Online ISSN : 2249-460X
Print ISSN : 0975-587X
DOI : 10.17406/GJHSS

Global Journal

of Human Social Sciences: G

Linguistics & Education

Highlights

- Exploring Digital Frontiers
- Dyslexic and Disadvantaged Readers
- Model of Organizational Activities
- Natural Sciences under Stem Education

Discovering Thoughts, Inventing Future

VOLUME 23 ISSUE 11 VERSION 1.0

Global Journal of Human-Social Science: G
Linguistics & Education

Global Journal of Human-Social Science: G
Linguistics & Education

Volume 23 Issue 11 (Ver. 1.0)

Open Association of Research Society

Incorporation No.: 0423089
License No.: 42125/022010/1186
Registration No.: 430374
Import-Export Code: 1109007027
Employer Identification Number (EIN):
USA Tax ID: 98-0673427

Global Journals Inc.

*(A Delaware USA Incorporation with "Good Standing"; **Reg. Number: 0423089**)*

Sponsors: Open Association of Research Society
Open Scientific Standards

Publisher's Headquarters office

Global Journals® Headquarters
945th Concord Streets,
Framingham Massachusetts Pin: 01701,
United States of America
USA Toll Free: +001-888-839-7392
USA Toll Free Fax: +001-888-839-7392

Offset Typesetting

Global Journals Incorporated
2nd, Lansdowne, Lansdowne Rd., Croydon-Surrey,
Pin: CR9 2ER, United Kingdom

Packaging & Continental Dispatching

Global Journals Pvt Ltd
E-3130 Sudama Nagar, Near Gopur Square,
Indore, M.P., Pin:452009, India

Find a correspondence nodal officer near you

To find nodal officer of your country, please email us at *local@globaljournals.org*

eContacts

Press Inquiries: *press@globaljournals.org*
Investor Inquiries: *investors@globaljournals.org*
Technical Support: *technology@globaljournals.org*
Media & Releases: *media@globaljournals.org*

Pricing (Excluding Air Parcel Charges):

Yearly Subscription (Personal & Institutional)
250 USD (B/W) & 350 USD (Color)

Editorial Board

Global Journal of Human-Social Science

Contents of the Issue

Global Journal of human-social science: G
Linguistics & Education
Volume 23 Issue 11 Version 1.0 Year 2023
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-460X & Print ISSN: 0975-587X

Exploring Digital Frontiers: An Evaluation of Accessibility Tools and Educational Opportunities in the Louvre's Virtual Museum

By Franciele Amaral, Sheisa Bittencourt & Alan Bittencourt

Universidade Feevale

Introduction- The pandemic caused by the coronavirus brought the world to a halt, placing Brazil in social isolation since March 2020 and bringing repercussions in many areas of society. School Education is one of these areas, where in-person teaching ceased to occur in practically all countries, switching to a forced regime of Remote Education. This initiated an emergency transformation in teaching practices. Teachers found themselves obligated to reformulate their teaching practices, to adapt to technologies that were not necessarily part of their repertoire, and the use of the Internet became a major ally for educators at this time.

The pandemic scenario created a feeling of impermanence and insecurity. This moment ends up resembling the concept of liquid and light times mentioned by Bauman (2007). The author states that everything is light, molds, and dissolves very quickly. Thus, it is possible to associate this malleability of liquid times with the pandemic context where all changes in teaching are temporary, new announcements are made at record speed, where new guidelines arise to annul the previous ones and the only certainty is that until there is a definitive solution, no decision in educational terms will be permanent.

GJHSS-G Classification: *FOR Code: 1303*

Strictly as per the compliance and regulations of:

Exploring Digital Frontiers: An Evaluation of Accessibility Tools and Educational Opportunities in the Louvre's Virtual Museum

Franciele Amaral [α], Sheisa Bittencourt [σ] & Alan Bittencourt [ρ]

I. Introduction

The pandemic caused by the coronavirus brought the world to a halt, placing Brazil in social isolation since March 2020 and bringing repercussions in many areas of society. School Education is one of these areas, where in-person teaching ceased to occur in practically all countries, switching to a forced regime of Remote Education. This initiated an emergency transformation in teaching practices. Teachers found themselves obligated to reformulate their teaching practices, to adapt to technologies that were not necessarily part of their repertoire, and the use of the Internet became a major ally for educators at this time.

The pandemic scenario created a feeling of impermanence and insecurity. This moment ends up resembling the concept of liquid and light times mentioned by Bauman (2007). The author states that everything is light, molds, and dissolves very quickly. Thus, it is possible to associate this malleability of liquid times with the pandemic context where all changes in teaching are temporary, new announcements are made at record speed, where new guidelines arise to annul the previous ones and the only certainty is that until there is a definitive solution, no decision in educational terms will be permanent.

Thus, the teacher resorts to the use of network technologies as a fundamental part of their actions in these pandemic times. The professional seeks to understand and insert themselves in this new educational context, with all necessary inclusive aspects, the teacher will need knowledge that falls within the concept of "Digital Literacy," which is nothing more than the ability to execute the necessary digital skills for the proper use of digital resources.

In addition to using the internet to create their activities and generally conduct remote classes, the online navigation environment allows teachers to suggest activities that stimulate critical thinking. Just like the subjects of different disciplinary areas, such as Portuguese and Mathematics, the teacher has also made use of differentiated pedagogies that promote the development and learning of individuals.

But it is important to note that for these materials to be properly accessed and fulfill their proposal to stimulate critical thinking and learning, there are also some obstacles to be overcome. The first of them concerns Internet access. However, even though this is a severe problem to be considered, Brazil has greatly expanded in terms of access to the world wide web. The country is fourth in the world ranking of internet users, containing 120 million connected people, representing over 70% of the country's population. This large number of connected people, added to the emergency situation caused by the pandemic, meant that many school activities suggested exercises using digital environments such as libraries and digital museums, for example.

Although Brazil is celebrating the great expansion of the number of people with Internet access, there is still a large number of individuals who do not participate in this growth. Thirty percent of Brazilians do not have internet access, which means that more than 60 million people simply cannot switch to a remote education system because they do not have the technical resources for it. This scenario has brought to light very specific problems of the class difference in Brazilian reality such as: lack of Internet access in the poorest communities, lack of equipment or even quiet places to study for poorer students, for example.

However, beyond these topics that have been a great source of debate in recent months, a new problem arises that is born in this forced remote teaching, and this concerns the lack of accessibility in different digital environments. Teachers have taken advantage of the digital context to suggest activities that explore content that goes beyond the different disciplinary areas. But how do students with some kind of disability fit into this context? How are digital environments prepared to receive students with disabilities and provide them with the same experience as other students?

Thus, a class activity that suggests online visiting to a museum may be completely impractical for a blind student if the museum's website is not prepared in terms of accessibility. And in light of this scenario, the proposal of this article arises from this problem: How are

Author α ρ: Doutoranda na Universidade Feevale.
e-mails: sheisa.court@gmail.com, francieleamaralcunha@gmail.com
Author σ: Especialista em Marketing na Faculdade Fael.
e-mail: alancourt.rs@gmail.com

online museums implementing accessibility in their digital exhibitions?

In seeking to answer the problem presented, this article is based on the case study of the Louvre Museum, which has been widely cited on social media as an example of an extracurricular activity that students can do in pandemic times. On the museum's website, visitors can visit spaces and get to know works of art, in a 3D navigation scenario. The research aims to perform an accessibility verification at the Louvre based on the principles of WCAG (Web Content Accessibility Guidelines). The research hypothesis is that this analysis may enable the perception of strong points that the field of online museums has developed in terms of accessibility resources, and it will also be possible to identify gaps to be explored in this field, in order to reduce the exclusion rate of people with disabilities, so that they can actually participate in school activities that suggest visiting online museums. The methodology will involve a cross-reference between found presets and principles of accessibility and usability.

II. Development

This article aims to analyze the accessibility in 3D navigation virtual museums, but for this, it is necessary to specify some concepts that are important for this research. Thus, this item is divided into five parts: Virtual Museums, School Inclusion, Digital Literacy, Digital School Inclusion, and User Experience as the inclusion of students with disabilities, and Web Accessibility and Usability.

III. Virtual Museums

A museum, whether physical or digital, has a main mission which is to disseminate information, communicate, and thus educate the public. Therefore, it makes a lot of sense that visiting online museums has been of great importance to complement remote teaching activities. Stewart (2009) says that an online museum, by eliminating geographical barriers, has the ability to significantly expand the visiting public and, moreover, also has the potential to offer the user detailed exploration of the artifacts that interest them and deepening their contexts.

Henriques (2004) explains that museums have developed three different ways of demarcating their presence in the digital environment. These can be divided into: electronic brochures, museums in the virtual world, and truly virtual museums. These are different approaches and, consequently, offer different forms of approach and the public to relate to them.

Digital museum sites in the style of "electronic brochures" are the most used type by museums (HENRIQUES, 2004). Its objective is to disseminate basic information about the institution itself, such as location, opening hours, museum history, and more technical and bureaucratic information about the institution. The second type of digital space dedicated to museums would be: "museums in the virtual world" these are represented by sites that provide more detailed information about the collection of works itself. "The site ends up projecting the physical museum into virtuality and often presents temporary exhibitions that are no longer mounted in its physical space, making the Internet a kind of technical reserve for exhibitions" (HENRIQUES, 2004, p. 05).

Henriques (2004) explains that the third category of sites dedicated to museums would be that characterized by interactivity, where site navigation is thought considering the public, which he specifically calls "really virtual museums." The truly digital museum can only exist in the digital plane, not having the obligation to exist properly in the physical plane. If the site represents a museum that exists physically, it can also function as a complement to the physical museum. It can present digital exhibitions that are concurrent with the physical ones, reproducing their content, but beyond that, the truly digital museum has the ability to provide new approaches, present complementary exhibitions or even totally independent of those shown in the physical space.

IV. School Inclusion

The process of school inclusion refers to an educational process that aims to maximize the ability of students with disabilities in regular school classrooms. Heidrich, Santarosa, and Franco (2012) say that this is a constant process that needs to be continuously reviewed. However, having students with disabilities in regular public and private school classes has not been an easy task.

For Sassaki (1997), school inclusion as it is known today was preceded by other phases. Thus, it is very necessary that these four categories mentioned by the author – exclusion, segregation or separation, integration, and inclusion – are always referred to whenever working with school inclusion, as it becomes very problematic to use the nomenclature of these to talk about the period we live in today. Camargo and Bosa (2009) point out that this lack of knowledge about the principles of inclusion constitutes one of the main teaching problems for the inclusion of students with disabilities. The authors say that "several difficulties were identified, pointed out by teachers, such as the lack of guidance, structure, and pedagogical resources. In addition, it was found that teachers tend to confuse the principles of inclusion and integration" (CAMARGO; BOSA, 2009, p. 69).

Thus, for the elaboration of this article, it is necessary to briefly describe each of the phases of school inclusion. The first phase corresponds to the period before the 20th century, which can be called the

exclusion phase, in this period most people with disabilities did not receive any type of school education and private sphere spaces were reserved for them.

The second phase begins in the 20th century and is also known as: segregation. This began when people with disabilities began to be served within large institutions, which were not necessarily teaching environments. These had therapeutic and literacy purposes. In the second half of the century, movements were formed by parents of children who did not have the right to study in common schools.

The third phase is situated in the 1970s, and it is named the integration phase. This movement was directly driven by the movement of parents with children with disabilities who demanded that their children occupy regular teaching institutions in the 1950s and 1960s. Despite the great advance obtained in this new phase, there were still major problems. Although schools now accepted students with disabilities in regular classes, this only applied to students who could adapt to this class. No adaptation to the system was expected. Thus, integrated or integrative education required students to adapt to the school system and summarily excluded those who could not adapt or keep up with the pace of the other students. It is worth noting that this way one should avoid the term integration when referring to school inclusion. Although semantically the terms can be used as synonyms, in conceptual terms that constitute the history of inclusive school education they have many differences between them and should under no circumstances be used one because of the other.

