers continue to play a critical role in supporting students socially and academically regardless of neurocognitive status. Teachers are indisputably vital to the learning process, even in constructivist classrooms.

Conflict of Interest

There is conflict of interest.

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Status of professional instrumentation practice and surgical area graduates in Paraguay

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ABSTRACT

Introduction: In Paraguay the school of Instrumentation and Surgical Area was created in 1996 linked to the National University, and in 2008 onwards other offers were created in the private sector. The Surgical Instrument Technician can work as instrumentalist, circulating nurse, general coordinator of operating rooms, and coordinator of the central sterilization unit. **Objective:** to know the work environment of the professional and licensed Surgical Instrument Technician in Paraguay. **Methodology:** descriptive, quantitative and cross-sectional study. The sample is 167 graduates, graduates of public and private institutions. Non-probability sampling for convenience, the data collection instrument is an electronic questionnaire. **Results:** 74% are women, 50% have an age range between 21 and 30 years old, 79.6% graduated from a public institution, 40% say they have moderate difficulty finding their first job in the field. Access to employment, 71% was through personal contacts, 72% is dedicated to work as Instrument Technicians, 60% have a job seniority of 1 to 5 years. Among the postgraduates, 30% are university didactics certified. **Discussion:** Surgical Instrument Technicians meet the requirements to perform other functions in addition to instrumentation and circulating nurses in the operating room. Similarly, other studies show less participation in the administrative area, teaching, marketing and sales. 20 years have elapsed since the first Technicians graduated, being a new profession, not given the importance it deserves. It is noteworthy that the state can save economic resources by hiring Surgical Instrument Technicians, since they are experts in aseptic care and competent in minimizing the amount of time the patient spends in surgery.

Keywords: surgical instrumentation; professional profile; labor field; instrumentation in Paraguay.

1.Introduction

The professional practice of surgical instrumentation is defined as the ability to participate in the surgical act, anticipating the surgeon's requirements, in the management of logistics, surgical instruments and equipment, providing aseptic techniques during the surgical act and also managing the surgical area. [(1)].

In Paraguay, in 1996 the School of Instrumentation and Surgical Area was created for the first time, under the Faculty of Medical Sciences, National University of Asuncion (UNA), at the same time the historical record of its creation by the University Superior Council is valid since 2003, according to Resolution 09534-00-2003. [(2,3)]. On the other hand, since 2008, four other academic offerings have been added in higher education institutions in the private sector, located in the Central Department, San Pedro, Alto Paran á and Itap ú a, offering bachelor's degrees and other technical degrees. [(4)].

Up to the first semester of 2022, there are 1,634 surgical instrumentologists with current professional registration at the Ministry of Public Health and Social Welfare, of which 433 are technicians and 889 are graduates. At the same time, the number of professional surgical instrumentalists serving in the Ministry of Public Health and Social Welfare is 182, placing national reference hospitals within the 15 of the 18 sanitary regions of the country. [5].

As for the clinical hospital under the Asuncion National University School of Medicine, in addition to its disciplinary training role, it also has a surgical instrument department with 42 staff members who fully perform nursing functions [6]. Likewise, the surgical instrumentation career has 16 instructors for the practice field, accompanying the students in the aforementioned hospital. [7].

It should be noted that, in Paraguay, the surgical instrument maker can work as an instrument maker, in the surgical act; as a circulator collaborating with the surgical team; as a general coordinator of operating rooms and as a coordinator of the sterilization center; as a general coordinator of operating rooms and as a coordinator of the sterilization center. [1]. Likewise, a Colombian study describes that the instrument maker can work in the areas of administration, teaching, research, marketing, sterilization centers, operating rooms, material supply, hemodynamics and cardiac perfusion. [8].

The research seeks to know the situation of the professional practice of instrumentation and surgical area graduates at national level. Among the study variables are the sociodemographic and professional characteristics, access to the first job, economic income and area of performance. The study provides knowledge about this new career that is expanding throughout the national territory. At the same time, it allows projecting actions for professional and academic development.

2.Methodology

Descriptive, observational, cross-sectional, cross-sectional study. Non-probabilistic sampling by convenience, corresponding to 167 graduates in surgical instrumentation, graduated from private and public institutions, who work in 9 departments of the country.

The data collection technique consisted of a survey, the instrument being a self-administered electronic questionnaire with closed questions, distributed through social networks and e-mail. The questionnaire made it possible to assess the sociodemographic and labor component. The sample included surgical instrumentation graduates from 2003 to 2022, who agreed to participate in the study; surgical instrumentation technicians were excluded from the study.

Sample collection technique: once the consent of the professionals was obtained, they were asked to complete the questionnaire. The data were analyzed using the Microsoft Excel computer system and represented in tables. The survey was anonymous and participation was voluntary, the confidentiality of the data was respected, and no harm or prejudice was done to the participants. The principles of autonomy, beneficence, non-maleficence and justice were respected, in accordance with the Declaration of Helsinki.

3.Results

A total of 167 surgical instrumentation graduates participated in the study, 79.6% from public universities and 19.4% from private higher education institutions, from 2003 to 2022. Corresponding to the Central Department, Alto Paran á , Itap ú a, San Pedro and six other departments of the Eastern Region. The age range from 21 to 30 years old is 50%, followed by 31 to 40 years old with 32.3% and 41 to 50 years old, representing 16.2% of the sample. Seventy-two

percent are single and 96% of the participants live in urban areas. At the same time, the monthly income of 32.3 % of the professionals is minimum wage, 25.7 % state that it varies according to the season, 23.3 % earn two minimum wages and 19.7 % say they earn more than three minimum wages (Tabla 1).

Characteristics	n	%
Gender		
Female	124	74
Male	43	26
Age range		
21 to 30 years	84	50
31 to 40 years old	54	32
41 to 50 years old	27	16
51 to 60 years	2	1
Marital status		
Single	120	72
Married	42	25
Other	5	3
Origin		
Central Alto	130	78
Paran á	18	11
Itap ú a	11	7
San Pedro	2	1
Monthly Income		
Minimum Wage	54	32
Variant	43	26
Two minimum wages	39	23
More than three minimum wages	31	19

Table 1. Sociodemographic and Economic Characteristics of Instrumentation and Surgical Area Graduates, 2023. (N=167).

Regarding employment status, 79.6% of the participants were trained at the Faculty of Medical Sciences of the National University of Asuncion, a public institution, and 19.4% in private higher education institutions. Regarding the time it took to get their first job, 43% said between 1 to 3 years, 26% started as students, 17% took more than 3 years and 12% after graduation. Similarly, regarding the difficulty in accessing the first job, 40% said it was moderately difficult, 33% said it was very difficult and 27% said it was not difficult.

Following the same line, the professionals were asked about access to current employment: 71% by personal contacts, 12% by competition, 7.5% through job offers, 5% through advertisements in the press and 4.5% by other means. Likewise, when consulting the areas of professional performance, with the option of checking more than one, the results show: as an instrument maker 72 %, as a circulator 30 %, teaching and research 17 %, as an administrator 17 %, trade of surgical medical supplies 9 %, sterilization 8.5 %, coordinator or head of the surgical area 6 %.

The number of links reported by the participants is one for 66%, two for 24%, three for 4.5% and more than three for 5.5%. The length of service predominated from 1 to 5 years for 60%, from 6 to 10 years for 14%, and more than 10 years for 26% of the professionals. Among the specialties in which instrumentologists work, 20% work in general surgery, 16% in traumatology and orthopedics, 15% in video laparoscopy, 6% in plastic surgery, 5% in neurology, followed by urology, pediatrics, otorhinolaryngology, sterilization, commercial and administrative areas.

On the other hand, when asked about the postgraduate studies or specialties that the professional has, 30% in university didactics, 18.5% say they have none, 13.5% in sterilization and 13% in public health and hospital administration, 4% in research methodology, 2% in forensic medicine and forensic sciences, the others describe others not related to health. (Table 2).

Characteristics	n	%
Training institution		
Public	133	80
Private	34	20
Access to first job 1 to 3 years	72	43
Being a student	43	26
More than 3 years	28	17
Upon graduation	20	12
Difficulty in finding first job		
Moderate	118	71
Very	20	12
No difficulty	16	10
Access to current job		
Contacts	118	71
Competition	20	12
Job vacancies Press	12	7
advertisement	8	5
Length of service		
1 to 5 years	100	60
6 to 10 years	24	14
More than 10 years	43	26
Number of links One	110	66

Characteristics	n	%
Two	40	24
Three	8	5
More than three	9	5
Function		
Instrumentation Circulating	120	72
Teaching	50	30
Administration	28	17
Commerce	28	17
Sterilization	15	9
Coordinator or manager	14	8
Specialty		
General surgery	10	6
Traumatology	33	20
Videolaparoscopy	27	16
Plastic surgery	25	15
Neurosurgery	10	6
Postgraduate	8	5
University Didactics	50	30
None	31	19
Sterilization	23	14
Public Health Research	22	13
Legal and Forensic Medicine	6	4
	3	2

Table 2. Professional Aspects of Instrumentation and Surgical Area Graduates, 2023 (N=167).

4.Discution

The profession of surgical instrumentation at university level began in Paraguay in 1996, at the National University of Asuncion (2), with the degree of bachelor's degree in instrumentation and surgical area, graduating in 2003. Currently there are four institutions that offer the degree in the country (4), it should be noted that since 2020 there are national quality criteria for the

accreditation of the degree program, by the National Agency for Evaluation and Accreditation of Higher Education (ANEAES) (8,9). Being the first academic offer accredited to date in the UNA, it is worth mentioning that accreditation certifies academic quality, improves employability and allows access to training scholarships.

On the other hand, in Colombia it began at the Universidad Femenina de Medell í n in 1943, as a technical program, in 1951 the School of Surgical Instrumentation of the Hospital de San Jos é in Bogot á was approved, and in 1989 authorization was granted to the Corporaci ó n Tecnol ó gica de Santander to offer the program of Technology in Surgical Instrumentation. Currently, fourteen programs are active, twelve of them in private institutions and two in public institutions. As of April 2019, only five of the total number of programs had been accredited with high quality by the National Accreditation Council (10).

In terms of economic returns for the surgical instruments studied, the lowest wage earner, who accounts for one-third of the sample, dominates, followed by those who indicate that this depends on the season. Meanwhile, it is worth mentioning that graduates who have connections with the public sector work 24 to 30 hours a week and receive a minimum wage exceeding the minimum wage can reach two minimum wages. According to Law No. 6109/2018, the salary that surgical instrumentalists should receive should be classified according to stable contract work and temporary work in public and private institutions (1).

For those graduates who perform independent and extraordinary work, it is established that the amount should be at least 10% of what the surgeon receives, the percentage will be modified according to the type of surgery and based on the agreements between the medical-surgical societies (1). However, this parameter is not fully complied with, even in highly complex surgeries. In the dependencies of the MSPBS, 182 professionals (5) work as assistants, the base salary of the graduates in public entities is equal to that of the graduates in nursing, it is to be noted that the number is scarce in relation to the number of graduates and the increase of surgical spaces enabled by this entity, at national level.

