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Incorporating Sign Language to an Inclusive Classroom Setting: A Meta-Synthesis

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Abstract: ***This study meta-synthesize significant findings of relevant studies that have incorporated sign language into an inclusive classroom. The studies related to sign language in an inclusive classroom from 2014-2021 with the use of a set inclusion and exclusion criteria have screened and included nineteen (19) studies. The included studies were collected from Publish or Perish Software and were organized using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram. Braun and Clarke's six-step thematic analysis was used to analyze the synthesized data which resulted in five (5) themes, namely: insufficient support from parents; communication barrier; language barrier; lack of resources; and lack of skills. Results also showed positive feedback when sufficient supportive services were provided. Therefore, incorporating sign language in an inclusive classroom requires skillful sign language teachers, sufficient resource support, and consistency in using sign language. It is recommended that academic institutions advocate sign language to normal students and teachers to achieve effective communication with the non-hearing community.***
Keywords: Communication, hearing impairment, inclusivity, Meta-synthesis

I. INTRODUCTION

Sign Language has been used as a tool for communication to people with hearing impairment (Lynch, 2003). On the other hand, hearing people may seem not to recognize and practice sign language causing communication barriers with deaf people to happen (Battistoni et al., 2020). Sign language is used as a teaching aid in Deaf Education and as the means to communicate between hearing teachers and Deaf students. Hearing family members of Deaf children also rely on these pseudo-sign languages to facilitate family communication and understanding. Until recently, they were also taught to hearing people who wanted to communicate with deaf friends or coworkers (Daniels, 2001). Moreover, with the use of sign language, an inclusive environment can positively grow for both regular and hard-of-hearing students (Kennedy, 2019), and a healthier and more comfortable school setting is being observed. With that being said, in incorporating sign language into an inclusive setting, specific strategies should be followed to facilitate the learning and relationship of students in the inclusive education classroom (Alasim, 2018).

Few published papers noted that Sign Language would not only benefit the teachers but as well as the students. Children would find it fun and engaging to learn a new language (particularly one that requires physical movement); and, in turn, using sign language would give them a greater understanding of linguistics (Avilez, 2012). In addition, students with hearing impairment can be provided with the least restrictive environment and children with normal hearing might also gain unexpected benefits. The classroom will be bilingual where the signing would be employed simultaneously with spoken English (Heller, I. et al., 1998). Incorporating sign language in a regular and inclusive environment is extremely useful as a source of support; academically, socially, and emotionally to students with hearing impairment (Alwis, 2005).

In the long run, a communication mode that is acceptable to all parties is still worthwhile for facilitating an inclusive classroom (Ademokoya, 2018).

However, if these disparities aren't acknowledged, they could cause miscommunication or conflict between a deaf patient and their hearing doctor. Misunderstandings can also result from varying interpretations of nonverbal cues like touch, facial expression, and body posture. Even different expectations regarding the format of everyday discourse can cause misunderstanding. Being aware that cultural differences exist is the first step in avoiding misunderstandings (Barnett, S., 2002). Moreover, The study aims to meta-synthesize the effectiveness of incorporating sign language into the relationship between hearing students and non-hearing students in an inclusive classroom setup. Where, it also aim to answer the following questions:

1) What are the challenges in incorporating sign language into an inclusive classroom?
2) How does incorporating sign language affect the relationship of non-hearing and hearing students?
3) What strategies should be done to aid the gap of the hearing and non-hearing students in the classroom?

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II. METHODOLOGY

A. *Research Design*

This study utilizes meta-synthesis, the process of combining related qualitative data in order to create a new interpretation of the research study, incorporating sign language in the inclusive classroom. The procedure necessitates synthesizing and analyzing the results of other various relevant studies. In order to assess the effectiveness of integrating sign language into the interactions between hearing and non-hearing students in an inclusive classroom setting, this study used meta-synthesis. This technique aids in the collection of qualitative data from various qualitative research connected to the incorporation of sign language as a learning tool in inclusive classrooms and other pertinent studies.

B. *Search Strategy*

Publish or perish software, an academic tool used for the study, is used to retrieve and search other related research articles in order to generate information from published years. Google Scholar is an electronic database that is used to search scholarly articles, books, and documents for the study. The study relating to the topic that was published no more than ten years ago was examined and utilized by the researcher (2012-2022). Sign language, inclusive classrooms, non-hearing and hearing pupils, and other terms were entered by the researcher to broaden the search, and these terms will be utilized to gather academic papers and articles relevant to the study.