The fourth phase refers properly to the inclusion phase. This emerged in the second half of the 1980s and increased in the 1990s. The main idea of this phase is to adapt the school system to the specific needs of each student. Inclusion, in this way, proposes a single educational system, with quality for all students, whether or not they have a disability. Heidrich, Santarosa, and Franco (2012) say that inclusion is based on principles such as: accepting individual differences as an attribute and not as an obstacle, valuing human diversity for its importance for the enrichment of all people, the right to belong and not be left out, the equal value of minorities compared to the majority. Thus, inclusive education depends on a series of factors to be successful, involving teachers, parents, principals, among others. In a collaborative way, they must seek solutions to the challenge that constitutes the presence of very different students in the same class.

V. Digital Literacy

In light of the current situation experienced as a consequence of the coronavirus and the need for educational institutions to modify their pedagogical routine due to quarantine, leading schools and colleges to adapt to a new teaching formula, it became necessary for teachers from the face-to-face network to create new methodological proposals with the aim of developing educational possibilities that would make up for the time away from the regular classroom.

Therefore, teachers had to adapt to remote teaching, with the creation of activities that were possible for the cultural, cognitive, and sensory stimulation of students. In this way, they were compelled to create proposals that use the internet as one of the main resources for carrying out their activities, resorting to technologies to develop situations in which student stimulation was achieved.

However, to conduct a virtual activity or even develop the use of technologies as a source of learning, it is necessary for the teacher to have a critical understanding of the use of digital media. Likewise, it is also important that the education professional has the creative capacity to develop activities that reach the largest possible number of students, creating inclusive and accessible activities.

In this scenario, it is important to understand that to formulate relevant activities, taking into account all inclusive aspects, the teacher must have knowledge that refers to the concept of Digital Literacy, which is nothing more than the ability to perform the digital competencies necessary for the correct use of digital resources. For Alves (2014, p. 02), "Digital Literacy deals with the ability to access, analyse, understand, use and critically evaluate ICTs", that is, it is a way to use digital media correctly, enabling a broader understanding for all parties. Also, for the author:

> [...] for the teacher to act deftly in this scenario, managing to select what will really favour the acquisition of cultural capital by their students, leading them to critical autonomy, a training adequate to the innovation required by digital society is demanded. (ALVES, 2014, p. 02).

That is, even before proposing any digital activity, the teacher must observe whether the existing activity significantly reaches all their students, taking care to build possibilities that are possible to be carried out by everyone, as by not taking this care, the teacher may end up excluding some students from the activity.

Digital literacy is linked to the digital competencies necessary for using the Internet, but critically. It is the way multimedia tools are used, taking advantage of the space to produce and learn.

Although the school generation today has enough capabilities to use computers, the internet, and digital media, this does not mean they have enough critical competence to use available resources safely and reliably.

Digital competencies are resources that must be developed by both teachers and students. Martins et al. (2019), in research conducted on "Digital Literacy as a competency for digital citizenship," emphasize that in

school education it is necessary to "transmit information and communication, massively and effectively, adapted to cognitive knowledge, bases of the competencies of the future", besides, they also highlight that it is necessary to "find and highlight references that prevent citizens from becoming isolated with the large volume of information, more or less ephemeral, that invade public and private spaces" aiming at the use of competencies to "guide for individual and collective development projects".

In this way, not only to use digital resources but to filter the relevance and veracity of the information, the methods and uses of resources and the various perspectives that these activities can exert.

Another problem also found in the use of digital skills is in the outdated view of teachers, who for Prensky (2001 apud ALVES, 2014), these have difficulty and resistance in incorporating digital activities into their routines, a consequence of outdated and pre-digital language. In this way, when proposing virtual activities to their students, these teachers run the risk that the activities do not perform their main function, which is to stimulate the imagination, critical and cognitive sense of students and create knowledge. Consequently, often students do not perform the activities as proposed and do not achieve the set objectives because they do not understand what was requested or even because they do not have enough skill to perform such a task. According to Cardoso (2014, p. 47):

> In the Brazilian case, many programs were created targeted at public school networks, aiming to facilitate access to computers and the internet, in an attempt to prepare young people to become proactive citizens in the so-called information and knowledge society.

As a consequence of forming digital competencies for teachers and students, the use of digital media would be carried out correctly, without educational prejudice as a result of the misuse of networks.

To avoid a mistake between a proposal based on an educational objective or an unfounded activity, it is necessary for the teacher to understand the basis of their proposal, filtering the various possibilities that can be offered as a digital activity and conducting tests of the activities in advance before proposing them to students. In this way, by having the ability to develop inclusive and relevant digital pedagogical plans, the teacher avoids situations where certain students cannot perform the suggested activity because they have some kind of cognitive or motor restriction. The best way to avoid situations like this is for the teacher to have adequate Digital Literacy for the type of function they perform.

In this sense, when analysing the navigation processes of the Louvre Museum, which was the basis of this study, it is noticeable that conducting a virtual tour, for example, could only be performed by those students who do not have any cognitive or physical barriers, as performing this activity presupposes that users have full capacity for implementation. Thus, it is up to the teacher to possess the necessary skills to create suitable activities before suggesting that students perform them.

In this context, the importance of investing in adequate digital qualification of teachers and students is reflected, which according to Oliveira and Giacomazzo (2017, p. 169):

> [...] it is necessary that all people, especially children and young people, develop the qualifications needed for critical digital literacy, in order to interfere in a reflective and critical manner. Thus, it will be possible to build and constitute a digital citizenship that allows identifying forms of information manipulation, their origins, sources, and intentions.

That is, the development of Digital Literacy is synonymous with social inclusion and citizenship, as it can transform digital activities into moments of learning, where it is possible for all involved to achieve relevant results. By possessing digital literacy, the teacher can provide feedback regarding the educational centers of museums or spaces where there is the intention to conduct an activity, demonstrating flaws in the creation process and helping to make digital activities more inclusive.

VI. User Experience and the Inclusion of Students with Disabilities

The internet has offered digital inclusion the possibility for students from different social classes to become acquainted with content from various mediums. From students of popular classes who can visit art exhibitions in different locations around the globe through the world computer network, to middle-class youths who can participate in soirees in slums, for example. However, none of these activities will be truly inclusive if the digital environment is not prepared for visitation by people with disabilities. Beyond simply receiving people with disabilities, a digital museum should provide a user experience equivalent to its visitors regardless of whether they have a disability or not.

Thus, at this moment it became necessary to bring the concept of user experience and the concept of experience itself. Bondía (2002, p. 21) states that: "experience is what happens to us, what happens to us, what touches us. Not what happens, not what happens, or what touches." Thus, the author establishes that experience is only relevant if it actually involves the subject, that is, if it is important to what they find pertinent. Therefore, it is up to the team that develops a truly virtual museum the task of designing website navigation, from the first sketches, programming, and tests, in order to make the online visit something that

happens and touches those who honor it, thus characterizing what Bondía (2002) calls experience.

On the other hand, author Stull (2018) says that user experience includes aspects of cultural anthropology, human-computer interaction, engineering, journalism, psychology, and graphic design, and relates to enabling the user to experience a service or product satisfactorily, meeting their needs and expectations generated in relation to the product. In this aspect, a new impasse arises. People who use the internet are used to navigating digital environments and have specific expectations for certain environments. If the virtual museum presents its content in a way that resembles a digital magazine, where the works are listed for example, the user will not have an experience similar to the actual visitation of a museum, this will be more similar to that of a user of digital magazines. It is important to say that this work does not propose to make a comparison between user experiences of virtual museums and digital magazines. The purpose of this is to verify the experience of the blind user in virtual museums.

It is noticeable that many museums have tried to create a user experience for virtual museum visitors that is similar to the experience that a physical museum visitor would have. This is often done through the recreation of the physical environment in 3D digital, where the user can go at their own pace, getting to know the works as well as the physical space of the exhibition. The same concept is also explored through grouped photographs to simulate the 3D environment, with the same purpose of a digital recreation.

Thus, it is noticed that the navigation of virtual museums in a 3D environment makes the user experience closer to a physical visit to museums, but it can create a series of accessibility obstacles for people with disabilities, ranging from navigation using a mouse that can be a problem for people with a motor disability, to the total impossibility of navigation by blind people. Therefore, the objective of this article is to verify how these 3D navigation virtual museums are accessible to people with disabilities.

VII. Case Study: Louvre Museum

Brettell (2006) states there is a common understanding that the Louvre is the most well-known art museum in the world. According to the author, this museum has a collection that includes millions of works. This complex of buildings that covers acres in the centre of Paris attracts tourists from all over the world, making it the art capital of Europe. This author compares the millions of annual visitors the museum receives to a religious pilgrimage, where fervent devotion makes people stand for hours in endless queues, indifferent to the weather conditions just to have the chance to glimpse, often from afar, works that they will not be able to see for enough time.

In this account from Brettell (2006), the experience that most people have when visiting the Louvre is very clear. Even though it is possible to schedule less crowded visits, as shown on the institution's website, the author says that most visitors tour the museum in a single visit, so quickly that the memories relating to this day appear as a confusing blur of aesthetic sensations that are often difficult to classify or assess. Gardner (2020) comments on the painting of the Mona Lisa, by Leonardo da Vinci, which has almost become an icon of the Louvre museum, attracting a thirsty public that crowds in front of it, straining fiercely to see it from fifteen metres away.

In 1919, French artist Marcel Duchamp created a famous reinterpretation of Mona Lisa's portrait, writing "LHOOQ" which emits the sound of "look" in English. Dan Brown's book "The Da Vinci Code" (2003) sold over 80 million copies, giving a new dimension to the Mona Lisa and the Louvre museum in general, expanding its reach with the release of the eponymous film released in 2006. All of this serves to entrench the Louvre museum even more in common sense as a synonym for an important museum.

In view of this scenario, it can be said that although many museums around the world report low visitation and lack of interest from the population, the Louvre exhibits exorbitant visitor numbers, surpassing the annual millions, as pointed out by Brettell (2006). The Louvre's own website features a list of documentaries and fiction films that showcase it as a setting. All this movement and repetition makes the museum widely known to the general population. Even Brazilian soap operas share this interest in showing the Louvre as an important place for art and culture. The Gshow portal points to Paris as the top of the list of soap opera destinations and comments on a series of appearances of the Louvre in Brazilian dramaturgy (PARIS, 2015).

Gardner (2020) says that this interest that the media has dedicated to the Louvre directly impacts its audience numbers. The author adds that perhaps the biggest change that has occurred at the Louvre in the last thirty years has been the tripling of the public in the last three decades. The author says that in 1988 the annual visits did not reach three million, reaching the total number of almost nine million in 2011 and always remaining above eight million every year since then. This high number of visitors has moved a large amount of money. With tickets being sold for 15 Euros at the box office or on the Institution's website, which generates the value of 120 million Euros per year, only in tickets.

Thus, it was this immense popularity that motivated the choice for the virtual museum of the Louvre to be the object of study for the verification of accessibility, as it is imagined that an institution of such prominence would be a reference in matters of

implementation of digital resources that require a large involvement of specialized labor and, consequently, a significant amount of financial resources.

VIII. Web Accessibility and Usability

According to Berners-Lee, director of the W3C and inventor of the World Wide Web, "the power of the Web is in its universality. Access by everyone, regardless of disability, is an essential aspect." As explained by Bassani et al. (2010), the W3C provides standards for web accessibility, considering that it was designed to work for all people, regardless of their hardware, software, language, culture, location, physical or mental ability. According to data extracted from the first report on disability and development conducted in 2018 by the UN, there are one billion people with disabilities in the world, representing at least one-eighth of the world's population. Thus, developing websites from the W3C standards can reduce the impact of disability, because the Web has the power to remove the barriers to communication and interaction that many people face in the physical world.