In this regard, a Colombian study described that 72% of instrument makers earn one to two million Colombian pesos, corresponding to one to two million Colombian pesos, corresponding to one and two minimum salaries, corresponding to those who perform assistance functions, doubling the remuneration of professionals who work in administrative areas (11). In this regard, it is to be expected that the academic growth, at the postgraduate level, of Paraguayan instrumentalists will provide opportunities for managerial and administrative positions, both in the public and private sectors.

Next, regarding access to the first job, most of them reported having access within the first three years of graduation, with moderate difficulty, without leaving aside that a third of the participants said they had a lot of difficulty. In fact, in the career of instrumentation and surgical area in the UNA, students begin their field of practice from the second year, reaching the fourth year gaining experience in specialized surgeries, the teaching hospital under the university is a fourth level of care, offering students the opportunity to participate in surgeries of low, medium and high complexity. At the same time, students participate in operating rooms of other hospital centers through social bonding activities, in this way they are progressively related to the labor field.

Research on the subject describes that access to the first job requires adequate academic training and professional certification, and it is also important to keep abreast of technological

advances in order to have access to job opportunities. Likewise, since most of them are inserted in the assistance area, they leave spaces in other functions that are part of the instrument maker's profile, such as the administrative, teaching, marketing and sales areas (12).

Regarding access to employment, almost three quarters of the participants indicated that it was through personal contacts, followed by only 12% through competition. Although the graduate profile allows working independently and as an instrument maker in a surgical team, the scarcity of opportunities for public positions is striking. In this regard, in Paraguay, Law No. 1626/2000 on the civil service states that a public competitive examination is required for access to state positions (13).

It is worth noting that at the first level, obtaining teaching positions in the field of instruments and surgery is done through public opposition to competition (14). At the same time, for the appointment of contracted professionals in public entities, internal competitive examinations are held (15,16). In spite of finding such data, there is a lack of visibility of the announcements and calls for competitions in public and private entities. Perhaps, now from the accreditation of surgical instrumentation careers, the importance of selecting competent professionals is valued and recognized.

Among the functions performed by the instrument personnel participating in the investigation, nearly three-quarters of the cases are mainly instrument personnel, followed by circulation personnel, with a lower proportion of teaching and administrative personnel. On the other hand, the proportion of coordination in the operating room, functions in the disinfection field, and other tasks in the commercial department is very small. It is worth noting that the majority of the respondents are young people, half of whom are between the ages of 21 and 30. Because more responsible positions often require a higher academic and professional background to be filled.

A criticism found in other studies is the lack of incursion into new fields of action that could give the profession a higher profile at the national and international level (12). Although the work ability of surgical instrumentalists has been mentioned, Gonzalez (2000) pointed out in his actions the areas of management, material supply, hemodynamics, and cardiac perfusion (8). It is worth noting that in Paraguay, two graduates majoring in surgical instruments served as perfume.

Regarding continuing education, the research found that the most common postgraduate degree is in university didactics, although this statement does not reach a third of the participants, also in second place, there is a significant number of professionals who do not have a postgraduate degree. Among other postgraduate degrees, representing a low number are training in public health and hospital administration, as well as sterilization and research methodology.

Similar to a Colombian study, those who have a diploma course do not reach a third of the participants, specializing in 8.9 %, and continuing education, i.e. short courses, corresponds to 7.6 %. In the same study, 48.5 % of the participants stated that they had not undertaken postgraduate studies (11). In this regard, in Paraguay, postgraduate courses must be authorized by CONES. To date, there are no professional postgraduate courses for surgical instrumentation; however, short courses such as workshops and participation in scientific congresses are carried out by educational institutions, labor institutions and scientific societies in the surgical area.

Some institutions that offer continuing education in surgical instrumentation in Colombia include the School of Surgical Instrumentation of the University Health Science Foundation (17). In

recent years, professionals have been growing in academic level, obtaining master's degrees in the generic areas of the profession.

When talking about the role of the professional in surgical instrumentation in the stages of health care, Garz ó n and Marqu é z (2022), describe their current role in five domains: health promotion, disease prevention, diagnosis, instrumentation process in treatment, rehabilitation, and finally follow-up and evaluation; each of these domains are based on their specific competencies found in clinical, administrative, teaching and research and community training (18).

In short, in Paraguay, a professional surgical instrument technician, due to the skills acquired under the ANAES quality standards, not only performs instruments and circulation in the operating room, but also meets the requirements for other functions, as his role is not limited to the operating room. They have been away for 20 years for their first promotion, which is even a rarely imagined Nobel profession. It is worth emphasizing that countries can save financial resources by hiring instruments, as they are sterile care experts with the ability to optimize the surgical time for patient contact.

The research allows knowing the situation of graduates in instrumentation and surgical area, from the socio-demographic and labor aspect. The diagnosis does not allow us to reflect that we must continue aiming at academic excellence, at continuous training, which is an indispensable requirement of any health discipline. At the same time, the findings allow us to generate opportunities and projections in the labor field.

Authors'contribution

LNMC: Conceptualization, data preservation, research, visualization, writing, original draft. DCAC: Research, formal analysis, methods, validation, visualization, editing, review, and editing.

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Updating of contents in university teaching

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ABSTRACT

As a result of the integration of the university system in the European Higher Education Area in 2010, competences, methodology and evaluation have attracted the attention of researchers in the field of university teaching, while the contents have been relegated to a background. The present research aims to find out whether the contents that are taught respond to the changing demands of society or, otherwise, remain static and may become obsolete. The compulsory subject "Facilities Project" of the Degree in Fundamentals of Architecture at the Polytechnic University of Madrid is chosen as a case study. For this, an open survey is carried out to the students who take it in two successive years. As it is an open survey, students are offered a greater opportunity to express freely, both their answers and the reasons they have forgiving them. It is detected that they positively value much of the content and that they also value, to a lesser extent, other content negatively. Different evaluations are collected for each of the topics that make up the subject and also the reasons that, together with the suggestions, allow measures to be taken to improve the content offered. It is concluded that the contact with the opinion of the students allows obtaining a valuable point of view when keeping the contents updated.

Keywords: Content update; Open surveys; Didactic dimensions; Didactic coordination; Educate professionals.

1.Introduction

When children struggle academically in the clasUniversity education offers students content that was established when the curricula were set, and its updating is not always carried out with the agility that society demands. The evolution of the construction sector in Spain has caused during the last decade the loss of contact and relationship between the professional and university fields [1]. Additionally, the teacher, once a syllabus has been prepared to teach a subject for the first time, may be tempted to perpetrate during the successive courses those contents that at first could be updated but that, with the passage of time, lose the freshness of responding to what the profession needs from the future technicians who are being trained. That, when the sources of preparation of a subject could drink from the professional field and not exclusively from the manuals to use, which implies an increase in the gap that exists between what happens in the street and what is taught in university classrooms.

University teachers are the only ones who do not receive specific initial training to be teachers [2]. Of all the didactic dimensions:

objectives, competences, contents, methodology and evaluation, this research focuses on the contents.

Perhaps it is the aspect in which university teachers without pedagogical training, we can feel better prepared, and this makes it become the aspect that less attention is paid to when training and when developing educational innovation projects.

It is also the aspect that is least affected because of the integration of the university system into the European Higher Education Area in 2010 [3]. Competencies [4],methodology [5, 6] and evaluation [7] have attracted more attention, relegating content to the background.

The professional contents and practice of university education are intimately related to the socio-historical context in which they are developed [8]. They are created in a specific historical moment and are transformed through socially shared processes that configure the collective knowledge of the subject and that each teacher makes his own through the interpretation and personal understanding he exercises [9]. In this way, the professional knowledge of the teacher has a marked dynamic character and varies over time and space [10]. This marked dynamic character is the result of the transformation that the teacher undergoes in his professional development [11, 12].

The objective of university education is high comprehensive and meaningful training for professional practice [13]. If the contents that are intended to be understood in a meaningful way are far from professional practice, the learning that is carried out will not meet that objective. Therefore, the need to update the contents offered is raised, especially in a context of speed in technological innovation, overabundance of information [14] and expiration of knowledge [15].

Considering the situation exposed, and given the importance detected of the subject in question, it is proposed as an objective of the following research to inquire about whether university students perceive what contents that are taught in a specific subject of the university respond to what they expect to learn or if, on the contrary, these contents have remained, at least in part, obsolete.

Research is understood as an invaluable opportunity for reflection and learning about what is being transmitted in the university classroom.

2.Methodology

2.1Reasons for proposing a case study

To develop this research, a subject is chosen as a case study. It is considered that the interest of the research consists in the application of the proposed methodology to a case study and to be able to see how it is carried out through a concrete example. Developing additional case studies would not add clarity to the method used. Not developing any case study would imply a theoretical approach to the proposed methodology. It would remain unvalidated if, with its application, the set objectives are achieved. So, even though there is a prejudice about the limited nature of a single case study in research, in this case it is considered appropriate that the case study be carried out in a single subject.

The results and discussion that are carried out, may be of interest in terms of their specific content to those people involved in subjects

with similar content. However, it is considered that the interest of showing these results and discussing them may also be of interest to people involved in education who deal with totally different contents. The reason is that each one can more easily transfer the proposed method to their field when it is shown how it has been carried out and where it has led, than if the proposed methodology is only described abstractly, without specifying in a case study. . The details can be clarifying and each one has in his hand the ability to transfer it, with the corresponding adaptation, to his specific field.

2.2Subject case study

This research is carried out in the subject Project of facilities that is taught in the 5th year of the Degree in Fundamentals of Architecture, at the Higher Technical School of Architecture of the Polytechnic University of Madrid.

The course is divided into three deliveries. In the first installment, each student must choose their own project carried out in previous years in the Projects subject and adapt it in three different aspects: relationship between architecture and facilities so that the latter can have a place and be properly integrated into the project, improvement of the measures passive so that your project is more sustainable and requires less energy use to allow reaching reasonable comfort conditions and, finally, compliance with fire protection regulations.

Once the project has been adapted from the previous approaches, in the second installment the student develops the air conditioning installations: ventilation, heating and cooling. In the third installment, finally, he completes the hydraulic facilities that his project needs: evacuation of used water, water supply and preparation of domestic hot water.

2.3Methodology

Numerical surveys have the advantage that their results can be treated very easily and that they offer quantifiable results [16]. However, an open-response survey is chosen even though processing the information collected is more laborious.

The survey consists of three questions:

1.Indicate the contents of the subject that have been most interesting to you and indicate the reasons.

2.Indicate the contents of the subject that you have found less interesting and indicate the reasons.

3.Suggest those aspects that you consider should be improved in the contents of the subject.

It is considered that this offers a greater opportunity for expression to the students, who, in addition to pointing out the contents that are most and least interesting to them, can express their reasons. There is no list of variables to choose from, which also makes it possible to analyze which content arouses the greatest interest and which goes unnoticed. In addition, this methodology allows the collection of responses not imagined by teachers, as they are open responses without space limitations.

All students are required to take the Facilities Project subject during the 2019-2020 academic year in the spring semester and during the 2020-2021 academic year in the autumn semester.

The answers collected are processed to obtain quantitative results, in addition to the

qualitative results that can be extracted from their reading.