C. *Inclusion/Exclusion Criteria*

Specific related research is chosen based on inclusion and exclusion criteria to ensure that the study collects the most useful data possible. Inclusion and exclusion criteria determine who can and cannot participate in a research study. They are known collectively as eligibility criteria, and establishing them is critical when seeking study participants (Nikolopoulou, 2022). The following protocols/criteria were used to select the included studies: (a) studies from 2014-2022, (b) studies must be about incorporating sign language in an inclusive/regular classroom, (c) studies should talk on the challenges faced by both hearing and non-hearing students and teachers using sign language, (d) studies must be found in Google Scholar.

D. *Data Analysis*

Thematic analysis is a qualitative data analysis method that involves looking through a set of data to find, examine, and report on recurrent patterns (Braun and Clarke, 2006). This method incorporates interpretation into the processes of selecting codes and developing themes (Aronson, 1995). The following tasks will be completed by researchers using this method: data familiarization with the data, initial coding, theme searching, theme review, theme definition and naming, and report production.

III. RESULTS AND DISCUSSION

The findings were interpreted in accordance with the study's objectives, yielding one meta-theme: Barriers to effective sign language integration in an inclusive classroom, and its corresponding five sub-themes: (1) insufficient support; (2) communication barriers; (3) language barriers; (4) lack of resources; and (5) lack of skills.

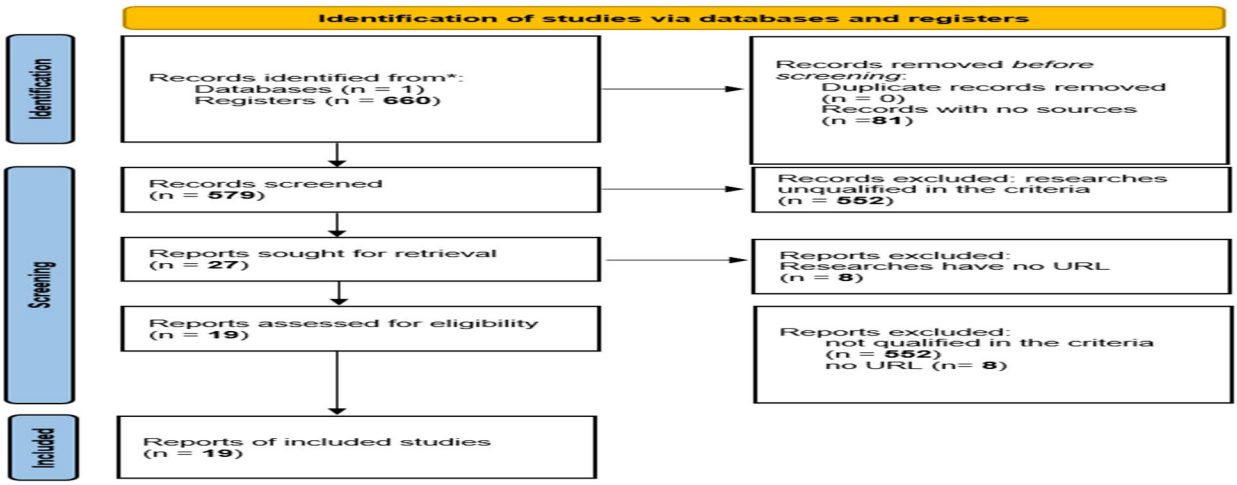


Figure 1. Identification of studies via databases and registers using PRISMA

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There were three (3) stages of the research paper selection using the PRISMA Flow Diagram. The three stages are the following: Identification, Screening, and Included. Six hundred sixty (660) studies were registered in Google Scholar during the identification stage using the Publish or Perish software. Because there were no available sources, 81 records were removed before screening, resulting in 579 studies screening. The screening stage included two (2) sub-stages. Five hundred fifty (552) studies were excluded in the first substage for failing to meet the criteria, leaving twenty-seven (27) studies. Because eight (8) studies were excluded due to a lack of a URL, nineteen (19) studies were assessed for eligibility and included studies.