The document Web Content Accessibility Guidelines (WCAG) 2.1, or Guidelines for Web Content Accessibility, defines four principles that provide the foundation for Web accessibility. These aim to define how to make Web content more accessible to people with disabilities. These principles serve to guide guidelines aimed at developers so that they can make content more accessible to users with different disabilities.

Bassani et al. (2010) cite the four principles that provide the foundation for Web accessibility as:

a) *Perceivable:* Users must be able to perceive the information being presented (it cannot be invisible to all their senses);

b) *Operable:* Users must be able to operate the interface; the interface cannot require interaction that a user cannot perform;

c) *Understandable:* Users must be able to understand the information, as well as the operation of the user interface;

d) *Robust:* Users must be able to access the content reliably through a wide variety of user agents, including assistive technologies.

WCAG 2.1, in addition to developing these four principles, created a series of more specific guidelines that serve to create an accessibility score. According to the number of features available, the website can be categorized into three levels. These are A, AA, or AAA, and progressively represent how much accessibility a site has.

To better understand these criteria, it needs to be specified that there are 78 criteria divided by their criticality. The 30 "A" level criteria are considered the most critical and for this reason are the ones that have the most implementation needs. The second level of criticality would be the 20 "AA" requirements and these are considered the requirements of intermediate urgency, which are important for accessible navigation, but should only be considered after obeying the 30 requirements of the first level of criticality. Finally, the third level of criticality "AAA", composed of 28 accessibility requirements, is the level with the lowest criticality and should only be met when the other 50 items of levels one and two are fully met.

IX. Methodology

As this research does not plan the application of its results in a specific product, its nature is established as basic, that is, it aims to generate new knowledge useful for the advancement of science without envisaged practical application. Prodanov and Freitas (2009) also state that this type of research involves universal truths and interests.

The approach to the problem of this study is qualitative, as it involves a selection made from the principle of data collection, fragmenting and extracting what is necessary and always analysing the value of each piece of information, but without necessarily requiring the use of statistical methods and techniques. Later, it will be possible to view a table with the accessibility features. In it, it is possible to count and relate these items, but no specific statistical technique is needed for this, which would characterise the work as quantitative.

The work has exploratory research purposes, thus providing greater familiarity with the problem and allowing the construction of hypotheses. This research adopts bibliographic and documentary procedures. Prodanov and Freitas (2009) state that the bibliographic procedure is characterised when a work is carried out from already published material, with the aim of putting the researcher in direct contact with the material already written about the research subject. In the case of this research, specifically, a search for academic articles was carried out by crossing the words: accessibility, digital games, and deafness, between the years 2013 and 2020. Through this research, seven academic works were found, in four different journals. After conducting a preliminary reading of their abstracts, it was decided to choose two of them for in-depth research, where the repetition of addressed concepts was observed and how the theoretical framework was divided.

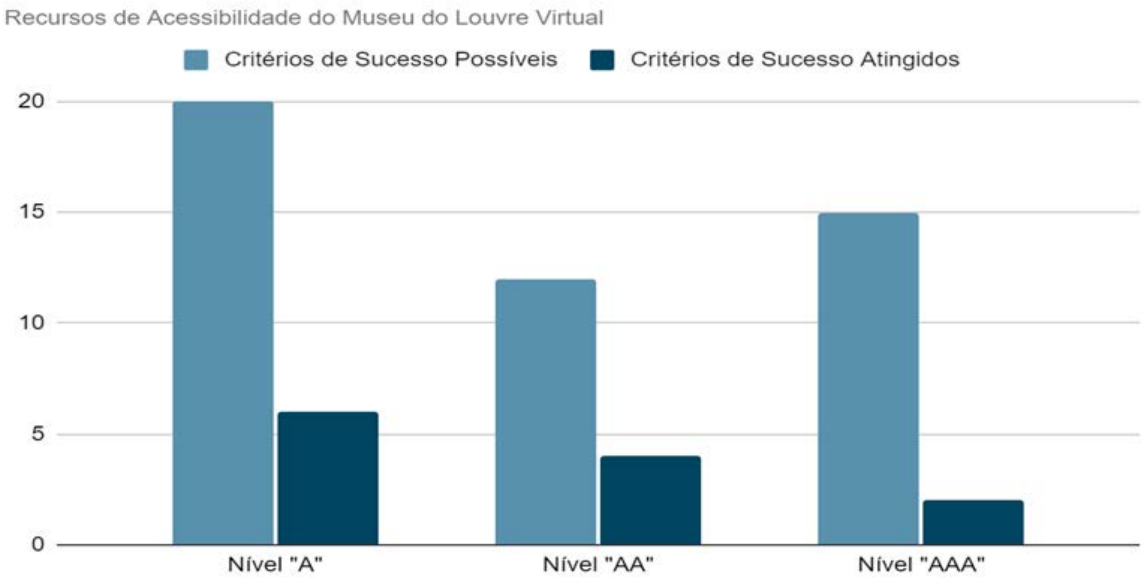
The documentary procedure pertains to the use of digital games as objects of analysis. This type of research is based on materials that have not yet received analytical treatment or that can be reworked according to the objectives of the research. Prodanov and Freitas (2009, p. 56) cite as examples of documentary procedure the analysis of: "official

documents, newspaper reports, letters, contracts, diaries, films, photographs, recordings, etc.". The authors do not cite web pages among their examples, but as these are characterised by their aesthetic and technical proximity to films and recordings, it was decided to characterise them as such in terms of documentary procedure.

Accessibility Analysis in Virtual Museums

For the analysis of virtual museums, a series of checks proposed by WCAG 2.1 were used, as the intention was to discern whether the Louvre was characterised as a virtual museum that offers accessibility options for people with disabilities. And whether these options were sufficient to categorise it as A, AA, or AAA in terms of accessibility.

For the verification of these items, a table developed by Yale University was used. However, although this table shows to be quite effective for analysis and contains columns to be filled with perceptions about navigating the specific object being studied, this table only has 50 of the necessary recommendations for a complete analysis. This is because Yale University only considered the 30 specifications of level A and the 20 of level AA. Thus, the 28 specifications of level "AAA" were disregarded by this table, so it was necessary to insert the missing specifications so that an analysis of the three levels of criticality could be performed. This table is already prepared for specific performance classifications of the site to be analysed. In the "Conformance" column, for example, it is possible to classify this item as: Meets, Does Not Meet, Meets with Exceptions, and N/A (Not Applicable). There is also a field for notes, where it was possible to point out preliminary perceptions for each item, which were fundamental for writing the analysis of the exhibition per se.



Source: Chart developed by the authors (Translated to British English)

Graph 1: Accessibility Features of the Virtual Louvre Museum

The "Not Applicable" level refers to functionalities that do not pertain to the type of navigation proposed by the Louvre Museum, such as live audio and video, or form submission. In this case, for checking purposes, these items will not be counted. Therefore, as shown in the table below, in general aspects, the Louvre Museum and its virtual exhibition adhere to 30.00% of the "A" level criteria, following 6 of the 20 recommendations that were applicable to its type of navigation. The AA level is followed in 33.33% of the recommendations; it does not meet 8 of the 12 recommendations that would be applicable to its website.

Table 1: Accessibility Features of the Virtual Louvre Museum

Level	Total	N/A	Total Applicable	Meets	Meets with Exceptions	Does Not Meet	Percentage Met
A	30	10	20	6	0	14	30.00%
AA	20	8	12	4	0	8	33.33%
AAA	28	13	15	2	0	13	13.33%
Sum	78	31	47	12	0	35	25.53%

Finally, the "AAA" level is met in 13.33%, following 2 of the 15 recommendations that would be possible for its type of navigation. Considering that 13 of the proposed recommendations for the "AAA" level are not applicable, it is concluded that in reality there are a total of 13 WCAG 2.1 recommendations that are not followed by the Louvre virtual museum.

X. Final Considerations

As one approaches the conclusion of research, it is always interesting to revisit the hypothesis and ponder how much one believed it would be possible to achieve certain results. The hypothesis held that through the analysis of the Louvre's accessibility resources, it would be possible to perceive the strengths that the field of online museums has developed in terms of accessibility resources, and also whether it was possible to identify gaps to be explored in this field, in order to reduce the exclusion rate of people with disabilities.

Upon concluding the analysis, it is perceived that there was a very optimistic view of the kind of scenario that would be found. The historical importance of the Louvre gives the idea that it would be the reference in terms of any type of technology that could be implemented. This causes perplexity when realizing that a museum like the Louvre only has a quarter of the "A" level accessibility resources that are considered the most basic by the WCAG.

In fact, when analyzing the accessibility resources implemented by the Louvre, it is thought that all of them may have been done by chance and there was not actually any planning for it. The Web usability and accessibility guidelines (WCAG) state that level A guidelines should be prioritized, then level AA guidelines should be sought, and so on, successively. The Louvre seems to have taken no care in this respect, since it has more success criteria at the second level than at the first. This oversight makes navigation of the virtual exhibition on the Louvre's website impossible for people who use screen readers.

It is noticeable that digital environment navigation aims to provide a user experience equivalent to a real physical visit. The problem with the type of navigation shown by the Louvre is that it is not guided by the WCAG accessibility standards. Turning on the screen reader did not provide any information about navigation. The Talkback user has no possibilities for spatial orientation. Therefore, this user cannot move in the direction of the exhibited works. In addition to not being able to move spatially, there are no descriptions of the works, author's name, and no type of information on screen, and these are only perceptible to sighted people.

An important factor that should be mentioned is the difficulty of conducting an accessibility analysis like the one proposed by WCAG 2.1 by people who do not have knowledge in programming. Although many of the resources can be perceived just by navigating, many of them require entering the page code, searching, and interpreting whether a particular guideline is being followed or not, procedures that could not be performed by someone who was not in the area.

The pandemic has brought new concerns to teachers, mainly regarding a forced adaptation to remote classes. In this context, virtual museums provide an alternative so that students can visit museums with a user experience similar to that of a physical environment. When this project began, there was a

hypothesis that virtual museums were not fully accessible to people with disabilities.

The Louvre was chosen as a case study because it was thought that even if not in a perfect way, there would be at least some resources to be analyzed, but it was not expected that the Louvre's virtual museum would be unnavigable for blind people, or those with low motor skills, for example. These perceptions open questions for several issues.

The main one is to think that creating a user experience that simulates a physical exhibition in virtual museums, without thinking about accessibility, as is the case with the Louvre Museum, will expand the lack of inclusion of students with disabilities. It is also necessary to think that before teachers propose an activity of visiting virtual museums, they must have digital skills to check if it has navigability that is accessible to their students with disabilities.