In the first place, the different topics in which the answers can be classified are established. Next, from each text written by each student to answer each question, the different ideas are extracted and quantified in the corresponding box. In this way, some text may be responding to the question posed in another question, to the same question in which it is found, or to neither of them. It may also have been left blank.

Once the answers received have been classified and numbered, the results obtained are analyzed and discussed.

Finally, a seminar is established with all the teachers of the subject in which the results are presented, discussed and agreements are adopted to update the contents taught in the subject.

3.Results and discussion

Of the 212 students enrolled in the spring semester of the 2019-2020 academic year, 70 responded to the survey, which represents 33%. While of the 156 students enrolled in the fall semester of the 2020-2021 academic year,

38 respond to the survey, which represents 24%. In total, 29% of the students who have taken the subject in both semesters responded to the survey.

As it is an open survey, the first thing to analyze is the number of responses collected, as shown in figure 1, since it does not coincide with the number of surveys that have been received. There are students who offer more than one answer while there are other students who do not respond.

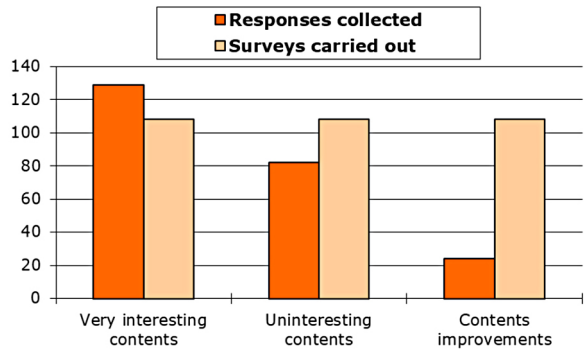

Figure. 1: Number of responses collected and surveys carried out.

The number of contents considered interesting by students accounts for 119% of the surveys received, while the number of contents considered uninteresting accounts for 76%. The difference between interesting and uninteresting content is 43%. This means that students consider that there is more interesting than uninteresting content in that proportion.

Only 22% of the students propose improvements in the contents. It may be because they have not detected alternative content on which they would like to learn or because they consider content to be something immovable.

The answers collected have been grouped in figure 2 according to the different topics present in the subject. In addition, a significant number of responses have been detected that refer to calculation; as its development is carried out throughout the course, it has been considered as an independent item.

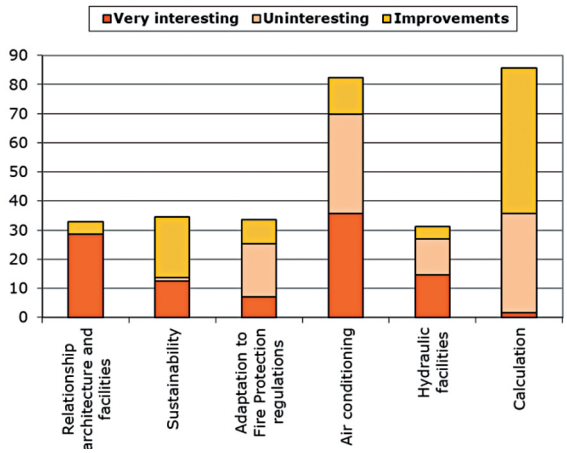

Figure. 2: Percentage of responses collected grouped by topic.

The most interesting topics for the students have been air conditioning and the relationship between architecture and facilities, while the topics that have seemed interesting to the least students are calculation and adaptation to PCI regulations.

The least interesting topics for the students have been air conditioning and calculation, while there have hardly been any students who considered the relationship between architecture and facilities and sustainability to be uninteresting.

The topics that received the most proposals for improvement are calculation, with 50% of the responses, followed by sustainability and air conditioning.

The relationship between architecture and facilities is the topic that generates the most consensus among students, in terms of a significant percentage of positive assessments and an absence of negative assessments.

Surely it is the most typical and specific topic of the teaching of facilities to future architects.

Air conditioning is the subject that arouses the most likes and dislikes, almost in the same amount. The feeling of fear in the face of its complexity is transformed into a positive assessment when learning is achieved, while it generates frustration when the difficulties in understanding continue without disappearing after studying the subject. The significant number of suggestions received for its improvement show that it is a subject that does not leave students indifferent.

The calculation, however, does not receive hardly any positive evaluations from the students, while the negative evaluations are important and the proposals for improvement account for half of the proposals received. These results invite us to rethink this part of the subject taught.

Sustainability, being a highly valued topic and with hardly any negative evaluation, receives a significant number of proposals for improvement, which means that it arouses a high interest on the part of the students in delving deeper into it.

The remaining two topics keep a low profile. Adaptation to fire protection regulations is less valued than hydraulic facilities. The low number of proposals for improvement received shows that they are topics that arouse less interest.

To further analyze the results, in addition to the quantitative results, a summary of the most outstanding qualitative aspects contained in the responses collected is offered. The issue of the relationship of architecture with the facilities receives positive evaluations, because when designing the building integrating its

facilities, it is understood as an organism that works thanks to the relationship of the different systems and the facilities have just been understood, not as something abstract detached from the building where they are located, but as something concrete that helps its definition. The project becomes more real by incorporating the facilities. Students ask that this approach be more present throughout the course. The contents related to the spatial occupation and arrangement of the facilities in the building also receive numerous positive evaluations. Sustainability is well valued by the students, not only the contents developed in the first installment of the course related to the passive design measures of the building, but also the students ask for a greater development of the contents related to renewable energies, efficient air conditioning systems and water saving and reuse systems. A greater transversality of the sustainability contents is requested throughout the subject.

The adaptation to the fire protection regulations receives positive evaluations from students who discover the important influence it has on architectural design, while students who pour negative opinions rate the contents as difficult and boring or consider that they are also taught in other construction subjects.

Air conditioning receives positive evaluations when students understand it for the first time, when students discover that it is essential to make spaces habitable, not only beautiful, and when they are aware of the important volume they occupy, which leads them to consider it essential to develop the installation of air conditioning in parallel with the development of the architectural project. The part of the choice of air conditioning systems also receives positive evaluations, when combined with the possibility it offers to incorporate efficiency and sustainability criteria in its choice.

The negative evaluations received by the air conditioning contents have to do with the limitation of developing a single system in your project, since choosing implies rejecting. They feel less prepared in the rest of the systems that they have not developed. They also criticize ventilation systems because they require less decision-making, so they find them less interesting. Finally, the lack of time to develop such broad content also causes students to show negative evaluations.

Students ask that more emphasis be placed on the criteria to be taken into account when choosing the air conditioning system to use in their project.

Hydraulic facilities are positively valued for their simplicity compared to the air conditioning part and for the interest aroused using renewable energies for the preparation of domestic hot water. The negative evaluations have to do with the repetition of contents with respect to the subject taught the previous year, in which the facilities are introduced at a theoretical level, since the students consider that the hydraulic facilities have less impact on the architectural project. Finally, when dealing with these contents at the end of the course, it is done in a hastier way with less time available.

The calculation receives negative evaluations because it is considered excessively exhaustive, repetitive, occupies a lot of time

and is not carried out with computer programs, as in the professional world. The proposals for improvement received are related to the adjustment of the time requested to the calculation, so that the subject implies a time of dedication by the students adjusted to the credits of the subject, as well as an approach to the professional world of the calculation tools used.

4.Conclusions

The fact of investigating about the vision that students have of the contents they receive helps to realize that, although they consider most of them interesting, there is also a significant amount of content that does not receive such a good valuation.

Although the involvement of students when proposing improvements in the contents is scarce, it is surely not their job; the clues they offer are undoubtedly valuable information for those teachers who want to update the contents they offer to what society is always demanding.

It is easy to ask students and be open to their assessments, often helping to perceive aspects that would otherwise remain hidden from teachers, who have a different look.

Once the process of listening to the students and analyzing the data collected has been developed, there is the part of implementing those possible improvements to, once again taught the teaching of the next course, return to carry out the process again with the intention of maintaining live content.

What might seem like a repetition of the myth of Sisyphus is surely a way to renew oneself like the phoenix.

AKNOWLEDGEMENTS

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It is not enough to accept more students if we want to improve the inclusion of disability in the university classroom

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ABSTRACT

The present work focuses on understanding the panorama of the behavior of the inclusion of disability in the university classroom of an HEIs. The study considers as a window of time the one from the year 2007 to 2022 analyzing as variables the enrollment of new income, the number of students with disabilities, the modalities of study and the careers offered. A descriptive and exploratory study is presented. The work is based on statistical analysis. Among the most relevant results found is an average growth in enrollment in the last 10 years, generation of a new professional career, creation of a new modality of mixed study, likewise a growth in the number of students with disabilities was detected, but the use of teaching techniques or tools focused on students with disabilities is not reflected, finally, There is also no relevant training for teachers on the subject. This combination of behaviors in the variables, far from predicting a healthy and encouraging future in favor of the inclusion of disability in the university classroom, exposes an unencouraging picture.

Keywords: Inclusion, disability, training.

1. Introduction

Generating an overview of the inclusion of students with disabilities in the university classroom places us at the starting point to understand these concepts in a particular way, let us begin by indicating that disability, according to the Dictionary of the Spanish Language (2023) is considered a situation of a person who, due to their physical, sensory, intellectual or mental conditions, finds it difficult for their participation and social inclusion. From here we can identify the direct relationship between disability and inclusion, the latter defined as putting something or someone within a thing or a set, or within its limits. Therefore, we can identify that social inclusion depends on the limits, in this case disability, of people to integrate into an activity.

If we review the historical context we can realize that people with disabilities have been excluded as mentioned by the UNIVERSIA Foundation (2021) because of their physical or mental limitations to actively participate in educational, labor, recreational, transportation and often even health activities. In this paper we will address inclusion in the educational field.

According to Paz-Maldonado (2020) and N ú ñez (2019), educational inclusion emerged as a concept and practice in educational contexts at the beginning of the 1980s in Europe and in the United States, mainly aimed at students with

disabilities. Particularly in Mexico, according to P é rez-Castro (2019), the organization of educational services in two systems, regular and special, contributed to the maintenance of exclusion factors towards this population.

One of the first efforts dates back to 2002, in which the National Association of Universities and Institutions of Higher Education (ANUIES) prepared the Manual for the integration of persons with disabilities in higher education institutions, whose general objective is to guide those responsible for higher education institutions in actions aimed at including, with equality and equal opportunities, persons with disabilities in the country's higher education institutions.

Likewise, in the Declaration of Yucatan, issued in the framework of the Second Binational Mexico-Spain Meeting on the Rights of Persons with Disabilities in Universities, P é rez-Castro (2019) invited higher education institutions in Mexico to guarantee the rights of persons with disabilities, through the development of research, changes in regulations and administration, training of professionals and specialized personnel.

2. Method of Investigation.

Our work explores, describes and analyzes the panorama of the behavior of disability inclusion in the university classroom of an IES from 2007 to 2022.

The study presents a mixed approach, since both qualitative and quantitative variables are worked and evaluated to obtain basic information and better understand the problem without the desire to offer definitive results. Likewise, its scope is exploratory – descriptive given that it was developed based on the available knowledge we have and that the characteristics of the variables we analyze are determined and we focus on accurately measuring them, with the data obtained, finally its design is non-experimental – descriptive (De la Mora 2016).