Table 1. Studies focusing on incorporating sign language in an Inclusive Classroom

No.	Authors	Year	Setting	Codes
S1	Ngwaru, J.M.	2021	Zimbabwe	1. Roles of Parent 2. Uniformity in sign language as a mother tongue. 3. The mismatch of different sign languages from different families and communities.
S2	Chibuike, E.	2020	Calabar Metropolis	1. Insufficient resources for teaching sign language 2. The lack of sign language teachers.
S3	Favour, B.M.	2019	Lusaka, Zambia	1. Inadequate teaching/ learning materials for sign language.
S4	Ishrat, G.	2021	Pakistan	1. Responses to the inclusive settings have been positive. 2. For a variety of reasons, an inclusive educational environment needs to be improved.
S5	Murnane, R.	2019	Randolf Ave St. Paul, United State	1.Positively responded to the ASL-based instructions. 2. The possibilities for discussing and learning about exceptionalities.
S6	Kamukwamba, K. L.	2017	Lusaka, Zambia	1. The different ways that Sign Language is used will impact academic work. 2. Teachers do not have enough time to learn sign language.
S7	Mitiku, W., Balew, B.	2020	Gondar, Ethiopia	1. Lack of skills 2. Lack of trainings, knowledge, and experience 3. Lack of collaboration 4. Insufficient teaching materials
S8	Khalid, L., Asghar, M. Z.	2021	Lahore, Pakistan	1. Institutional support for the linked professionals is insufficient. 2. The absence of supportive resources. 3. Inadequate institutional backing
S9	Basha, T.	2014	Addis, Ababa	1. Sign Language's drawbacks 2. Unable to assist hearing-impaired students in learning sign language. 3. The connection between a learner's linguistic proficiency and writing ability.
S10	Basha, T., Engida, T.,et al	2020	South, Ethiopia	1. Teachers and students with hearing problems have a significant communication gap.

				2. Students with hearing impairments were identified as having difficulties because of their limited sign language proficiency, lack of planned financial and material support, lack of sign language interpretation, and lack of hearing aids.
S11	JM Joshua	2014	Tanzania	1. Insufficient sign language instruction for primary school students.
S12	BK Nath	2018	Calicut	1. The differently-abled students in their class are negatively impacted by a lack of resource teachers, inadequate adapted facilities in the classroom, a lack of support from numerous stakeholders, unsuitable learning methodologies, inadequate teacher training, and issues with curriculum transfer.
S13	Akoth, J.	2021	Kampala City	1. The emergence of UgSL in the classroom was influenced by the presence of Deaf role models, parents, and Deaf peers. 2. To become fluent, UgSL speakers must receive training and have their
S14	Gallego, D., Castañeda, S.	2016	Pereira	1. The SLG teacher has received training in teaching SLG to deaf students, but she has not received any training in teaching SLG to hearing students or in the creation of lesson plans.
S15	Kamukwamba, K.	2017	Zambia	1. The use of Sign Language varied, and participants thought this had an impact on how it was used in academic settings.
S16	Skaten, GHS Urtal, E Tiselius	2021	Brazil	1. Comparing hearing and deaf sign language users, deaf sign language users do poorly in the psychological domain.
S17	Hatiye, D.	2016	Ethiopia	1. Economic and social burden 2. A social injustice 3. Inadequate access to public education services
S18	Tanner, J	2022	Ottawa	1. The findings of this study serve as a convincing argument for the junction of gesture and ASL, which is welcomed news for ASL educators and academics with a keen interest in gesture.
S19	Omer, HJ	2017	Somali	1. Teachers should take quick courses in sign language to improve their skills. 2. To stay current with the current trends in the education of students with hearing impairment, teachers who work with hearing-impaired children should regularly attend workshops and seminars.

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Journal articles comprised the final collection of 19 studies. The authors were associated with institutes in Africa (12 publications), Asia (3 publications), North America (1 publications), and South America (2 publications). Data that was gathered and analyzed used qualitative (10), mixed methods (8), and descriptive (1) approaches. One meta-theme and five sub-themes emerged from the nineteen (19) studies. The following have been identified as gaps affecting the potential effectiveness of incorporating sign language in an inclusive classroom:

A. Meta-Theme: Barriers To Effective Sign Language Incorporation In An Inclusive Classroom

Inclusive education entails giving all students a high-quality education, regardless of age, disability, gender, or other factors (Hornby, 2011). However, some instances or gaps do occur as institutions attempt to incorporate sign language into their curriculum. These incidents have an impact on the outcome of sign language incorporation as well as the learning of both hearing and non-hearing students. As a meta-theme, the barriers to effective sign language incorporation in an inclusive classroom generated five sub-themes.