References Références Referencias

1. ALVES, E. J. Literacia Digital de Professores: Competências e Habilidades para o uso das TDIC na docência. In: ENDIPE – ENCONTRO NACIONAL DE DIDÁTICA E PRÁTICA DE ENSINO, 17., 2014, Fortaleza. Anais [...]. Fortaleza: Editora UECE, 2014.
2. BASSANI, P. B. S.; BEHAR, P. A.; HEIDRICH, R.O.; BITTENCOURT, A.; ORTIZ, E. Usabilidade e acessibilidade no desenvolvimento de interfaces para ambientes de educação à distância. Revista Renote, v. 8, n. 1, 2010.
3. BAUMAN, Z. Tempos líquidos. Rio de Janeiro: Jorge Zahar, 2007.
4. BONDÍA, J. L. Notas sobre a experiência e o saber de experiência. Revista Brasileira de Educação, n. 19, pp. 20-28, 2002.
5. BRETTELL, R. Museum Masterpieces: The Louvre. Virginia: The Great Courses, Chantilly, 2006.
6. CAMARGO, S. P. H.; BOSA, C. A. Competência social, inclusão escolar e autismo: revisão crítica da literatura. Psicologia & Sociedade, v. 21, n. 1, pp. 65-74, 2009.
7. CARDOSO, A. M. P. Modelo Para Avaliação da Literacia Digital e Informacional. Revista Brasileira de Informática na Educação, v. 22, n. 3, 2014.
8. CÓDIGO Da Vinci, O. Direção: Ron Howard. [S.l.]: Sony Pictures, 2006. 1 DVD (174 min).
9. GARDNER, J. The Louvre, the many lives of the world's most famous museum. New York: Grove Atlantic, 2020.
10. HEIDRICH, R. O.; SANTAROSA, L. C.; FRANCO, S. K. Inclusão escolar de aluno com paralisia cerebral, utilizando as tecnologias de informação e comunicação. Revista Iberoamericana De Educación, v. 60, n. 2, 2012
11. HENRIQUES, R. Museus Virtuais e Cibermuseus: a internet e os museus. Portugal, 2004.
12. MARTINS, S. W.; MARTINS, J. W.; ALVES, F. M. M. Literacia digital como Competência para a Cidadania Global. In: SANTOS, E. O.; PIMENTEL, M.; SAMPAIO, F. F. (Orgs.). Informática na Educação: autoria, linguagens, multiletramentos e inclusão. Porto Alegre: Sociedade Brasileira de Computação, 2019.
13. OLIVEIRA, M. M.; GIACOMAZZO, G. F. Educação e cidadania: perspectivas da literacia digital crítica. EccoS – Revista Científica, n. 43, 2017.
14. PARIS está no topo da lista dos destinos das novellas. GShow, 24 jul. 2015. Disponível em: http://gshow.globo.com/Destinos-de-Novelas/noticia/2015/07/paris-esta-no-topo-da-lista-dos-destinos-das-novelas.html.
15. PRODANOV, C. C.; FREITAS, E. C. Metodologia do Trabalho Científico: Métodos e Técnicas da Pesquisa e do Trabalho Acadêmico. Novo Hamburgo: Feevale, 2009.
16. SASSAKI, R. K. Inclusão: Construindo uma Sociedade para Todos. Rio de Janeiro: Editora WVA, 1997.
17. STEWART, T. S. Best practices of textile and clothing museum website development. Tese. Iowa State University: Ames, 2009.
18. STULL, E. UX Fundamentals for Non-UX Professionals: User Experience Principles for Managers, Writers, Designers, and Developers. Ohio: Apress, 2018.
19. YALE UNIVERSITY. Usability & Web Accessibility. Yale, [s.d.]. Disponível em: https://usability.yale.edu/web-accessibility/accessibility-yale. Acesso em: 13 jan. 2021.

This page is intentionally left blank

Global Journal of human-social science: G
Linguistics & Education
Volume 23 Issue 11 Version 1.0 Year 2023
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-460X & Print ISSN: 0975-587X

Unlocking Self-Teaching: Empowering Especially Dyslexic and Disadvantaged Readers

By Prof. Diane Montgomery

Abstract- A number of well-known historical figures taught themselves to read at 2 or 3 years old but some ordinary children were known to do it too and were called 'natural readers'. This research identified children who had taught themselves to read in two different reading teaching eras in England to find out how they had developed their initial sound to symbol awareness.

The methods these children used were investigated through a freeform writing task that showed their level of handwriting skill and knowledge of the language. The results were then shared with Reception year teachers in pilot studies. The results showed 30% uplift in reading skill school attainment tests (SATs). In the main study there were 8 teachers and their 175 pupils.

Spelling and handw riting coordination scales were developed to profile the skills of the group of students from their data on entry to school at 5 years old, after 6 months and again on entry to Year 2age 7 years. At each stage all the teachers were sent reports on how to help their individual children.

Keywords: self-teaching reading preschoolers dyslexics disadvantage freeform writing.

GJHSS-G Classification: LCC: LB1139.5.R4

UNLOCKINGSELFTEACHINGEMPOWERINGESPECIALLYDYSLEXICANDDISADVANTAGEDREADERS

Strictly as per the compliance and regulations of:

Unlocking Self-Teaching: Empowering Especially Dyslexic and Disadvantaged Readers

Prof. Diane Montgomery

Abstract- A number of well-known historical figures taught themselves to read at 2 or 3 years old but some ordinary children were known to do it too and were called 'natural readers'. This research identified children who had taught themselves to read in two different reading teaching eras in England to find out how they had developed their initial sound to symbol awareness.

The methods these children used were investigated through a freeform writing task that showed their level of handwriting skill and knowledge of the language. The results were then shared with Reception year teachers in pilot studies. The results showed 30% uplift in reading skill school attainment tests (SATs). In the main study there were 8 teachers and their 175 pupils.

Spelling and handwriting coordination scales were developed to profile the skills of the group of students from their data on entry to school at 5 years old, after 6 months and again on entry to Year 2age 7 years. At each stage all the teachers were sent reports on how to help their individual children.

The overall results showed higher scores of children from advantaged areas and girls over boys in all settings. School SATs at the end of Key Stage 1 (age 8 years) revealed 30% uplift in reading over the previous 3 years in the disadvantaged area and 10% in the advantaged area. Even the potential dyslexics, initially 4% of the group had begun to read.

It was concluded that teaching all pupils in Reception what self-teachers do can raise literacy standards for all but especially for disadvantaged and dyslexic students. The students began to read sooner, faster and better.

Keywords: self-teaching reading preschoolers dyslexics disadvantage freeform writing.

I. Introduction

Prodigies such as Francis Galton (1822-1911) had taught himself to read by the age of two and a half. Enid Blyton (1931), a former primary teacher found such 'natural readers' amongst ordinary learners. Much later Marie Clay (1973) showed that children's first impulse was to write not read and Carol Chomsky (1971) found that when children were asked to read on entry to school they said they could not because they had not yet been taught to. However when asked to write they settled down straight away to make 'marks on paper'. Clay (1986) later found that what children could write freeform they could also read.

Natural readers or self-teachers are those children in preschool who have somehow learned some basic skills enabling them to read simple storybooks because they have some phonological (knowledge of sounds in words) awareness and linked this to letter sounds. Although this knowledge will be incomplete on entry to school these features were found to be the best predictors of later reading achievement (Liberman, 1973; Bryant et al., 1985; Snowling, 2000 and many others since).

Phonological awareness is the ability to segment words into their separate phonemes, recognition of rhymes and alliteration, blending of phonemes and recognition of puns. Word awareness is the ability to recognise a word is part of speech and the ability to segment a sentence and phrases into words (Tunmer et al., 1985 p.295).

The theory of self-teaching of reading development was proposed by David Share (1995). His idea was, that once learners had established their knowledge of sound and symbol correspondences, successful identification (decoding) of new words in the course of the children's independent reading of text enabled them to recode them back into the spoken language form. However his studies overlooked the fact that self-teaching had been observed in preschoolers or early in the Reception year and somehow the students had already taught themselves some sound-symbol correspondences.

The assumption of many teachers appeared to be that most children would be able to write a little amount independently towards the end of the Reception year not before. In England children enter formal school in the year they become 5 years old so that there will be a range of ages usually from 4.9 to 5.5 years in classes from 20 to 25 in number. Several of teachers on in-service training courses were encouraged to ask their Reception class 5 year-old children to write their news or story freeform after 2 or 3 weeks in the class when they had settled in. The teachers were convinced that none of their children would be able to do this as they had not yet taught them to do so. However it was a surprise to them that several of the children were able to write readable messages even when they were from disadvantaged backgrounds and had had no preschool tuition. The teachers in this era were using the 'Look and Say' methods of teaching reading and no phonics at all until a vocabulary of at least 50 words was known, if then.

Some clues were available from the study of dyslexics' difficulty in acquiring phonological awareness

Author: Ph.D, C. Psychol. e-mail: dmont507@aol.com

but exploratory case studies showed that it could be overcome. This was if a particular long known strategy used by dyslexia pioneers in the US was used. In a pilot study school in a disadvantaged area of North West London its effect was tested and increased school results in the national literacy SATs by 30% (Montgomery, 1997a). The question was, could the strategy have the same effect in the Phonics First era of the 21st century or was it now unnecessary?

II. The Beginnings of Self-Teaching

What was noticeable in the scripts of the self-teaching infants was that their stories were mainly built of consonants with occasional vowels and word bits patched in, later termed orthographic mapping by Ehri (2006). Later some phonetic skeletons appeared then words. Figures 1a to 1c below show illustrations of self-teaching scripts in the pilot data collection in that era (Montgomery, 1997a). Kelly and Faye are a little more advanced than William.

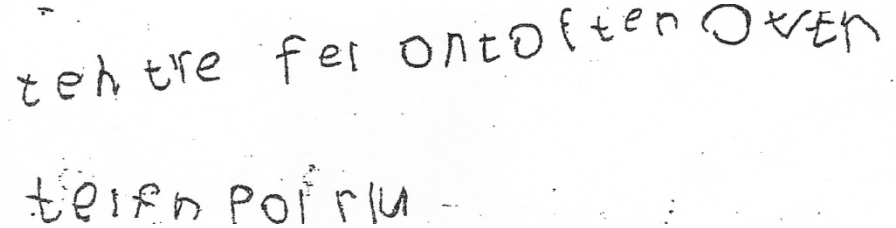


Figure 1a: William 5.2 years *'The tree fell on top of the other telephone pole wire.'*

William has phonological awareness, he is beginning to segment words into separate phonemes, he has some symbol-sound knowledge, uses initial consonants and some blends and is beginning to be word aware.

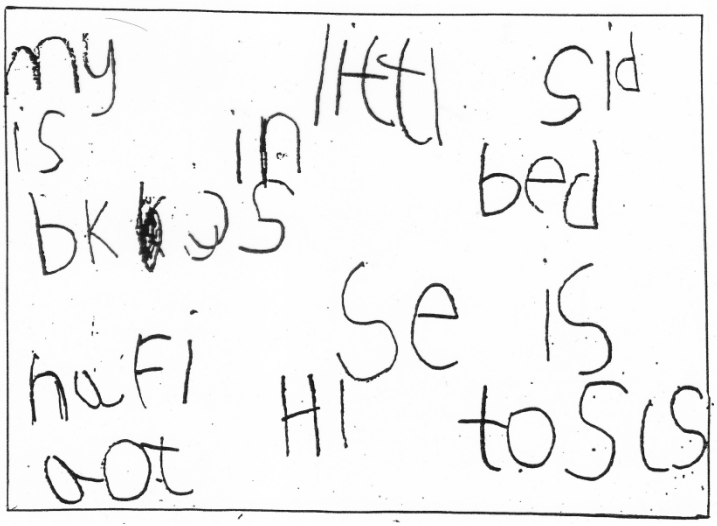


Figure 1b: Faye 5.1 years. She writes, *'My little sister is in bed because she is having her tonsils out'.*

Faye has phonological awareness and word awareness.

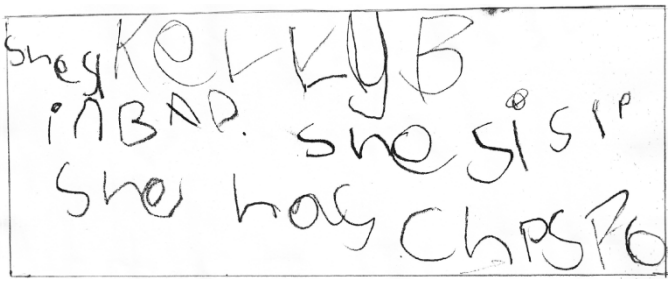


Figure 1c: Kelly B, 5.1 years *'She (her sister) is in bed. She is sick. She has chickenpox'.*

Kelly also has phonological and word awareness.

Figure 2 below for comparison shows a dyslexic boy's script in the same Look and Say era and he was already receiving individual reading support in Year 1.