The study variables are total enrollment, the number of levels offered and their modalities, as well as the number of students with disabilities. We used descriptive statistical tools to explain the behavior of the variables.

In this sense, we proceeded to identify the proposals and advances in the inclusion of disability in the national context and contrast it with the efforts in the IES, and we also analyzed the national and IES statistical data to understand the progress achieved.

3. Development

In Mexico, as in any country in the world, the issue, although not new, is new for public and university policies, as mentioned by Torres (2019). We are faced with an education of an elitist nature, since at no time was it considered to integrate students with disabilities into the classroom, considering better to relocate them in special education schools, which reflects the lack of sensitivity of managers for their inclusion.

Awareness of the issue in Mexican classrooms as indicated by C í ntora (2019) dates back to the beginning of 2002, which is when the National Association of Universities and Institutions of Higher Education (ANUIES) developed the Manual for the integration of people with disabilities in higher education institutions, in order to be the guideline and guide for institutions in the generation of strategies for inclusion in their classrooms.

At the end of this decade, particularly in 2014 the federal government enacted the Federal Law to Prevent and Eliminate Discrimination inviting universities to develop and implement concrete strategies and actions to guarantee admission to all people.

From this, a series of structural measures in the facilities by Mexican universities to respond, although not in an efficient way, to the inclusion

of people with disabilities as mentioned by Gonzales (2021), such measures focus on:

a.Reserved parking spaces.

b.Benches with wheelchair ramps.

c.Building access ramps.

d.Reserved and special toilets

Unfortunately, no strategies were developed in the curricula, nor training courses for teachers and administrative staff for good situational management and support in the university classroom for speech and hearing disabilities, which according to data from the 2020 Population and Housing Census (INEGI, 2023) are among the top 3 in the population.

What we must emphasize is that particularly at the National University of Mexico, as well as at the Autonomous University of Morelos, specific departments were created to provide and improve communication with students from this sector, such as the Unit for Educational Inclusion and Attention to Diversity.

Particularly in the HEI under study, its efforts regarding progress in terms of communication, regulations and institutional policies for admission, continuance and graduation have been very weak and discrete.

Beginning our study in the 2013–2017 administration where the university slogan was "Humanism that Transforms" there is no mention at any time in the Institutional Development Plan (UAEMex, 2013) of the inclusion of students with disabilities. The only inclusion referred to in the document is the inclusion of ICT's in education.

After the aforementioned period of time, in the 2017–2021 administration the topic of disability is addressed for the first time in the Institutional Development Plan (UAEMex, 2017), emphasizing in one of its cross-cutting projects: "Ensure the inclusion of people with disabilities to school activities, through the construction or adaptation of works that facilitate their access to educational facilities". Likewise, it is determined as an institutional goal: "To place facilities that support the inclusion of people with disabilities in all university spaces that allow it".

In the 2021–2025 administration, the Institutional Development Plan (UAEMex, 2021) again includes a policy on disability, stating: "Gender inequalities must be eliminated and the inclusion of all people in university activities will be ensured, including people with disabilities, indigenous peoples, and those in vulnerable situations". Additionally, it is mentioned in the infrastructure section: "it is important to adapt the functionality, systems and institutional computer applications for the use of the university community, particularly for those with disabilities".

In this same administration, in the year 2022, is when for the first time there are records of students with disabilities presented in the UAEMex Statistical Agenda (2021), reporting the following figures:

a.High school students with disabilities: 800 students, 296 males and 504 females.

b.Students with disabilities in professional studies by university area: 4617 students, 1593 men and 3024 women.

c.Advanced studies students with disabilities: 69 students, 24 men and 45 women.

d.High school students in institutions incorporated to the UAEM with disabilities: 9 students, 5 men and 4 women.

e.Undergraduate students in institutions incorporated to the UAEM with disabilities: 117 students, 37 men and 80 women.

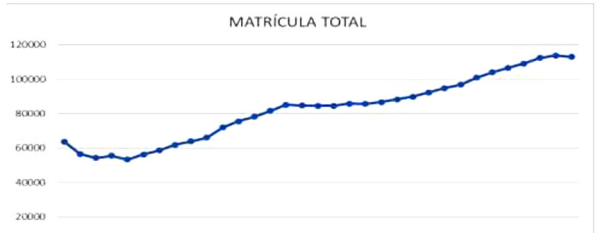
These figures indicate that there are a total of 5612 students with disabilities in the IES, and contrasting it against the total registered enrollment, which is 11,3062 students, we realize that they represent 4.96% of the total population, graph 1, similar to data reported in the Population and Housing Census 2020 (INEGI, 2023) where it is observed that 16.5% of the population has

a disability, of which 11.1% has a physical disability.

Graph 1. Proportion of students with disabilities year 2021.

Source: Prepared by the authors with data from the Statistical Agenda 2021.

On the other hand, the IES reports that in recent decades it has substantially increased its enrollment, covering an increasingly larger percentage of the state's youth, representing a definitely major effort to cover a larger population. Graph 2 shows the annual enrollment growth.



Graph 2. Total enrollment in IES.

Source: Prepared by the authors with data from the Statistical Agenda 2021.

Just as enrollment in IES grew, according to data from the General Directorate of Legislative Analysis of the Senate of the Republic (DGAL, 2016) the number of people with disabilities has also changed as shown in Table 1 below:

Table 1. Evolution of the percentage of people with disabilities in Mexico 1995–2014.

YEAR	SOURCE	PERCENTAGE
1995	Population Count	2.33%
2000	National Health Survey	2.30%
2002	National Performance Evaluation Survey	9.00%
2006	National Health and Nutrition Survey	9.00%
2010	National Survey on the Perception of Disability in the Mexican Population	6.20%
2014	National Survey on Demographic Dynamics	6.00%

Source: Own elaboration with data from DGAL 2016.

4. Discussion

It is not only a matter of regulating and issuing declarations, Universities should aim to reduce the inequality and exclusion gaps in order to achieve an educational system for all, based on equality, participation and inclusion.

Statistical data in Mexico show that the three main physical disabilities present are visual, walking and speaking disabilities, respectively, but HEI actions have only focused on addressing walking disabilities.

Just as there has been a 400% growth in the total enrollment in the IES, the percentage of people with disabilities in Mexico has also grown from 2.33% in 1995 to 16.5% in 2020, but the historical records in the IES on people with disabilities are null, only for the first time they appear in the year 2022 which does not allow us to have an overview of its evolution.

Mexico is still pending the elaboration of the national registry of persons with disabilities, whose elaboration process is stalled. We are aware of the varied number of surveys that support the evolution of statistical data, but a national registry that would allow us to have an adequate census with clear, accurate and timely information is yet to be formalized.

5. Conclusions

It took 15 years, since the elaboration of the Manual for the integration of people with disabilities in higher education institutions by ANUIES, for the IES to become aware of the importance of the inclusion of people with disabilities in university classrooms.

The initial efforts, as in most of the Universities in Mexico, focused particularly on structural measures in the facilities, as mentioned in its Rector Plan, leaving an empty space regarding plans, study programs, teacher and administrative staff training.

Three years after the enactment of the Federal Law to Prevent and Eliminate Discrimination in Mexico, the Institutional Development Guiding Plan takes as a policy the need to eliminate gender inequalities and ensure the inclusion of all people in university activities, including people with disabilities, indigenous peoples, and those in vulnerable situations.

Although the total enrollment in the IES has doubled in the last 4 decades, there is only a record of the year 2021 on enrollment of students with disabilities.

It would be of vital relevance to have within the Universities an advisory and training instance on Educational Inclusion and Diversity for both the administrative and academic areas that make up the institutions, thus seeking to generate an inclusive university culture and actively collaborating in the application of good practices that facilitate the process of admission, permanence and graduation of university students.

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Value-added Evaluation System for Vocational School Students Construction and Practice Research

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ABSTRACT

Student evaluation in the new era should be rooted in the educational macro background of "cultivating people by virtue" and comply with the overall policy orientation of educational evaluation reform. This research focuses on the construction and implementation of value-added evaluation system. Combined with the characteristics of vocational school students, this paper constructs a four-level index system and refines the student evaluation standards. The evaluation subjects are students, head teachers, teachers, parents and enterprise managers. Through the development of the related APP, it is convenient for each evaluation subject to input information, and finally use K-line chart to visually present the change process of the appreciation in students' literacy. A value-added evaluation system with strong timeliness, objectivity, motivation and operability is constructed.

Keywords: Vocational school; Value-added evaluation; System construction

1.Introduction

Student evaluation in the new era should be rooted in the educational macro background of "cultivating people by virtue" and conform to the overall policy orientation of educational evaluation reform. The reform of educational evaluation is an important content to promote the construction of high-quality talent training system in the new era. The evaluation of students is an important part of the overall reform system of educational evaluation, and it is also the focus of the general concern of the society. The reform of student evaluation method is imminent, which has become the most critical and core field in the process of the current educational reform and development. In this process, how to carry out student evaluation and realize the increase in value of students' growth is a top priority and a more difficult problem.

2.Research Background

2.1Background of the Times

At present, the world is undergoing profound changes unseen in a century, and China has embarked on a new journey to build a modern socialist country in an all-round way. Education evaluation is related to the high-quality development of education. What kind of evaluation baton there is, there is what kind of school-running orientation. In 2020, the CPC Central Committee and The State Council issued the "Overall Plan for Deepening the Reform of Educational Evaluation in the New Era" (" Overall Plan "for short), marking that the reform of China's educational evaluation system in the new era has entered a new stage from partial reform to overall reform. "Overall plan" proposed to establish a correct employment orientation. We should reverse the employment orientation of

"only famous universities" and "only educational background", and establish a talent use mechanism that is guided by moral character and ability and targeted at job demand. The "overall Plan" adheres to the problem orientation, starts with the concerns of the Party Central Committee, the people and the society, and advances the reform of key areas of education evaluation to achieve substantial breakthroughs. Adhere to scientific and effective method, improve the result evaluation, strengthen the process of evaluation, explore value-added evaluation, perfect comprehensive evaluation, make full use of information technology, and improve the scientific, professional and objective nature of educational evaluation. For the first time, "value-added evaluation" was advocated and promoted in the central policy documents [1].

2.2Vocational Education Background

In April 2021, at the National Vocational Education Conference, General Secretary Xi Jinping made important instructions on vocational education that vocational education should develop towards high quality and cultivate hundreds of millions of high-quality technical talents, skilled craftsmen and Great Country Craftsman. The Implementation Plan of National Vocational Education Reform proposes to establish and improve a perfect evaluation, supervision and evaluation system of vocational education quality, emphasizing the establishment of a vocational education quality evaluation system centering on learners' professional ethics, technical skills and employment quality. In the context of the establishment of a modern vocational education system, some vocational school students choose to participate in the higher education, and some students choose employment. It is found that the existing student evaluation model of secondary vocational schools is basically based on the traditional academic evaluation model of ordinary schools, and the academic performance is evaluated according to the examination results of each subject, except that there are some skill rating or skill testing related to specialty and work. Moral education evaluation is the head teacher's "scoring" according to the students' daily performance, but this "scoring" lacks the corresponding standards, process, empirical data and information support, resulting in the relatively common distortion phenomenon of "scoring". Whether secondary vocational schools can train the students to become self-supporting workers, and then become technical talents, become the physical fitness, healthy personality, mental health, moral, intellectual, physical, aesthetic and labor all-round development of the socialist builders and successors, will be an important basis to measure the value-added results of vocational education. Value-added evaluation is especially suitable for the types and characteristics of vocational education and the actual situation of students [2].