B. Sub-theme 1. Insufficient Support From Parents

One issue that has caused parents of disabled children to keep their children at home instead of sending them to school has been identified as the built environment (Majoko, 2013). Parents keep their kids away from others for a long time, only to send them off to school when they're too old psychologically to adjust, and regular people avoid interacting with and teaching skills to disabled people, leaving them alone (Mpofu, 2004). To further assist their efforts to fully incorporate Deaf pupils, all teachers acknowledged a lack of parental support. Parents display signs that are different from those displayed in schools. Parents neglect their kids' language development, which makes them socially isolated (J.M. Ngwaru).

Deaf people are socially isolated because they cannot obtain environmental information since hearing people are not familiar with Sign language. 90% of students with hearing impairments are born to hearing parents, who cannot help their children learn sign language (Hallahan & Kauffman, 2006). A gap in social inclusion at school is caused by inconsistent use of the same Sign language at home and at school as well as a lack of complete assistance from parents and the community (Massa & Mayer, 2006).

C. Sub-Theme 2. Communication Barrier

Communication barriers and a lack of information access were major challenges in the teaching and learning processes (Basha & Engida, 2020, et. al). Students with hearing impairments were separated from hearing students in group projects and cooperative learning activities due to communication barriers. Bench (1992) also stated that it has been argued that hearing loss causes adjustment problems in children because communication problems create barriers to social development that are difficult to overcome. According to Basha & Engida (2020, et. al) it showed that teachers and students with hearing problems had a significant communication gap.

This communication barrier contributes to poor academic performance, and there is an academic achievement gap between hearing students and students with hearing impairments (Basha & Engida, 2020, et. al). Due to communication problems and the fact that the majority of the hearing students are meeting their deaf counterparts for the first time in a classroom, hearing people in the community are unable to freely associate with deaf people (Ngwaru, J.M). Deaf students also made the point that because of communication barriers, hearing pupils are unable to assist them with their academic problems (Hatiye, D.D, 2016). Another study by Knuckey (2005) showed that deaf students felt as though they were not a part of the learning process due to the communication barrier, which harms the deaf students' self-esteem and self-image.

D. Sub-Theme 3. Language Barrier

According to Tirussew (2005), due to the gap created by language problems, deaf persons have lost out on numerous chances. Visual teaching resources that include sign language into the teaching and learning process are essential to enhancing academic success because there is a communication gap between the deaf and their instructors (Basha & Engida, 2020, et. al). Additionally, sign language training should be used to reduce language barriers.

According to Hatiye (2016) deaf people have lost out on numerous possibilities because due to the gap created by language barriers, they were being excluded. Language barriers are a challenge for deaf students during exam and test instruction or corrections, according to all teachers. Due to the language barrier and consequent lack of social and academic interpretations, deaf people may feel inferior and alone (Favour, B.M.).

E. Sub-Theme 4. Lack of Resources

Teaching sign language to deaf students is difficult when there aren't enough resources (Chibuike, E. 2020). There are insufficient teaching-learning materials, as well as a lack of assistive resources and adapted facilities in the classroom. Teachers cannot deliver instruction effectively to deaf students due to a lack of teaching and learning equipment, non-hearing students struggle to learn.

For students who have hearing impairments, a lack of resources is another problem. In order to support students in special needs education, instructors, and 19 nearby schools, resource centers are pedagogical establishments that are stocked with certain resources and aids (Carrington and Robinson, 2006). Hearing-impaired kids receive less support because the plan for this resource center was not put into action. Implementation of inclusive education was hampered by a lack of resources. Prior studies in Zimbabwe (Mpofu, 2000; Peresuh, 2000; Mpofu et al., 2007; Chireshe, 2011) bemoaned the lack of resources as a barrier to the implementation of inclusive education.

F. Sub-Theme 5. Lack of Skills

Due to a shortage of qualified sign language teachers, children with hearing loss have trouble developing their sign language abilities in elementary school (E. Chibuike, 2020) If teachers are not deaf language literate, deafness hinders children's learning in the development of receptive communication skills (Ntinda K. 2019). Inclusion is hindered by teachers' lack of training and experience with hearing impairment (Khalid L. 2021). Since deafness is uncommon, "mainstream teachers are unlikely to have the experience, knowledge, and skills to support deaf children in accessing the curriculum in a way that optimizes their experience and outcomes," according to the study (Benneth H, 2016). According to Manga and Maknu (2020), teachers of deaf-blind pupils encounter unique challenges in the classroom when it comes to teaching and learning strategies since they lack expertise and experience with deaf-blindness. Since teachers lacked the strategies and abilities to deal with a diverse range of students, including those with disabilities, there was conceptual confusion and misunderstanding of inclusion (F. Chinangure, 2021). Teachers need to improve knowledge and abilities outside of their subject areas and material (Mafa & Chaminuka, 2012).