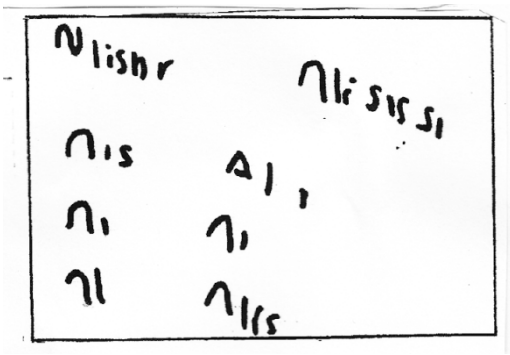


Figure 2: Dyslexic Steven's freeform writing. Age 6.5 years

We think he writes: *'I went to nanny's'*.

Steven uses some letters from his name but does not have phonological awareness. He makes a representation of the lines of word forms he sees in his reading books.

Case study Michael also aged 6.5 years was privately referred for his dyslexia and had an IQ of 147 on WISC-R but he had:

- *Failed to learn to read or write.*
- *Did not know any of the sounds or names of the letters.*
- *He could read some familiar common words and appeared to know most of his reading books off by heart.*
- *The school had given him extra phonics and some one-on-one tuition in phonological skills.*

Because his parents were informed about dyslexia and affluent they had him tested privately and this enabled him to be more rapidly referred to a specialist tuition centre. It seems incomprehensible with his high ability that he had not learnt a few sounds to use in reading and writing by normal teaching methods.

Michael was unable to play the I-Spy game with any success e.g. "I spy something beginning with 'd'." (door). He had no phonological awareness despite his high ability.

The question such examples pose is, how is it possible for two children of average ability such as Faye and Steven to perform so differently? How did Faye gain this knowledge and go on to build her own reading and writing skills? How did she 'crack the alphabetic code'? The requirements of the early acquisition task are to learn a few sounds and their symbols to support the reading task seems to be beyond Steven. In relation to Faye and William age difference did not seem to play a part.

The questions for this research were, how did some students develop phonological and word awareness then connect this with symbol knowledge without being taught? Why others do not or come to the knowledge very slowly even with explicit teaching? If they were all taught the special strategy would this raise the SATs levels in their schools?

III. Some Clues to Self-Teaching

How some children learned to write unaided and dyslexics could not, became clearer when the history of the medium, the alphabet, was investigated. According to Gelb (1963) the alphabet unlike other writing systems appears to have been invented only once. This was by the Phoenicians in about 700 BCE. Theirs was a consonantal Semitic language and it had 22 consonants. Roughly speaking so does the English alphabet at 21, eureka! Consonants each have different patterns of articulation and key contacts with lips, tongue and teeth whereas vowels only have open mouth and place cues, no contacts. The appearance of consonants in free writing is the first indicator that students have begun to make progress with reading. They will write 'b' to stand for 'bed' or 'wt' for 'went'. Similar results were found by Heald-Taylot (1984) when analysing children's scribble writing and in Gentry's studies (1981) discussed later also found consonants appeared first especially in the initial positions.

It was suddenly evident that a dyslexic could not have invented an alphabetic system and thus might have an articulation awareness problem. After a series of pilot studies to design a test to identify such a problem in the absence of any overt speech difficulties the hypothesis was put to the test and the results are shown in Table 1 below.

Table 1: To show mean scores on phoneme segmentation (PS) and articulation awareness (AA)

	Nos.	Reading Age	Spelling Age	PS (15)	Artic Aw (10)	IQ	Chron. Age
Controls	84	8.61	8.02	11.94	7.75	110.03	7.94
Dyslexi	114	7.95	7.62	10.27	4.31	110.43	12.90
Dyslexic Waiting list	30	6.71	6.00	4.13	5.87	112.67	8.97

Key: PS Phoneme Segmentation (sing minus 's' gives 'ing' etc.) a 15 items test of graded difficulty.
AA sound-symbol Articulation Awareness Test of 10 items
TRTS – Teaching Reading Through Spelling programme (Cowdery et al, 1983-87; Reprint 1994) an English variant of the original US Gillingham and Stillman (1956) program.

The AA test involved asking the dyslexics and controls to make the sound of an alphabetic letter and describe how and where the tongue, lips and teeth might be shaped or touching. The subjects could not see the experimenter's face. It was strange to observe individuals who had no idea where the tip of their tongue was touching when making e.g. the sound 'l', or if the mouth was open or shut.

Table 1 above shows that dyslexics do appear to have an AA problem in comparison with controls when both IQ and reading matched dyslexic groups were compared with them.

In the TRTS programme the first 5 initial sounds i l t p n s were taught by a procedure originally termed 'multisensory mouth training' (Montgomery, 1984). Figure 3 below shows the effect upon Steven after 6 x 20-minute sessions on these sounds.

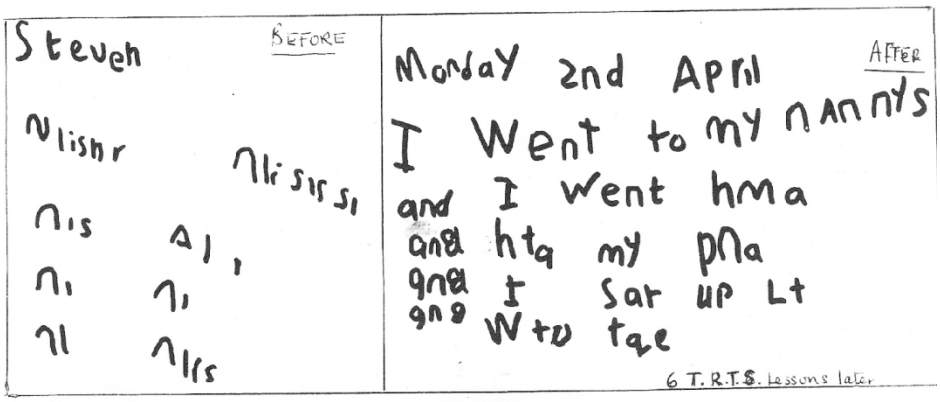


Figure 3: Steven. Before and then after 6 MAPT sessions

He writes Monday 2nd April: 'I went to my nanny's and I went home and had my dinner and I sat up late and watched TV'

He now has some phonological and word awareness and can patch in segments from his reading from storybooks and copywriting of 'news'.

Once the alphabetic code is broken the dyslexic spelling appears to follow the same pattern as that of normal subjects (Montgomery, 2007). Dyslexics failure to acquire alphabetic and phonic knowledge are the reasons why they are said to have a verbal processing deficit in the phonological area (Vellutino, 1979; Frederickson et al., 1997). It is the main theory of the cause of dyslexia even today. But it could perhaps be a result of a sound-symbol AA deficit or delay rather than the cause.

It would appear that self-teachers such as Faye, William, and Kelly were making the connection between the symbol, the sound and the feel of key letters even in the Look and Say era. It meant that when they wrote their news freeform the consonantal structure of words appeared first and from their reading and copywriting they patched in bits of familiar words.

Invented spelling was a significant area of investigation with kindergartners (Ferreiro, et al..1982; Read, 1986; Richgels, 1995). The results were termed children's 'creative spellings'. Creative spelling refers to the practice of having children invent their own spellings in their writing, using what they know about letters and sounds. In the early stages teachers were advised not correct them because the spelling allowed children to focus on developing their knowledge. This was how the development in both phoneme awareness and letter–sound knowledge were found to occur by Stahl et al, (1998). Studies also showed that invented spelling greatly improved phonemic awareness, phonics knowledge and other word recognition skills (Gentry, 1981; Read, 1986; Montgomery, 1997a). More recent support for this was found by Ouellette et al., (2008). They showed that orthographic learning also took place

incidentally during spelling when words to be learnt were presented visually. Conrad (2019) with 20 Canadian children in Grade 2 showed that orthographic learning could occur during independent spelling even when children generated their own spellings for pseudo-words.

IV. Stages in Normal Literacy Development

Gentry (1981) identified the steps that occurred in children's writing as follows:

1. *Pre-communicative Step:* In which the children made scribbles and marks to represent their messages or as they told a story (Figure 4a below)
2. *Pre-phonetic:* This was the creative or invented spelling stage where a single letter might represent a word or a group of letters e.g. 'w' or 'wt' for 'went' but it might not be the correct letter. (Figure 4b below)
3. *Phonetic Transcriptions:* Pupils began to patch in some correct visually recalled segments and some whole common words into consonantal structures and sentences. (Figure 4c below)
4. *Traditional Orthography:* In this final stage they arrived at more or less correct spellings or traditional orthography. (Figure 4d below).

Illustrations of Gentry's steps

The following examples were collected in the present research in the 'phonics first' era and illustrate the main steps. They gradually merge into one another as development proceeds.

Pre-communicative

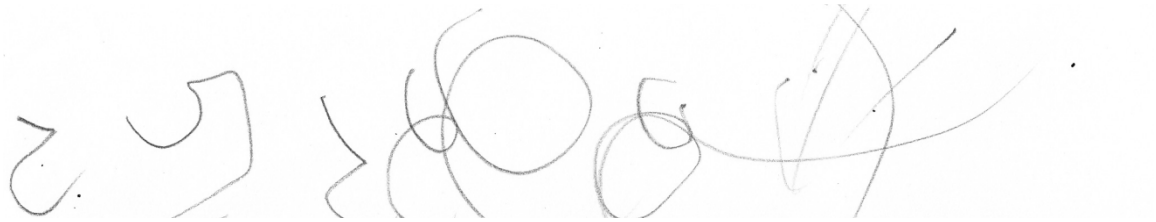


Figure 4 a: Izzie age 5.1 She writes *'I play with lots of toys'*

She is writing from right to left. And has no phonological awareness

Pre-phonetic

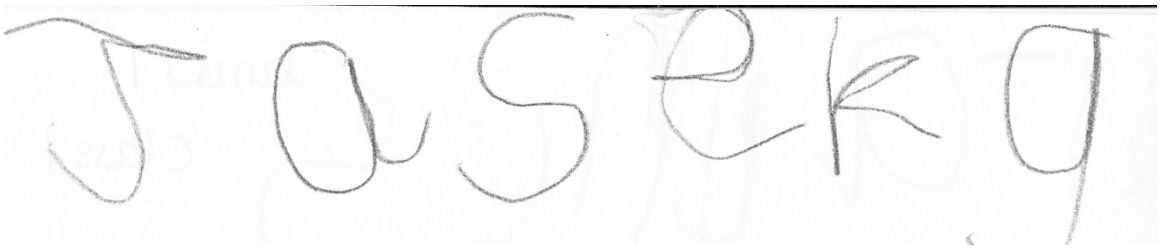


Figure 4 b: Jason age 5.1 He writes, *Jaserkg - 'The tractor goes on a truck'*

Jason is on the verge of phonological awareness but has not yet connected symbols to sounds or become word aware.