2.3School Background

Our school is a national model secondary vocational school, and the school is committed to the development of education and teaching connotation. In terms of evaluation research our school has a certain basis, "multiple quantitative evaluation research and model construction of secondary vocational school students majoring in numerical control technology", "reform pilot of the implementation of grade point evaluation system in secondary vocational schools", "teaching quality evaluation research of the major of secondary vocational accounting" and other scientific research projects have been concluded. The multivariate quantitative evaluation model established by our school has "four evaluation subjects" and "three ability indicators", and finally "one score" will be given to students, which gives students a comprehensive evaluation based on the ranking of students' score in the class, grade or major. This evaluation model

has changed the traditional evaluation method of "one examination to determine the merits and disadvantages", realized the multiple evaluation subjects, and paid attention to the process management. The project of reform pilot of the implementation of grade point evaluation system in secondary vocational schools will focus on the evaluation of students' academic, use credit grade point evaluation system for student course learning, professional qualification, skills contest, and enterprise practice to conducted a comprehensive evaluation, and determine whether a student has reached the standards of graduation, employment and entering a higher school. The current evaluation system can be used to assign a value to students' academic level or moral quality by "scoring", but it cannot play the "value-added" function of evaluation and cannot better reflect the longitudinal development and change process of students. Therefore, it is necessary to conduct in-depth research on the original basis and build a value-added evaluation index system [3].

3.Research Value

3.1Theoretical Value

The value-added evaluation index system for "comprehensive development" as the guiding ideology, based on the evaluation of students' core quality, the evaluation process made it from the "tools" to "humanistic", from "single" to "pluralism", from "assigning a value" to "value-added", from the transformation of "speculation" to "positive", and highlighted the value concept of "Humanistic Development". The series of theoretical achievements can provide reference for vocational education evaluation.

3.2Practical Value

Taking Chongqing Education Management School as the pilot school, this project conducts action research from the aspects of the construction of value-added evaluation index system, the implementation of value-added evaluation, the establishment of database and APP development. It provides practical experience for students' all-round development and personalized growth, diagnosis and reform of school education [4].

4.Definition of Core Concepts

4.1Vocational School

It refers to all kinds of vocational schools offering full-time vocational education, mainly recruiting junior and senior high school graduates or those with the same educational level. The basic schooling system is mainly three years. It is to train high-quality workers and skilled personnel who have all-round development of morality, intelligence, physique, art and labor and have comprehensive professional abilities to work in the front line of production and service [5].

4.2Value-added Evaluation

China's value-added evaluation research originated from the West. The American Comprehensive Education Reform Act was enacted in 1983. Sanders and Robert. McLean began a preliminary exploration of value-added evaluation. In 1988, the Tennessee Department of Education formed the Education Improvement Act, and value-added evaluation became the legal method for evaluating students, teachers, and schools in the state. Since the end of 1980s, China has carried out value-added evaluation reform in Hong Kong, Shanghai and Suzhou.

In this paper, the definition of value-added evaluation is quoted from The introduction of School Value-added Evaluation Model by Lai Han of Chongqing Institute of Education Evaluation: School value-added evaluation is by tracking research, the method of tracking students over a period of time, and the changes of their scores at different time, and through the establishment of multilevel analysis model, separate school uncontrollable factors such as

demographic factors, students' family background, school students quality, etc. from the influence on student achievement, and separately investigate the "net effect" of the impact on student achievement from school, so as to achieve a more accurate evaluation of school effectiveness [6].

Domestic scholars Zhang Liang, Zhang Zhenhong and Miao Heming discussed two viewpoints on the connotation of value-added evaluation in the paper School Value-added Evaluation Strategy and Implementation Suggestions: one refers to the evaluation of students' academic progress, namely" achievement theory "; the other is the evaluation of all aspects of the quality of students, such as the degree of intellectual, social and emotional development, that is, the "comprehensive view". This study supports the second view. Citing the views of scholars such as Zhang Liang, the connotation of value-added evaluation is interpreted as follows: First, the content index of value-added evaluation has realized the transformation from the narrow changes in grades to the improvement of students' quality in all aspects. Second, "value added evaluation" is a concept. It attaches importance to the overall development of students' quality, reflects the process of students' development, and takes into account the differences of students, so it is a more comprehensive, scientific and desirable view. Third, "adding value" is a standard. The measure of school effectiveness is basically the value-added development of school education on students. Fourth, adding value is a method. One is the remainder of the comparison between the observed value and the predicted value; the other is the extent of the progress of students' own achievements [7].

4.3System

"System" is a whole of similar things in accordance with a certain law and a specific connection. "Evaluation system" can be defined as a whole composed of evaluation content. The "value-added evaluation system" in this paper is an evaluation system guided by the value-added evaluation theory, which takes "human" development as the essence and records the growth and development of students in a comprehensive, truthful and dynamic way.

5.The Research Content

5.1Study and Research on Value-added Evaluation Theory

Cite space software is used to analyze and summarize the collected literature to form a literature review of value-added evaluation, and then deeply study and research the theory of value-added evaluation.

5.2Construction of Value-added Evaluation Index System for Vocational School Students

The value-added evaluation index system is constructed with the three aspects of "cultural foundation, independent development and social participation" as the first level index system, and the six qualities of "cultural deposits, scientific spirit, learning to learn, healthy life, responsibility and practice innovation" as the second level index system, and the eighteen basic points of "Humanity accumulation, human feelings, aesthetic temperament and interest, rational thinking, critical questions, having the courage to explore, willing to learn and good at learning, diligent in reflection, the information consciousness, cherishing life, healthy personality, self-management, social responsibility, national identity, international understanding, labor consciousness, problem solving, technology application" as the third level evaluation index system. Combined with the characteristics of vocational education, this study refined the fourth level quantitative indicators, and assigned the values according to the fifth level scale method to form a scientific and rigorous value-added evaluation index system [8].

The evaluation subjects of this system are students, homeroom teachers, teachers, parents and enterprise managers.

The evaluation system has four characteristics: first, it is timeliness, which can evaluate students at any time and observe the "value-added" changes of students' various aspects of literacy, so as to provide a basis for students' development and education diagnosis and reform; Second, strong objectivity. All of the students' performance or behavior at any time will be recorded, which is objective and fair; Third, strong incentive. Students can see the vertical changes of their own scores, can also compare with others, which can stimulate the internal motivation of students; Fourth, it is highly operable. Any evaluation subject can input data through the port, the system will automatically calculate the score, and the "K" graph can be seen directly using the APP.

5.3The Formulation and Implementation of Value-added Evaluation Individualized Program

Study the formulation of educational evaluation program and the design of implementation plan and implementation scale. According to the five different subjects of evaluation such as students, teachers, head teachers, parents and enterprise managers set up working groups, respectively focus on the evaluation program and a variety of evaluation questionnaire of the different groups, collect data through the method of observation, live recording, test method, questionnaire survey method and other methods, through the port enter the data into the database and the APP of students' growth, and regularly record the data in the student's personal growth portfolio.

5.4Development of Value-added Evaluation Database System and Value-added Evaluation APP

In today's era of big data, with "artificial intelligence + education", it is convenient to collect, sort out, process and use student evaluation information. Value-added evaluation is an evaluation method based on big data collection and sorting. In order to make data processing more scientific and accurate, this study uses information technology to develop a database system whose content matches the four levels of the value-added evaluation index system. The APP sets a port to connect to the database, and the input end of each evaluation subject is opened. The collected growth data of students can be generated into a K-line graph, which can intuitively and conveniently present the changing course of students' literacy.

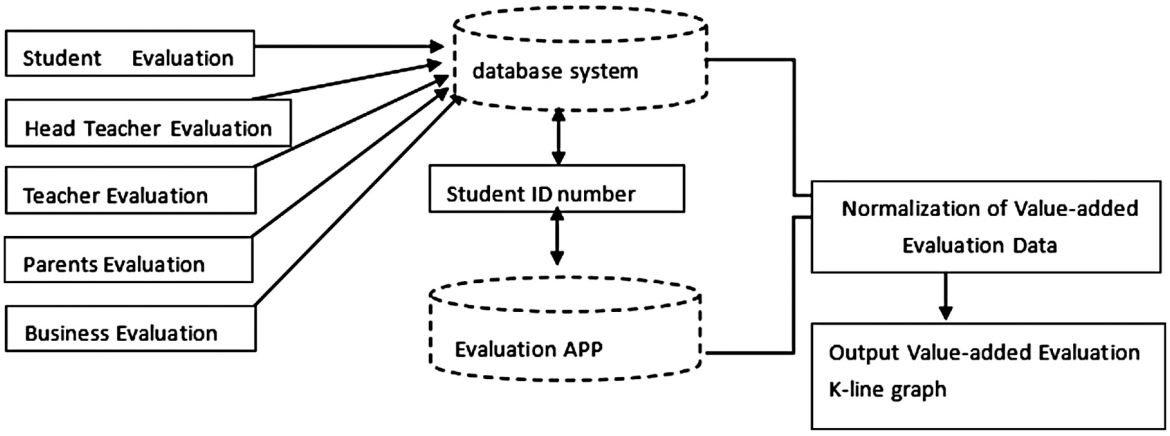

Figure 1. Value-added Evaluation Database System

5.5Data Analysis and Conclusion Study of Value-added Evaluation

Analyze and compare the data results of the pretest, stage test and post-test of the evaluated students, verify the data through the value-added evaluation model, write the research report, and draw a research conclusion.

6.Research Ideas

This study conducts specific research according to the basic idea of "review of theoretical and practical results -- analysis of current situation -- construction of evaluation index system -- formulation and implementation of evaluation plan -- research and development of database and APP -- operation adjustment -- research conclusion". Through investigation, the evaluation status of secondary vocational schools was understood, and Citespace software was used to sort out the related literature on value-added evaluation theory and the development of Chinese students' core literacy. The key point of this study is to explore the value-added evaluation index system on the basis of the existing "431" multiple quantitative evaluation model and the evaluation project of the grade point system. The system can be demonstrated by experts and tested in pilot schools before implementation. After correction and adjustment, the database system and value-added evaluation APP are developed. Finally, the system enters the implementation stage to form a value-added evaluation index system with perfect value added.