IV. CONCLUSION AND RECOMMENDATION

In incorporating sign language in an inclusive classroom it requires skillful sign language teachers, sufficient resource support, and consistency in using sign language. It is recommended that academic institutions advocate sign language to normal students and teachers to achieve effective communication with the non-hearing community.

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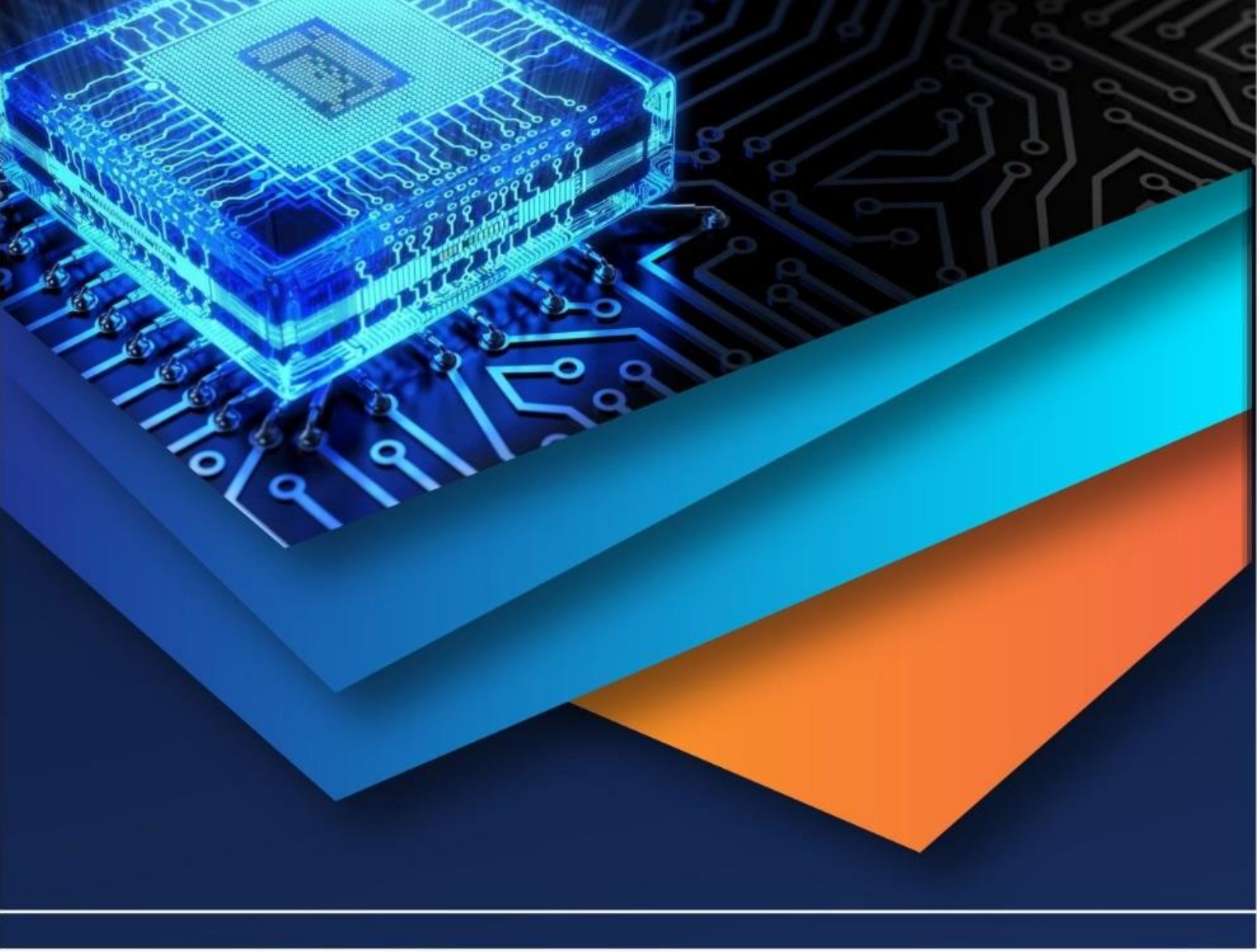
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