Early Phonetic

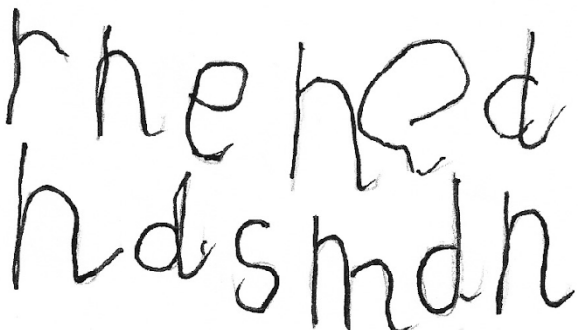


Figure 4 c: Harrison age 5.1 He writes, *'Red hen had some bread'*

He has broken the alphabetic code and become phonologically aware, and is not yet quite word aware

Traditional orthography

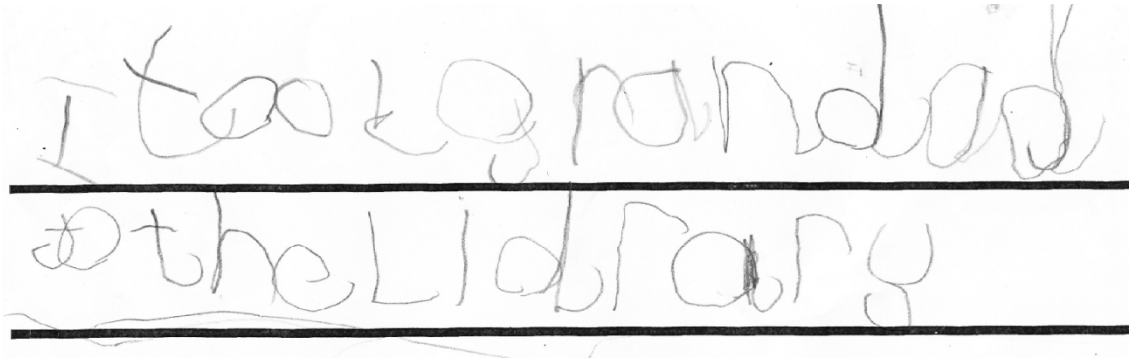


Figure 4 d: Richard age 5.1 He writes *'I took granddad to the library'*

Richard's script is very faint and with other cues indicates a mild handwriting coordination difficulty (See appendix 1). He is both phonologically and word aware.

Later, Ehri (2006) also identified 4 stages in the development of learning to read and spell in normal readers as follows: Pre-alphabetic stage; Partial alphabetic stage; Full alphabetic stage; Consolidated alphabetic stage.

V. The Writing Window and MAPT

In literacy and dyslexia research the main emphasis has been upon reading and reading skills. For example in special needs guidance the English Department for Education document (DES, 1997 p.15) states 'dyslexia or reading problems'. This presents difficulties because dyslexia is both a reading AND a spelling problem and it is the spelling that is less responsive to remediation. It can last into adulthood (Gillingham et al., 1956; Naidoo, 1972; Frith, 1985; Montgomery, 1997a; Hornsby, 2001) and many more since).

Reading is a recognition skill because all the words are already present on the page. The processes involved can only be inferred so that many interpretations are possible and new terms are invented to describe them. The ability to spell is a recall skill and much harder to do. It is usually only observable when we write something but early in Reception freeform writing is not generally required. This appears to be an important omission. This is because research by James et al.. (2012) uncovered an important contribution that handwriting makes to reading. Her preliterate five-year old children printed, typed, or traced letters and shapes, then were shown images of these stimuli while undergoing fMRI scanning. A previously documented 'reading circuit' was recruited during letter perception *only after handwriting* not after typing or tracing experiences. She found that this initial duplication process mattered a great deal. When children had drawn a letter freehand, they exhibited increased activity in three areas of the brain that are activated in adults when they read and write. By contrast children who typed or traced the letter or shape showed no such effects. It indicated that freeform writing must be a specific component in reading teaching in the acquisition phase in Reception.

Berninger's (2012) analysis was that handwriting differed from typing because it required executing sequential strokes to form a letter, keyboarding involves selecting a whole letter by touching a key. Brain scans illustrated that only sequential finger movements activated massive regions involved in thinking, language and working memory. This is the system for temporarily storing and managing information and makes teaching methods for handwriting much more significant than tracing and copying.

Another advantage of asking children to write freeform is because Rosencrans (1998, p. 9) found that,

> *'The errors children made when they wrote were neither random nor thoughtless, if examined diagnostically they revealed the systematic application of the child's level of understanding'.*

Bearing these findings in mind the following diagnostic investigation of freeform writing was undertaken, this time in the era of the current 'phonics first' (Rose, 2006) regime.

It is important to note at this point that the educational climate had radically changed. It was no longer relaxed and informal. Teachers in England now reported being bombarded by documents from the Department for Education to order educational changes such as 'phonics first'. They must follow each of the hundreds of annual DfE directives on teaching content, and method, write and continually update school policies. School inspections by Ofsted (Office for Standards in Education) could fail them if they did not follow the guidance and they would lose place in the League Tables or could even be closed down. Students were being tested too much and although this was

scaled back it was never sufficient. Access to schools now proved more difficult and there were data protection policies in place and children and staff behind locked gates. Research grants could only be obtained if the researcher was part of an approved research conglomerate so the research to be reported had no grant and no official status and had to rely on goodwill and the interest of teachers in the topic. Questioning the current orthodoxy and guidnce was not popular especially at the DfE.

VI. An Investigation of Self-Teaching

The best predictors of later reading achievement are phonological awareness, alphabetic knowledge and letter sound knowledge (Liberman, 1973; Bryant et al., 1985; Snowling, 2000; Hietland et al., 2017). These are all easily revealed in freeform writing as already shown in Figures 1 to 4 above.

In the present research articulatory knowledge would be built into the teaching of five initial sounds to prime the children's awareness. The majority of schools already begin with 's a t p i n' (Cochrane et al., 2022). The results would be shared in the reports on each child's work and sent to their teachers, the technique was MAPT – Multisensory Articulatory Phonogram Training. An example of this can be found in Appendix Two. Many teachers would already be using some multisensory training by associating a sound with making its symbol in multisensory training but this omits the key component the articulatory dimension, the feel of the letter sounds.

In this hostile environment details of registers of full names and ages were not made available nor was access allowed to meet and observe any teacher working. By comparison in the previous Look and Say era 1250 full lessons had been observed in a project on appraisal of teaching (Montgomery, 2002). In this new project the strategy was to list the first names from the scripts and assign the age of 5.1 on entry to the study and 5.7 on exit. In England children start formal schooling in the September of the year in which they become 5 years old so the age range would be from 4.9 to 5.5 years. Actual age in months did not appear to be the most important variable in the pilot studies instead social background and preschool experience seemed to play a more important role.

The background data from annual national school inspections by the English Office for Standards in Education (Ofsted) for 11/12 year-old students in Year 6 and about to enter secondary schools showed that boys perform less well than girls in both reading and especially in writing. Students in disadvantaged areas also performed poorly and those in the north of England and the Midlands less well than in the South east of the country. In terms of ethnicity poor white boys were in the lowest performing group. Subsequently coastal area schools (Ofsted 2011) were also found to be performing very poorly.

Sutton Trust research by Jerrim (2013) showed that by the end of the first year of formal schooling (the Reception year) children from disadvantaged areas were 11.5 months behind advantaged peers in reading and never did catch up. This was an important issue to be addressed and the freeform writing project might help give some answers and some improvement for the disadvantaged learners.

The children's difficulties appeared to the researcher to be caused in large measure by the literacy teaching methods promoted in the Colleges and the Governmental documents defining them (Montgomery, 2023). This was based on the 1250 lessons previously observed (Montgomery, 2002) and the feedback from the 3 distance learning MA programmes (1993-2010) written and tutored by the researcher (MA SEN, MA SpLD, MA Gifted Education) at Middlesex University, London.. Adding to this data were the results of a handwriting investigation project with 60 cases from the Potential Plus UK (formerly the NAGC) 2016-2018 and random cases since through the LDRP website.

To try to improve the situation the P.E.A.R.L Project (Promoting and Enhancing Achievement in Reception Learners) was devised and presented at conferences and Continuing Professional Development courses on literacy, underachievement and dyslexia. The delegates seemed very interested and carried off dozens of the glossy Project folders with the details of data they needed to collect and share and the teaching methods to use. There were few returns and so a new tactic was developed.

a) Method

It was determined to try to trace the origins of underachievement in reading and writing and intervene. Secondary school C, in a small coastal town had taken part in a 20-minute essay writing survey with new entrants to the school's year 7 (Montgomery, 2008). This project was to find the effects of the implementation of the National Literacy Strategy-NLS (DfEE, 1998) for primary schools and particularly for students in the Reception Year.

Now, 15 primary schools in School C's area (feeder schools) that sent most of their students to School C were invited to join a slimmed down version of the P.E.A.R.L. Project. The promise was that it would cost nothing in terms of teacher time or money.

Of the 15, two schools refused and three opted to join the study, the rest did not reply. The sample was thus a volunteer one. At a regional conference on overcoming underachievement (UAch) the revised project was described and more schools were invited to join. One literacy coordinator from a private school in the Midlands agreed to participate. In all there were 8 teachers and 175 students now in the study.

The communications were initially by letter to the head teacher and the deputy head setting out the purpose, and a description of the 2 tasks in September and a repeat of 1 task in the following March. There was a confidentiality contract. The promise was that the tasks would be part of the everyday teaching routine and would take no extra time and involve no extra costs. Each teacher would receive a written report on the skills level of each of their students in November and May with suggestions for intervention and the school would be sent summary reports of the overall project at each stage.

The instructions for the teachers were:

1. Before the end of the first month in Reception each child (N=175) to be asked to copy write their 'news' or a story. This is a standard task in most classrooms.
2. A few days later to ask the children to write a story or their news freeform (no help must be given).
3. At the end of 6 months (March) the children were to be asked again to write their news or a story freeform.

By these means the entry-level or baseline skills for handwriting (1) and spelling (2) could be recorded and then again after 6 months to see what progress had been made.

In addition each teacher was sent a *Spelling Development Handbook of 100 mini lessons.* (Montgomery, 1997b) originally designed for the NW London pilot project school. The mini-lessons covered MAPT with i t p n s , synthetic phonics and problem solving approaches to spelling (see example in Appendix 2).

Each school was also offered a free in-service workshop on the project and the methods. None accepted.

The written instructions for the 8 teachers explained that for the copy writing they should just follow the procedure the school normally used. For the free writing task students should only offered encouragement to make some suitable marks on paper and write their names if possible. The actual 'message' should then be asked of the child and the Teaching Assistant (TA) or teacher was asked to write it down on the named paper for the researcher.

Copy writing of news in most English Reception classrooms is as follows. The child tells the teacher or TA what their news is (the message). The adult then writes it down in a form s/he thinks is suitable for the child to copy. (From this data a number of teaching strategies can be detected e.g. lines of no lines, letter formation methods.

In Figure 5 below Sahana is from an advantaged background. This is written in her first few weeks in the private school.

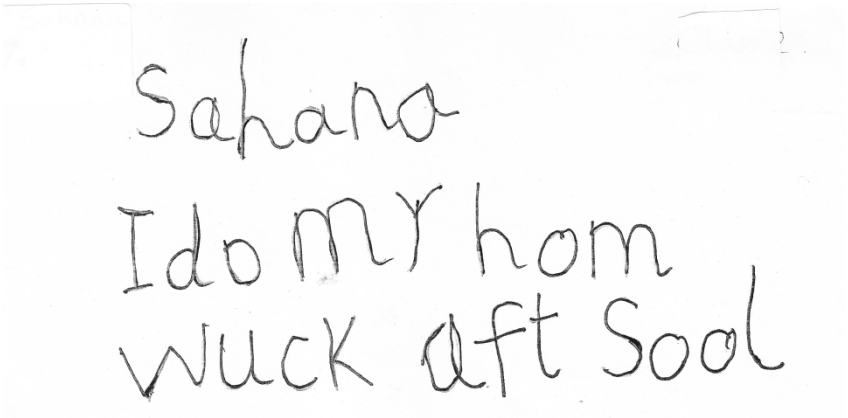


Figure 5: Sahana age 5.1 writes *'I do my homework after school'*

She had already developed phonological and word awareness and some sound and symbol knowledge. From the content it is likely that she has had some reading experiences in preschool at home and possibly attended a nursery or playgroup.

b) Development of the spelling and handwriting assessment scales

Because there were no baseline assessment scales for spelling and handwriting for school beginners they had to be invented for the study. This procedure was:

One large class's set of scripts (N=25) was ranked in piles of increasing spelling skill and descriptors were assigned. The process was then repeated with all the scripts including those of the original class and an assessment scale was drawn up. A similar procedure was adopted for the copywriting scripts to examine handwriting motor skills coordination. A rank of 5 was found to be the critical borderline at which the freeform scripts showed that the child had recognised and used some sounds and their symbols, these were termed 'phones'. The appearance of phones indicated that the pupil had 'cracked the alphabetic

code' and was on the way to becoming literate. This was best seen in their attempts to make words using initial sounds and *'skeletal phonics'* such as 'wt' for 'went', 'ws' for 'was' 'goig' for 'going' and 'se' for 'she' etc.'. *Phonetics* would be represented by e.g. 'kwiz' for 'quiz', 'buk' for 'book' 'apl' 'nite', 'marster', 'berd', 'butiful.