7.Research Methods

7.1The Literature Research Method

The literature research method is a research method that collects and reads a large number of relevant literature, logically processes and inferences the literature according to the needs of the research topic, and makes it meet the needs for the research and demonstrations. In this study, professional

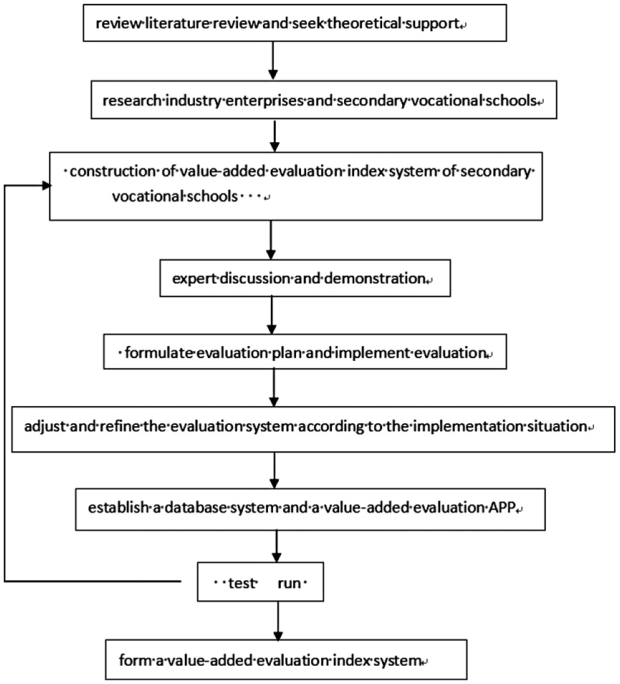

Figure 2. Research Ideas

soft ware was used to conduct quantitative and visual analysis of the effective literature after strict screening, seeking useful theoretical support and technical guidance for this project.

7.2Questionnaire Method

(1)Investigate the quality requirements of the enterprise industry for employees in the aspects of humanistic background, scientific spirit, learning to learn, healthy life, responsibility, practice and innovation.

(2)Investigate the existing evaluation models of relevant secondary vocational schools, analyze the pros and cons, and provide an empirical prototype for this research.

7.3Action Research Method

Action research method is a method adapted to conduct the research on the work and practice of practical workers in the social field. This topic tries to build a value-added evaluation system to solve the problem of moral education evaluation. In order to make the evaluation system feasible and effective, we must participate in the actual work of moral education evaluation in schools. Find problems in practice,

adjust and revise the evaluation index system in reflection, further improve the database system and the evaluation APP, so as to continuously push forward the whole research project.

8.Expected Research Results

A.Value-added Evaluation Index System for Vocational School Students;

B.Value-added Evaluation Implementation Plan and Scale for Vocational School Students;

C.Value-added Evaluation Database System for Vocational School Students;

D.Value-added Evaluation APP software for Vocational School Students;Construction and Practice Research Report and Related Papers of Value-added Evaluation Index System for Vocational School Students.

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Learner's Dialect Use by EFL Instructors: A Study of Junior High School Teachers in a Minority Area of China

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ABSTRACT

The use of learners' L1 (first language) in the EFL classroom has been widely discussed in the literature. However, the use of local dialects has received less attention. Thus, this study investigates the use of Enshi dialect in EFL classroom in junior high schools in order to explore how teachers deploy the learners' own dialect in EFL classroom and its effect. The Enshi dialect which is a variant of Mandarin is frequently used in daily life in Enshi Tujia and Miao Autonomous Prefecture. Semi-structured interviews are conducted with 15 teachers who adopt Enshi dialect in EFL classroom teaching in junior high schools in 8 minority villages in Enshi. The results indicate that occasional dialect use does exist in EFL classroom teaching for junior high school students in ethnic minority areas. In addition, four main benefits are revealed when learners use dialects in EFL classes. Teaching English by using dialect helps students to improve the mastery of English grammar, distinguish pronunciation, understand the meaning of English words, phrases and sentences, and enliven the classroom atmosphere. The research also shows that the effective use of learners' dialects in the EFL classroom plays positive roles in English learning.

Keywords:EFL; Dialect use; Junior high school; Ethnic minority areas

1.Introduction

Mandarin is a standardized language that is popular throughout China. It is formulated according to certain standards and is a language form for people from various regions to communicate. There are also many dialects in China for the development of languages. Dialects usually refer to language variants formed in a particular geograph ic area. An important feature of dialect is that it has not yet been standardized [1]. Dialects are frequently used in daily life so that to some extent they may have positive or negative influences on learning of another language.

Xie [2] and Yang [3] research the negative transfer of dialect phonetics to the English phonetics and intonation and put forward some strategies to cope with this phenomenon. On the other hand, some researches demonstrate the benefits of using dialect. For example, Abi-Hashem [4] proposes that local dialect use in EFL can provide students with language practice resources that can sharpen their culture awareness, expand their cultural knowledge and maximize their language exposure with the local culture in English.

In view of the different opinions towards

dialect in English language teaching, the author conducted a series of research projects in this area and was awarded provincial research funding to investigate the influence of dialects in EFL classroom teaching. The current study is a part of this funding project. This paper reports from the teachers' perspective on the design and implementation of dialect use in EFL and explores its performances. The semi-structured interviews will be adopted to investigate this phenomenon. The research aims to investigate how teachers teach English with dialects and its effects. The significance of this study is to help English teaching in ethnic minority areas.

2.Literature Review

More recently, there has been considerable interest in the roles of learners' mother tongue in foreign language learning and teaching [5]. Hall and Cook [6] reviewed the research on this topic, and conducted a global survey of attitudes and practices in English instruction. The findings of the Hall and Cook's [7] project reveals that many teachers employ their students' mother tongue to explain vocabulary and grammar, to manage classroom events, and to develop rapport with students, and this seems to have become a kind of trend whose value is taken for granted. Ellis [8] claims that in the sociocultural framework, the L1 can serve as a valuable source of background knowledge and information to prepare the students for L2 input. Anton and DiCamilla [9] further explain the sociocultural framework, claiming that L1 use turns the students' native language into a powerful tool that can be used in student-student interaction in order for the students to better relate with one another, understand the directions of a task and complete the task. In other words, it is the L1 that taps into the cognitive processes of the students and helps them to more effectively complete the L2 task, while at the same time validating their social identities. Al-Dera [10] suggests that L1 may play an effective role in the language classrooms at all these levels. L1 is useful for explaining the meaning of difficult words and use of grammar. In this study, the influence of the first language will also be discussed. The dialect is the teacher and learner's first language.

Teaching English by using dialect is equivalent to a process of transfer language. Garc í a and Wei [11] traces the origin of translanguaging which is defined as "a pedagogical practice where students are asked to alternate languages for the purposes of receptive or productive use" (p. 20). They also elaborate on their own interpretation of translanguaging as "the fluid language practices of bi-or multilinguals who move between and beyond the systems in their linguistic repertoire, drawing upon multiple semiotic resources appropriate to given contexts to language and make meaning of both themselves and their surrounding environments." Otheguy et al. [12] claims the translanguaging as "the deployment of a speaker's full linguistic repertoire without regard for watchful

adherence to the socially and politically defined boundaries of named (and usually national and state) languages". According to the definitions of translanguaging, translanguaging is a procedure to alternate language in order to make sense of the use language and make a connection between different languages.

Otheguy, Garc í a & Reid [12] compare a unitary view which thinks that there is no correspondence in a dual or multiple linguistic and a dual correspondence theory which claims that bilinguals possess two separate linguistic systems whose boundaries coincide with those of the two named languages. In light of comparison, they state that, "a much healthier educational climate is created by teachers who adopt the unitary view sponsored by translanguaging system." Kaufhold [13] investigates how students

develop their academic writing across language codes and registers in the multilingual contexts of a Swedish university. The findings also suggest that the metaphor of translanguaging space which is a space for the act of translanguaging as well as a space created through translanguaging can be fruitfully applied as a pedagogic tool.

Zavala [14] shows that through translanguaging strategies or the movement and fluidity between Quechua and Spanish–Silvia constructs a community of legitimate Quechua speakers and empowers students, both the ones with high proficiency in Quechua and the ones with less proficiency. Rosiers, Van Lancker & Delarue [15] investigates the interactional behavior and the socio–pedagogical valorization of translanguaging practices of teachers and pupils in a multilingual and a monolingual classroom. Their analysis demonstrates differences in the nature of translanguaging practices: norm–breaking in the multi– lingual classroom versus turning back to the norm in the monolingual classroom. Translanguaging practices occur in the margin or in the center of the classroom activity, with socio–emotional purposes in both classroom settings. Pedagogical goals, however, are only observed in the mul tilingual classroom.

However, there are some scholars who do not support the translanguaging strategies. For example, Jaspers, J. [16] argues that translanguaging is likely to be less transformative and socially critical than is suggested, because translanguaging research has more in common with the monolingual authorities it criticizes than it may seem, because it is on causality effects that cannot be taken for granted, and because translanguaging, in some of its representations, is becoming a dominating rather than a liberating force. Nguyen [17] examines Vietnamese ethnic minority students' translanguaging beliefs and practices, and their identity construction through translanguaging. Findings suggest that the students reveal or perform different features of their trans–identity and their translanguaging between their ethnic language and Vietnamese mostly reflect their ongoing shift from the L1 to Vietnamese rather than in the opposite direction. Translanguaging seems to be a threat for endangered minority languages in monolingual ideology politics.

Above all, there are both advantages and disadvantages of translanguaging. So, the effects of using dialects in EFL classroom should be investigated and the appropriate way to display translanguaging should be discussed.

3.Methodology

3.1Participants

The survey was conducted in Enshi, a minority prefecture in the southwest corner of Hubei province, adjacent to Chongqing and Hunan province. Enshi is a minority area with Tujia and Miao people assembling and other ethnic minorities living scattered. The ethnic population occupies 54%. Enshi has 8 counties and cities, namely Enshi, Lichun, Hefeng, Xuanen, Xianfeng and Jianshi. Although the dialects of the eight counties have similarities, their dialects exist differences. This paper focuses on the Enshi dialects which were spoken in Enshi county. Owing to the ethnic languages having been Chinesized, the Enshi dialect is frequently used by people from different nations in daily life. The Enshi dialect is a branch of the south– west mandarin dialect and its initial consonant system is different from Mandarin [18]. Zhang [19] suggests that there are 21 consonants in Mandarin and only 19 in the Enshi dialect which do not have l and f. The people in Enshi cannot actually distinguish "n" and "l", "h" and "f" and level–lingual and cacuminal.

The selection of the survey schools was based on a preliminary study. Before the survey, we learned that there were occurrences of dialect

use in English teaching in rural high schools in Enshi county. The investigation didn't involve any English teachers in city high schools, as the official school language in the city high school is Mandarin. With mandarin even being integrated into English classrooms, the English teachers in the city are required to speak Mandarin in class. In each case, the principals in junior high school were approached by the researcher, informed about the survey being conducted, and asked for permission to conduct interviews with teachers. By initially asking all English teachers briefly, those teachers who had integrated dialect into class were selected as interview candidates for our study. Altogether, 15 junior high school teachers participate in this study. All of them worked in the rural junior high schools of 8 village–central junior high schools in Enshi county.

3.2Methods

The tool used to collect data was a semi–structured interview with teachers. This interview is aimed at obtaining information about teachers' use of dialects and its effects. Drever [20] claims that semi–structured interviewing is a very flexible technique for small–scale research. It is not appropriate for studies involving many people, but is most helpful in mini–studies and case studies. The research method of sitting in on and recording classes is not adopt– ed in the study, due to the fact that the teachers tend to prepare and teach their whole class in English if they are informed the class will be audited or recorded.

The interviews were conducted in 8 villages in Enshi county and normally lasted about one hour. There were 15 teachers interviewed in total. The concrete procedures are demonstrated in detail.

Step 1: The author pacified the teachers who participated in this research in order to make them not feel nervous and continue to integrate dialects into EFL classroom.

Step 2: During the interview, the interviewees and the researcher communicated in mandarin or dialect depending on the interviewee's choice, which helped the interviewees feel relaxed and free. The interview used to elicit responses involved the following questions:

When have you used dialect in your instruction in class?

Can you demonstrate some examples that you use dialect in EFL classroom?

Do you think dialect is helpful for your English teaching?

Step 3: The data of interview were recorded and then transcribed by the first author. The accuracy of the transcripts was checked back against the recordings by the second author. The examples would be extracted from the transcripts which were used in the Results and Discussion and were translated into English by the second author.

Step 4: The second author collated and analyzed the data. During the analysis procedure, the initial reading of the transcripts for general meaning was followed by coding and classifying benefits of dialect use and the second reading was used to count the number of instances of each category.

4.Results and Discussion

In this survey, only instructors' language is investigated. In class the instructor applies the dialect and English. From the survey, over two thirds of the teachers present the dialect spontaneously, and only fewer teachers prepare the relevant materials about dialects for teaching. However, their teaching almost demonstrates good results.The reports below demonstrate the four main benefits for teachers' instruction with dialect in EFL class.

4.1Improving the Mastery of English Grammar

Because there are no verb tenses in Chinese,

many teachers believe that teaching tense is difficult in junior high school. While this situation can become easier when students use dialects in teaching.

My students always expect that they will be able to express what they think and what they see in daily life in English, after they learn English. For example, I teach "would have done", which is "wo an zhi zuo de" in dialect. Likewise, "could have done" is "wo na men bu xing nuo" in dialect. "should have done" is in dialect "zhe jiu gao she da, wo na men mei zuo luo", and "must have done something" means "wo ying shi gao a de ya" in dialect (Teacher 1).

The teachers stated that they used local dialect in English class for grammatical comparisons. It is a good way for students to understand the English grammar.

4.2Distinguishing Pronunciation

Pronunciation comparisons between dialect and English were also used in class instruction. Here teachers work to ensure that the students focused on differences between English pronunciation and dialect pronunciation. Almost all teachers stated that they used English and dialect sound differences effectively to teach English:

Many students do not notice the "r" sound. I tell my students "r" sound is not quite the same as our dialect "r" sound with not flat lip. (Teacher 14)

The students pronounce English the same as dialect sound. There is no "n" sound in Enshi dialect and this sound is pronounced through nose and the students always drop "n and l" in the words "film, kind, wall, find". (Teacher 2)

I simply distinguish each English sound from dialect sounds. For example, the "e" sound in the dialect is exactly the same as in English [e], such as "te se" in dialect is pronounced as [te] [se], so local students learn the vowel sound of [set] with dialect pronunciation on the same line. (Teacher 7)

In the survey, the teachers made clear that the students emphasized the similarities and differences between English sounds and dialect sounds. This awareness assisted the students to learn easily and master accurately.

4.3Understanding the Meaning of English Phrases and Sentences

The key points evidenced in the interviewees' statements about dialect use were about teaching language. The teachers stressed that their goals were to maximize target language use in class but they also stated that dialect resources were necessary:

We use dialect when vocabulary is challenging for the students. For example, when we introduce words like "extremely" and "terribly" ..., we can use dialect, which is easier for students to remember, such as "lei hen la", "xi huan can le", "hao wan le". (Teacher 9)

I use the dialect to explain some words, for example, I teach modal verbs "can, need, can't, may, must" like this: "This baby has just turned a year old and can go. Zhe ge xiao hai gang man yi sui jiu zou de da", "ni hen zang, ni zai de zhuo xi da", "wo mei de fa zuo da", "yao de hao (may)", "ni guo ren ying shi yao zhen men gao sha (must)" (Teacher 11)

It often happens that students immediately grasp some kinds of phrases, if I find a familiar dialect phrase with the same meaning as an English phrase like "have a look, have a swim..." ("kan yi ha ha er, you yi ha ha er" in dialect). (Teacher 13)

We use dialect to translate some sentences when the students feel it is more appropriate and to help them remember them better. For example, "It's none of your busi ness" is "guan ni mo zi shi sha", "She paid no attention to what he said" is "guan ta shuo mo zi, ta yi dian er dou bu shuai shi ta", and "close to" is "ai dao qi". (Teacher 8)

Dialect was used by teachers to convey the meaning of English language in three cases. First, the teachers used dialect to introduce the English language, so that the students could understand. Second, to avoid misunderstandings, the teachers elicited the relevant dialect items. Overall, dialect use in English teaching could help students learn language, express their thoughts better, and cultivate intercultural understanding.

4.4Enlivening the Classroom Atmosphere

The fourth function evidenced in the survey about dialect use was to motivate the class. Teachers and students worked to ensure that the students focused on classroom activities, as shown in the quotes below:

When I speak dialect, I rarely find the students losing focus. For example, "I want you to memorize this pas- sage, can "you ha shu ma" (have big chance to success). I remember the students laughing at once, feeling relaxed. (Teacher 10)

Dialect use can add some color to our dull learning. I remember, once, "... But It's very noble of you to look after my pets when I was out." "or if you gao liang da (have a cold), you'll fear sniffling and sneezing..." (Teacher 8)

I can't help using some linking words in dialect. For example, "Today I'll tell you a story. Now look at the picture, please. This is a jungle ... And (jie dao qi) the rabbit is quicker than the panda, (wow, cool ha ge za) the elephant is stronger than the tiger". (Teacher 14)

Many times, I haven't prepared dialect contents before class, and, all of sudden, I blurt out some dialect. For ex- ample, "we have some difficulties. But how can we solve them? (oh, dear, gao she da). Can you (shen qi) hold?" (Teacher 4)

Without establishing any rules, the teachers adopted a rather relaxed approach in two cases. First, there were teachers who exploited dialect links between dialect and English. Second, some teachers reported making general remarks in dialect when a new topic was going to be dis- cussed and students' performance is to be praised.

5.Conclusions

In this survey, the data are collected only from inter- views with teachers, and there are no classroom observation records. Despite this limitation, the data, the product of the natural classroom, with no experimental intervention conducted, do provide several interesting findings and implications for teaching English while using dialects in EFL classroom. The research shows that the effective use of learners' dialects in the EFL classroom plays an active role in English learning. From the results of teachers' interviews, (1) dialect use does exist in EFL classroom teaching of junior high school students in minority areas;

(2) dialect use in English classes provides four benefits: improving the mastery of English grammar, distinguishing pronunciation, understanding the meaning of English words, phrases and sentences, and enlivening the classroom atmosphere.

Although the dialects play a positive role in EFL class- room, there are also some aspects that should be noticed during the process of teaching. a) The teacher needs raise awareness about adopting dialects on account of the benefits of integrating dialects into EFL classroom.

b) The teacher need control the quantity of dialects that will be integrated into class. c) The teacher need make her students reflect about dialects and issues of power and ideology underlying language use. It helps them to apply language in reality and the culture that exists in dialects.

d) When discussing dialects with students, the teachers should encourage students to think critically about language, and in this sense students' critical language aware ness will be

formed [14].

The general picture that emerges from the analysis of the data is that the learners' dialect is used in response to the linguistic forms. The teachers clearly see their learners' learning needs and achieve their teaching goals more effectively. The study focuses on teachers' classroom lan guage. Although the learners' first language can affect and interfere with the learning of a foreign language, what is called "language transfer" [21], in the interviews, English teachers emphasize the positive transfer effect of dialects on English learning and the effectiveness of English teaching.

Teachers, of course, also have a professional obligation to convey foreign language meanings accurately. In this study, the teachers use dialect in classroom teaching to the extent, which promotes English learning. Use of dialects in class can create a realistic context, so as to expand the opportunities for students to learn and use English. In the interviews, the teachers express their views that they do their best to engage with students' interests, find a way of translanguaging. At the same time, students are influenced by teacher's instruction, which cultivates their sense of local responsibility, establishes local self-confidence and realize the charm of dialect.

This is a fairly modest piece of research derived specifically from interviews with teachers or in junior schools in one minority area in China. Its insights need to be explored further in different sorts of areas using questionnaire surveys with different groups of students, in which a broader qualitative and quantitative analysis can be done. The appropriate time and quantity of dialect used in EFL classroom should also be discussed.

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Free Educational Tools Available On The Web For Learning English

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ABSTRACT

The rapid insertion of technology into classrooms began due to educational need during the COVID-19 pandemic. However, currently it is part of the learning reinforcement tools since it enhances the autonomy of students, develops new digital skills to understand the use of web tools, increases productivity, among others; since teachers have minimized time carrying out monotonous activities, focusing on teaching planning. In this sense, it has been observed that the web offers a series of free educational tools that promote both autonomous and guided learning of a second language (L2). As part of this educational experience, the opinion of twenty-five students enrolled in a virtual undergraduate educational program at the Autonomous University of the State of Hidalgo was collected through virtual surveys. The result yielded a series of free tools on the web that, in the students' perception, enhance the learning of English, of which the ten most mentioned were determined. Same, which throughout this document will be made known regarding their benefits and technological qualities.

1.Introduction

The central theme of this educational experience is to present the ten free tools available on the web for both autonomous and guided learning of a second language (L2), in this case English, as well as the importance of Information and Communication Technologies (ICT) in teaching and learning processes at the higher level, specifically in virtual educational programs where the presence of the advisor of the subjects does not have too much incidence, but rather serves as a guide in the teaching-learning process.

From here, the concept of heutagogy is derived (Hase & Kenyon, 2000); which refers to a model of autonomous learning due to the introduction of ICT where the role of the teacher or advisor is limited as a guide of the teaching-learning process. This term is nothing more than a pedagogical evolution that allows higher level students to take advantage of web tools in such a way that formal and informal learning situations are covered (Blaschke & Hase, 2016).

The starting point of analysis is through the application and technological innovation that is emerging and booming every day, so education seeks acceptance in terms of the transformation of traditional teaching to adapt to the acquisition of new knowledge through the use of ICTs.

The Organization for Economic Cooperation and Development (1971) refers to this issue by stating that technological innovation should be defined as the "first application of science and technology in a new direction, followed by

commercial success". This may be controversial for many, since the figure of the teacher or advisor in many of these cases does not exist, or is given under the premise of being only a guide during the learning process.

Having said this, Mexico has joined these ideals of technological incorporation, so much so that today various educational centers and universities have incorporated virtual educational programs into their educational offerings, such is the case of the Autonomous University of the State of Hidalgo, which has two virtual degree programs; one of them is Marketing and the second is Educational Innovation and Technology (LITE), where the present educational intervention took place in the Bachelor's Degree in Educational Innovation and Technology.

According to Kormos & Csiszer (2008), the motivation to learn another language changes with age, with educational and occupational reasons being more important during youth as opposed to social and cultural reasons in maturity. It is for this reason that this intervention has as its main object of reflection the effectiveness of the use of free tools available on the web for English language learning in students enrolled in an undergraduate educational program, because although in LITE there is the figure of the subject advisor, the hours contemplated in the Institutional Language Program for English language learning are insufficient.