(Inter-observer reliability coefficient for this spelling scale was +0.93).

The spelling assessment scale demonstrated what children can achieve if given the opportunity to show it:

Ranks for free-form spelling used in the analysis of freeform scripts:

10. Mainly correct spelling, legible, systematic word spaces.
9. More correct spelling, skeletal phonics, meaning clear.
8. Some correct words, phonics, phonetics, meaning clear
7. Skeletal phonics, phonetics, some words, meaning apparent
6. Pre-phonetics, phones, phonetic skeletons, some meaning.
5. Word forms, letters, phone(s) evident (The critical achievement)
4. Letters, possible phones
3. Some letter shapes and letters, in a line
2. Marks, mandalas roundels, occasional letters, possibly in lines
1. Scribble, marks in some order
0. Random marks

c) The Year 2 follow-up study

Although two thirds of the students had progressed in literacy skills by the second freeform writing test in March a measure was needed that would show some comparison with the expected national norms. These would become available at the end of Year 2 (8 year olds) in the national SATs. An analysis of research on the relationship between developing phonological awareness and reading skills (Christensen, 1995) found that previous researches showed very significant effects when undertaken by the researchers and much lower effects, about 10 to 12% if any at all when teachers undertook them. Thus in the present study an improvement overall might be expected if any at all in the order of 10%.

She also found at a least one-year delay in all the studies between the intervention and the lifting of reading achievement was necessary. Allowing a pause of one year in the present study was therefore needed to allow for consolidation, more scrutiny of the reports by the different teachers in Year 1 and some potential self-teaching by the children. It seemed a fair test.

The three State schools in the study were invited once again to participate in the research. This time they were requested to ask all their students after two to three weeks in the Year 2 classes to write a story unaided and as fast as possible about a favourite topic for exactly 10 minutes. The topics might be a favourite holiday, pet, sport, or friend etc. They should guess at spellings they were unsure of and go on to a second topic if there was any time left over.

In addition, to encourage participation £25 would be paid into the School Fund for each set of class results (funded by the researcher). The schools are always in need of money!

As a result there were 93 matched scripts from the original study of 112. School B opted out of this task (new head teacher).

Disadvantage in the study was determined by the percentage of free school meals (FSM ref. now the Pupil Premium) compared to the national rate of 23%. FSM x2 indicates they had twice the national average qualifying for the Pupil Premium.

d) Results

Table 2: Shows spelling ranks on entry to the 8 Reception classes

Schools	Boys	Girls	N
A + B Social housing	2.38	3.03	56 FSM x2.0
C Owner occupier	4.52	6.81	55 FSM x0.5
D Private school	3.34	4.06	64 FSM zero
Spelling means	3.51	4.41	175
Motor skills means	4.21	5.67	175

The scores in table 2 above show that poorer environments (low socio-economic status indicated by the numbers having FSMs) give rise to lower spelling and handwriting scores on entry to school. In reading we already know thst they will be 11.5 months behind at the end of Reception year and remain so throughout education (Jerrim, 2013, 2021, Sutton Trust Research). Some will slip even further behind creating the UK's 'long tail of underachievement'. In table 2 above it shows that the same effect is likely to be found for writing because the poorer children start at a disadvantage. It is noticeable that girls in all 4 schools

significantly outperformed the boys in both spelling and handwriting just as they do at 11 years in the National SATs. Poorer children were less skilled on entry than richer ones. The 'Matthew effect' – to those that have shall be given (Stanovich, 1986).

e) Scoring 'first marks on paper' for the copy writing

10. Letters all the same moderate size on a line
9. With clear ascenders and descenders
8. Spaces between words
7. With appropriate capitals
6. Bodies sit on the line, real or imaginary
5. Letters formed in a single fluid movement
4. Distinct letter shapes
3. Drawn letters
2. Mandelas and letter-like shapes in a line
1. Some letter-type marks in a line across the paper
0. Random scribble and faint marks

The same ranking procedure was used for copy writing motor skills as for the spelling scale. In the motor scale the points up to 5 were assigned in ascending order of skill. After this the next 5 points can be awarded in any order of appearance as 5+1+1+1 etc. It was argued that handwriting skill appropriately encouraged and trained could improve the situation for all children enabling them to learn to write more easily and fluently. This would enhance reading and spelling development and lift later achievement (Montgomery, 2020). Unfortunately handwriting is currently given little attention in the education and training of teachers in England (Medwell et al. 2008; DfE 2021). A Handwriting Interest Group from the 1980s has evolved into the National Handwriting Association to try to provide help for children and their teachers, however they still follow the 'custom and practice' line of the DfE that needs to be questioned.

f) Spelling profile of the student group on entry to Reception

On entry 27% of the original 175 children had 'cracked the alphabetic code, scored at least 5 points. Overall there were 25 girls and 23 boys in this group. The variation between the schools was significant and is shown in Table 3 below. There are lower scores for those from disadvantaged areas.

Table 3: Shows the profile of high spelling success - score 8 to 10 on entry

	Scored 8-10		FSM	
School A	1 girl	0 boys	2.5	
School B	3 girls	1 boy	1.5	
School C	12 girls	16 boys	0.5	(Included Richard Fig. 4d above)
School D	9 girls	6 boys	zero	(Included Sahana Fig. 5 above)
	25	23		

Table 3 above shows that 11% of the cohort was reading and writing well scoring 8-10 on entry to the schools. The ratio of girls to boys who had already started to read and write was 4 to 1 in the disadvantage areas and reflected the socioeconomic levels. School B was in a more mixed area than school A. School C was in an advantaged area and it looks likely that in preschool some reading teaching had also been undertaken especially for the boys. School D, the private school should be expected to have more readers and writers than schools A and B and possibly school C but literacy standards in the midlands and the north of England tend to be lower than in the south according to national inspection reports. The private school ID eft the project after F1.

Table 4: Shows the numbers of children in the 5 State school Reception classes and their spelling scores on entry (F1) and after 6 months in school (F2), N=112

Class	Nos	Free Writing 1	Free Writing 2	Nos 'at risk
A1	18	2.33	7.12	3 + 2
A2	18	2.44	4.30	11
B 1	21	3.24	6.13	4 + 2
C 1	28	6.11	6.76	0
C 2	27	5.37	6.10	5
Totals	112	4.29	5.32	23 Borderline scores of 4 4 'dyslexics' with scores 2-3

Free writing F1 = October sample: Free writing F2 = March)

National data suggest that roughly 30 % could be expected to become poor readers and 10% dyslexic. Here 4% not 10% were definitely at risk and indicates the feedback in the reports could be having some effect.

For ease of teacher diagnosis the spelling scale was later exemplified as 4 levels. The strategy is to identify the statement that most typifies the writing example and award that rank and then work to move the child on to the next level e.g. The 4 levels were:

1. Random marks and scribbles
2. Letter-like shapes and marks
3. Some letter sounds 'phones' and word bits
4. Decipherable 'stories'

g) The spelling profile of the cohort after 6 months (F2)

- After 2 terms in Reception 37 out of 112 – 33% had spelling scores between 8-10,
- 25 (22%) children had moved into the competent range scored 5-7.
- 35 (31%) of children in the 3 schools had not cracked the code after 6 months.
- Of these, 23 boys and 12 girls were still not using 'phones', a ratio of 2 to 1.
- 16 pupils had both dyslexic and dysgraphic type difficulties 14.6%; 13 boys 11.6% and 3 girls 3% a ratio of roughly 4 to 1.

Table 5: Shows the copy handwriting profile on entry and dysgraphia at 6 months

Scores	0-4	5-7	8-10	N	6 mos. later
School A1	15 (6F 9M)	2 (1F 1M)	2 (2F 0M)	18	8M 1F
A2	12 (5F 7M)	1 (1F 0M)	5 (5F 0M)	18	8M 2F
School B1	12 (6F 6M)	6 (3F 3M)	2 (2F 0M)	21	6M 0F
	39 (17F 20M)	9(5F 4M)	9 (9F 0M)	57	20M 3F
School C1	13 (5F 8M)	9 (3F 6M)	5 (4F 1M)	26	5M 2F
C2	14 (4F 10M)	9 (3F 6M)	5 (5F 0M)	28	4M 1F
School D1	5 (3F 2M)	10 (6F 4M)	6 (4F 2M)	21	-------
D2	4 (1F 3M)	12 (4F 8M)	6 (4F 2M)	22	
D3	7 (2F 5M)	9 (5F 4M)	5 (5F 0M)	21	
	43 (31F 28M)	49 (21F 28M)	27 (22F 5M)	811	9M 3F

Table 5 above shows that on entry to school more boys (M) had generally more copy writing developmental difficulties than the girls (F) in each score level on the assessment scale in all the schools. After 6 months many of these difficulties especially among the girls had been resolved. This still left a number of students potentially with dysgraphic difficulties 20M to 3 F (N=57) in the disadvantaged area schools as judged by the level of Free School meals. The ratio in the advantaged area school was 9M to 3F (N=54). This indicates that poorer children are born and brought up with more coordination difficulties than richer children. They are also slower to overcome them and this is seen in the data after 6 months especially with regard to the boys.(20 M and 9 M). The girls scores are the same (3F and 3F). The possible implication and origins of these differences will be discussed later.

In school A 14 boys and 3 girls showed coordination difficulties. In school B there were 6 boys and no girls. This made a ratio of 20 to 3 boys to girls, nearly 7 to 1 in the disadvantaged areas.

In school C there were 9 boys and 3 girls a ratio of 3 to 1, in an advantaged area.

In school D, the private school there were 11 boys and 6 girls this makes a ratio of roughly 2 to1 (on entry only).

In total 35 out of 112 children in the State schools had dysgraphic symptoms 31.25% or nearly a third of the cohort. The same number was found in their coastal town secondary school for the Year 7 group (N=251) in a previous survey already noted.

The national average for handwriting difficulties was found by Barnett et al., (1997) to be 12%. They used DASH-Developmental Assessment of Handwriting. It is an individually administered assessment that takes 45 minutes with each student from the ages of 7. It appears likely that their survey was based on data from more advantaged areas than the present one and it did not use the same coordination criteria.

In the present study there were more students with writing coordination difficulties in the State schools and particularly in the most disadvantaged areas. Higher levels of skill were found in the advantaged area and the private sector school.

Handwriting speed: Lyth (2004) using the MIDYIS (Middle Years Information System) additional test data on 10,000 pupils also found differences between the State and Private school sectors on a handwriting speed test. Students take this assessment in Year 8 (age 13) and go on to take Key Stage 3 exams in Year 9 and GCSEs in Year 11. The students were asked to copy the single same sentence repeatedly for two minutes *'I can write clearly and quickly all day long'.*

They were told their writing must be clear and legible and each sentence must fit exactly onto one line. The result was that the mean number of lines completed was 5.8 with a mean of 112 characters per minute. At 9 words per line this gives an average speed of 26 words per minute. This is a faster rate than that obtained by Allcock (2001) in Table 6 below but the tasks were radically different. It is easier to write the same sentence rapidly for 2 minutes than words from memory in a 20-minute essay as in Allcock's study. The essays or story composition had to be written as fast as possible without any help. She concluded that those with a speed 25% slower than the mean needed extra writing speed training support and those who were 40% slower needed a scribe for all examinations and tests.