For this reason, a series of free tools were implemented on the web, thus promoting autonomous learning among the students of the aforementioned degree program, and from this we can see the evidence of the ten best tools mentioned in the students' interviews, which contributed to the creation of a stimulating context in the dynamics of foreign language learning.

2. Materials and methods

During the development of the educational intervention, the technological and qualitative components of the free web tools available for learning English were considered. This was based on the implementation of the four language skills: listening, speaking, writing and reading, in order to achieve the proper integration of receptive and productive skills (Table 1).

Type of ability	Receptivas	Productivas
Comprehension	Auditory Reading	Spoken Written
Characteristics	Greater mastery of the language Understands dialectal variations The student does not have control over the language.	Limited command of the language Expresses dialectal variations The learner has control of the message he/she produces

It is pertinent to mention that when referring to the term qualitative component of the web tools, we consider their characteristics, potential for learning English, ease of use, the set of skills that can be practiced or the individuality of skills for practice, as well as a brief description for the registration and correct functioning in desktop computers, laptops, cell phones with iOS and/or Android processors. On the other hand, it should be noted that the ten most used web tools were analyzed and that the LITE students mentioned during the interviews that have been most beneficial to them during their teaching–learning process.

According to Hern á ndez et al. (1991), an experimental study is one whose purpose is to collect all information related to the subjects of study as they are presented at the time of collection, which is why this educational intervention was designed from a non–experimental study, since it only analyzes the facts as they are presented in the real context of the student from a descriptive process because

it focuses on collecting information about the students facing particular situations of English learning as they were presented at the time of collection.

The sample was collected from the opinion of twenty–five students enrolled in the Bachelor's Degree in Educational Innovation and Technology who during the period September – October 2023 took the English courses offered in this period, which covered the entire population of students enrolled in the English course during the aforementioned period, of which twenty–two students are female and the remaining three are male.

For the selection of the study subjects, the only conditioning factor was that they were enrolled in an English course at LITE, regardless of their age, since this is very varied and as such the subjects should only be familiar with the use, knowledge and management of ICT, of which one hundred percent meet the requirement due to the profile of the Bachelor's Degree in which they are immersed. Regarding the sampling, it was not necessary to use any technique, so the interview was conducted with the total number of students enrolled in the English subjects in the aforementioned period; therefore, the study subjects are totally representative since they involve one hundred percent. Therefore, this sample is not probabilistic since, according to Hernandez et al. (1991), "the selection of elements does not depend on probability, but rather it channels the relationship with the characteristics of the sampler".

3. Results and discussion

For the application of the intervention, a scripted interview designed by a researcher with the approval of an ICT expert was conducted to formulate the questions regarding the qualitative aspect of the free web tools for English language learning.

The interview was structured mainly in five sections: General data of the students, name and level of the English subject they are taking, use of the web tools, characteristics of the web tools and opinion of the mentioned web tools. With regard to the variable use of web tools, ten closed questions were used to determine the frequency of use, the type of web tool, the skills that can be practiced in said web tool and the efficiency of learning. The characteristics of the questions according to each variable were as follows a) Frequency of use: Open questions were asked so that the student could answer how often he/she uses these tools; in three of the interviews a closed question was asked to specify the frequency of use. The question asked was How many times a week do you use at least one free web tool for learning English? b) Type of web tool: A closed question was asked to determine the name of the web tools that are most used to force the learning of English, in none of the cases the use of open questions was left open in order not to divert the attention to the tool that the students use. c) Skills that can be practiced: Similarly, a closed question was asked and it was guided to know which of the four linguistic skills can be practiced in the web tool(s) mentioned by the subjects of study. d) Learning efficiency: To know the efficiency of English language learning through the use of web tools, a closed question and an open question were asked in order to know the opinion of the students.

In which they were asked to use one of the following phrases to measure learning efficiency: strongly agree, agree, disagree and strongly disagree; and the explanation of why they chose such phrase as part of the open–ended question. Finally, as part of the results analysis technique, the frequency of response to the most frequently used free web tools for learning English was used as a basis for calculation, positioning them from the most frequent to the least frequent in a top ten of the most used, which are analyzed below.

(1) Memrise

The limited free mode or an extended mode for an annual or monthly fee, registration is required. In order for the user to start using this tool, a test is provided to identify the comprehension of certain English topics. This application is valued as one of the best free web tools available for learning a second language, since it not only allows the user to learn English but also to interact with multiple languages.

There is also the option to practice both a website and an app for both iOS and Android. Memrise saves the progress you make through videos and/or conversations. Finally, this tool allows you to practice all four language skills. However, it is often more used and beneficial for speaking practice through live conversations with Artificial Intelligence (AI), to which Gutierrez (2006), defines artificial intelligence as one of the most fascinating and challenging areas in web tools, as it has taken technology as the universally accepted characteristic to build intelligent programs. Currently, AI is a fundamental discipline in science and technology, which over time has created a series of basic knowledge that allows it to emulate various capabilities of human beings to exhibit intelligent behaviors.

(2) Duolingo

Its only version is free, the user has the option to register or not. However, through a previous registration it saves the user's progress. Duolingo has both a website and apps available for download on Android and iOS. Likewise, the user can choose to take the positioning test or start with basic A1.1 level exercises. This tool evaluates reading, writing and listening with simple and easy to use exercises.

(3) Edx

Edx is a web-based platform with a free mode for the courses it offers. However, prior manual registration for the courses is required. This tool provides a brief description of each course offered, therefore the user must carefully read the details of each course as there is no possibility of a placement test. Edx can be found through its website and also in its apps available for iOS and Android.

This tool does not keep a progress, but it has the possibility of archiving the classes and courses to which the user is enrolled. It has the possibility of practicing all the skills according to the courses and classes the user is enrolled in, as well as working on receptive reading and writing skills with exercises that the website offers. Finally, this web tool makes it possible to obtain a certificate for the courses that are satisfactorily completed, upon payment of the fee for the issuance of the certificate.

(4) Papora

This web tool has a limited free mode, the user needs to register to access the content that is available as a website only, it does not have a downloadable application available for iOS or Android. At the beginning, an initial test must be taken to verify the English level of each user. It also registers the progress with a bar and contains courses and classes from the most basic level according to the Common Framework of Reference for Languages A1.1, to advanced C2.2. The skills that the user can practice for free are listening, reading, writing.

(5) American British Academy

The American British Academy has two modalities of use, the first one is a free limited modality and the second one corresponds to a professional payment plan with monthly and annual fees. To access this web tool, the user must register to access the courses. This is available as a website and also as an application for Android, with no application available for iOS. When starting the web tool you will find a test to assess the level of English or you can start with the version of the tool from level A1.1. The tool allows you to monitor progress through a graphical bar.

It evaluates reading as a level placement test and has online classes and courses to practice the four language skills.

(6) English Mansion

It has a complete course modality completely free of charge, as well as a series of exams to evaluate the users' performance, without the need for registration. It also offers a paid version with premium packages to access special courses. Unlike the previous tools, this one does not have the option of saving the user's progress, since it gives freedom to learn the lesson you want, i.e. it does not have a sequence per level. In this web tool, all language skills can be learned and practiced, both receptive and productive, as it contains sections of all kinds.

(7) BBC Learning English

BBC Learning English is one of the few tools that is entirely free and does not require any registration, although if the user wishes to save and monitor their progress they have the option to log in. BBC has a website, as well as the possibility of downloading apps on Android and iOS. However, this tool does not perform a placement test, which prevents the user from knowing their English language level. This tool is recommended mainly for practicing receptive skills such as reading and listening.

(8) Hangman

Hangman does not have a modality as such, this tool offers practice games to learn English vocabulary, the platform has totally free gamification games associated with the website. Therefore, there are no iOS and Android apps. On the other hand, being a gamification tool, it does not perform any positioning or knowledge test, nor does it require any registration and it does not have progress records.

As such, Hangman does not test anything other than reading or vocabulary, but it does have games hosted on the website that have other modalities. For example, the website has sentence completion modalities in a version like Jewlery or Candy Crush. Likewise, you can learn new words, such as the parts of the body by pointing out where they are located, learn professions or trades, the weather, even spelling bee courses and practice writing and grammar by choosing images or words. Or, relate concepts, correct sentences or interact in memory games focused on improving vocabulary.

Authors such as Ram í rez Cogollor (2014) define gamification as a technique, a method and a strategy that occurs through the knowledge of the elements that make games attractive and identifies, within a given activity, task or message, in a NON-game environment, those aspects that can be converted into a game or playful dynamics. All this in order to achieve a special link with the users, to encourage a change in behavior or to transmit a message or content. In other words, to create a meaningful and motivating experience. Mar í n & Hierro (2013), meanwhile, refer to the term gamification as applying strategies, thoughts and game mechanics in non-game contexts, outside games, in order to make people adopt certain behaviors.

(9) VOA Learning English

It has a free mode that offers courses and exercises both on its website and in the apps available for download on iOS and Android; this tool does not perform positioning tests and no prior registration is required to access the courses and lessons.

It evaluates and allows you to practice through reading, writing and reading exercises, as it consists of videos and activities for practicing grammar and understanding English.

(10) Busuu

Busuu, is a free version tool available on a website and for both iOS and Android. There is also the possibility of registering through a premium account with a monthly fee. In its free version there is a positioning test or start in the

same way start with the activities from level A1.1 of the English language where each activity that the user performs will save the progress. It evaluates reading, listening and writing in different measures with very varied exercises.

4. Conclusions

After the application of the interviews, the following conclusions were reached: Regarding the variable of frequency of use as a whole, the respondents refer to having very frequently used the web pages for learning or reinforcing the English language, demonstrating to possess the necessary knowledge for their use.

Likewise, with respect to the variable, the students interviewed show a favorable attitude towards the use of free web tools as an educational possibility for the autonomous learning of English. Regarding the type of web tool, the interviewees emphasized the importance of all web tools in terms of their usefulness for learning English.

However, the frequency of use highlighted the top ten of the most used web tools, with Memrise being the most used and Busuu the least frequently used. Regarding the skills that can be practiced in each web tool, it can be deduced that the productive skills: speaking and writing turn out to be the most sought after in their practice by the students, especially because the most frequently used tool was Memrise, where by means of artificial intelligence it allows interaction through a conversation with the web tool. Finally, the efficiency of English language learning through the use of web tools estimates that the interviewees consider that these tools are a reliable means to promote learning since they feel comfortable using the web.

Likewise, they argue that they do not feel pressure from the teacher or peers to express themselves orally; which is too beneficial in how students direct their autonomous teaching–learning process through the use of free tools on the web or their applications available for mobile phones. This has reflected in higher education students enrolled in virtual learning environments a more attractive and interactive way that reaffirms what they have learned in synchronous class sessions, being these tools the ones that drive educational innovation, in addition to the fact that the ten tools presented are so intuitive that there is practically no need to master advanced knowledge in ICT, which guarantees an effective interaction with these English language learning tools.

After this intervention, we can deduce the good acceptance of the various tools, since students spend a large part of their time in front of their computer and a mobile device, being able to make the most of the tools available either on the web or those that offer a mobile application download.

Undoubtedly, the use of free web tools for English language learning can improve the quality of the teaching and learning process. This is evidenced in the interviews conducted with students enrolled in the Bachelor's Degree in Educational Innovation and Technology enrolled in the English course.

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