Table 6: Mean writing speeds across age ranges, Allcock, (2001, N=2071)

	Year 7 12	Year 8 13	Year 9 14	Year 10 15	Year 11 16 years
	13.9 wpm.	14.6	15.7	16.3	16.3
25% slower	10.4	10.9	11.8	12.2	12.7
40% slower	8.3	8.8	9.4	9.9	10.1

The table shows that the mean speed was roughly one word per minute more that the student's chronological age just as Britton found in 1970. However Roaf (1998) found that a writing speed of 15 words per minute was needed to cope with the secondary school curriculum. Those who did not achieve this were failing in all curriculum subjects, including maths and had low self-esteem.

Lyth's MIDYIS (2004) study had also found that the speed varied from students writing 1 line to 13 lines and showed a normal distribution. Boys' writing speed (5.4 lines) was slower overall than girls' (5.7 lines) and showed more variability. State school students' writing was slower than that of Independent (private) school students (6.0 Boys; 6.3 Girls). He concluded that generally average ability (achievement in school subjects) rises with handwriting speed but this trend broke down at the extremes. Those with the slowest speeds had ability higher than expected or predicted from the speed and at the upper end very high writing speed was associated with lower ability than expected.

The problem of handwriting difficulties was found by Silverman (2004) to have important implications in gifted education because she found it was the major cause of underachievement worldwide.

Slow handwriting speed was also found to lower compositional quality in the later ages in primary and secondary schools (Connelly et al., 2001; Berninger 2008) and poorer quality composition lowered achievement. Slow handwriting was also found to constrain the overall performance of undergraduate students in examination essays (Connelly and Dockrell et al, 2005). Thus the significance of mechanical skills in school achievement must not be underestimated. But teachers do need a short form test that can be incorporated into their everyday teaching to inform them of student's speed writing needs. For this a 10-minute speed writing test such as given by Roaf (1998) in her secondary school study was used with some in Years 2-5 as background information to the present study and the results showed a similar pattern, girls outperformed boys and poorer students performed more poorly than the rest and thus became disadvantaged in all the school's handwritten assessments.

Table 7: Writing speed on entry to Years 2 to 5 in the 10-minute speed test

School	Year	Numbers	w.p.m.	Age expect
Mixed SES	Year 2	152	7.32	7+ 1
Mixed SES	Year 3	21	7.50	8 +1
Middle SES	Year 4	84	9.95	9+1
Mixed SES	Year 5	137	9.20	10+1
Mixed SES	Year 6	15	12.5	11+1

Table 8: Breakdown by Social Economic Status in some Year 5 samples

	N	w.p.m.	predicted
Middle SES W (Advantaged area, small town)	59	10.66	10+ 1
Middle SES X (Church school, rural)	85	10.04	10+ 1
Mixed SES Y (Rural area school)	60	8.05	10+1
Disadv SES Z (Costal area. disadvantaged estate)	52	7.81	10+1
	N= 393	Mean 9.15	11

SES stands for Socio economic status

At age 10 years the mean speed should be 11+ w.p.m. Once again the same pattern is detectable. Overall none of the students are writing fast enough at this stage to reach 15 w.p.m. by Year 7.

h) Coordination difficulties in writing

Developmental Coordination Disorders (DCD) was the term used to refer to the dyspraxias or types of clumsiness found in children by the American Psychiatric Association (APA DSM-IV, 1994). The incidence appears to be between 5 and 6 % with 1 to 2% of them severe cases.

DCD is a difficulty that affects the motor co-ordination skills, such as in locomotion, daily living and learning.

In DCD there is usually an absence of any overt physical cause and it is found across the ability range. The origins of DCD may arise in a number of ways:

- Developmentally immature brain
- Inherited or family difficulty
- Anoxia at birth so that small areas of the brain are damaged. Early training can help other areas to take over these functions whilst the brain is plastic.
- Premature or difficult births
- Deprivation problems, e.g. in spina-bifida children are confined by lack of mobility in the early years and so lack integrative experience in the perceptuo-motor areas.

DCD is frequently associated with attentional and social skills difficulties and the APA DSM-V (2000) p. 56) states".

> 'The essential feature of Developmental Coordination Disorder (DCD) is a marked impairment in the development of motor coordination ..... that significantly interferes with academic achievement or the activities of daily living'

Types of DCD

i) Gross motor skills difficulties in running, walking, swimming etc. They used to be termed 'clumsy' children (Gubbay, 1975). They take much longer than others to learn a new skill such as riding a bicycle.

ii) Fine motor skills such as difficulties in drawing, handwriting, sewing, buttoning, bead threading etc. Handwriting disorders/difficulties are also termed 'dysgraphia'.

iii) Visuo-spatial skills difficulties as in ball skills, completing jigsaws, knot-tying, orientation and spatial difficulties.

iv) Specific difficulties such as in motor speech difficulties (dysarthria).

The gross motor difficulties become apparent during games and P.E. and the child will not be picked by others to join teams and they will often be bullied. As they walk down the corridors those with gross coordination difficulties will be seen to veer to one side and the gait may be unsteady and the balance poor. Most students with gross motor difficulties will have fine motor problems as well but the reverse is not the case. Writing difficulties such as dysgraphia may be the only area of difficulty. The term disorder is generally only used for the 1-2% at the more extreme end of the continuum. The ratio of boys to girls with DCD in the UK is estimated to be 3 to 1 (Kirby, 2020).

Handwriting difficulties are highly significant in causing educational underachievement. But they are the poor relation or Cinderella of the special needs provision in schools and the wider community.

What is not often realised is that handwriting difficulties are the biggest contributor to under-achievement in schools amongst the gifted worldwide (Silverman, 2004, Berninger 2015) and across the range of ability (Montgomery, 2020). In this research the ratio of boys to girls with handwriting DCD on entry to Reception classes was 4 to 1.

- Boys' handwriting skills overall were 22% poorer than girls' on entry to the Reception classes.
- The pupils in the disadvantaged area schools were 35% poorer at handwriting than those in the advantaged areas.

It is unhelpful to leave children to copy write if they have not been taught to make the letter forms in one continuous movement. They need to be taught this with a few letters before being left to copy. Tracing over

letters is also not found to be an effective or efficient way of establishing handwriting skill. Even so most teachers in England use tracing and copying as part of early literacy teaching. But a child's attention devoted periodically to looking at the visual image while writing keeps the image of the letterform in short term memory, thus preventing it from moving into long-term memory (Bara et al. 2011). Independent handwriting practice in tracing or copying even perfectly formed letters, impaired the development of fluency by preventing the conscious visual memory of the letter from flowing unconsciously to the muscle memory (Overvelde et al. 2011).

An example of this problem is illustrated by Harry in Figure 6 below.

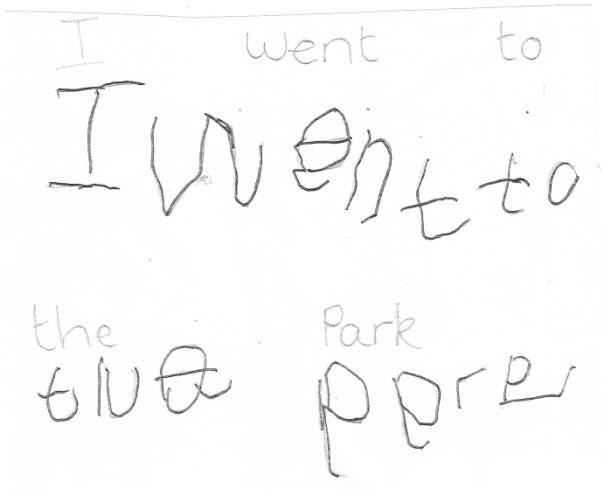


Figure 6: Harry's copywriting. Note also the poor example he has to copy and the inappropriate capital P.

It would be better if Harry's teacher had first taught him to draw letters in the air with a single fluid arm movement - monoline form, then gradually reduce the movement in size to make it fit on paper then his performance would be improved. When he can make the shape on paper with his eyes shut he will have learned it and the TA can check. There are other important things to learn about in writing such as pencil grip and paper position.

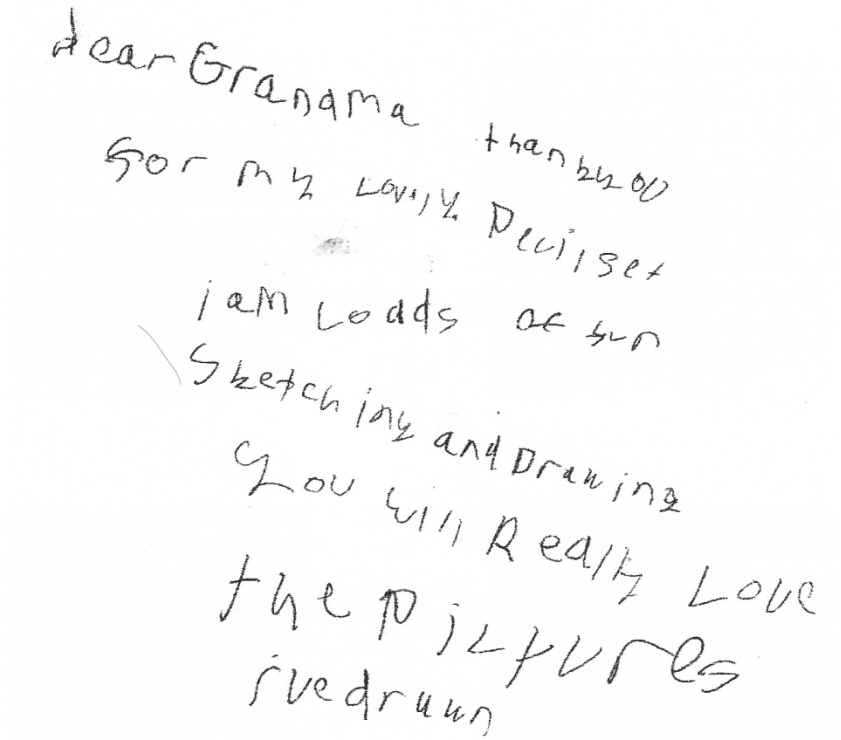


Figure 7a: An example of handwriting by Ben age 7.6y. a pupil with mild dysgraphia

He writes *'Dear grandma thank you for my lovely pecil set I am loads of fun sketching and Drawing you will Really Love the pictures ive drawn'* His spelling is good. The writing speed is 2.6 words per minute.

Ben's script shows most of the coordination difficulties shown in the assessment scale below with the exceptions that it was not too faint and there were no ridges or holes in the paper. In this he was probably helped by the fluidity of the biro, see Figure 7b below.

i) Assessing coordination difficulties in dysgraphia

Coordination difficulties may become confused with legibility issues because poor coordination can result in malformed letters and problems in positioning letters and words on the lines. There are however distinct indicators of coordination difficulties that observation of children writing and the scripts produced can reveal. A list of 13 indicators is shown below. Usually at least half of them will be present in mild dysgraphia.

- Script drags in from the margin
- Rivers of space run down the page
- The script is very faint
- The script is spiky
- Words wave about above the lines and drag below them
- There is a variation in pressure seen in darker and lighter letters and words
- Pressure may be so strong ridges appear on the reverse of the paper
- Script may be very large and faint
- The writer may complain of pain after a few minutes
- Particular lower case letters may look like capitals e.g. S, K, W, F because they are more difficult to form precisely and small
- T s appear as capitals because the cross bar cannot be added precisely enough down the upright
- Other letters such as U and M and N may randomly be formed extra large as the coordination control is lost
- There may be holes in and ink blots on the paper.

Many of these difficulties can be overcome by teaching for fluency, and attention to penhold, special penhold moulds for grip improvement, and paper position (Montgomery, 2017a, 2020)

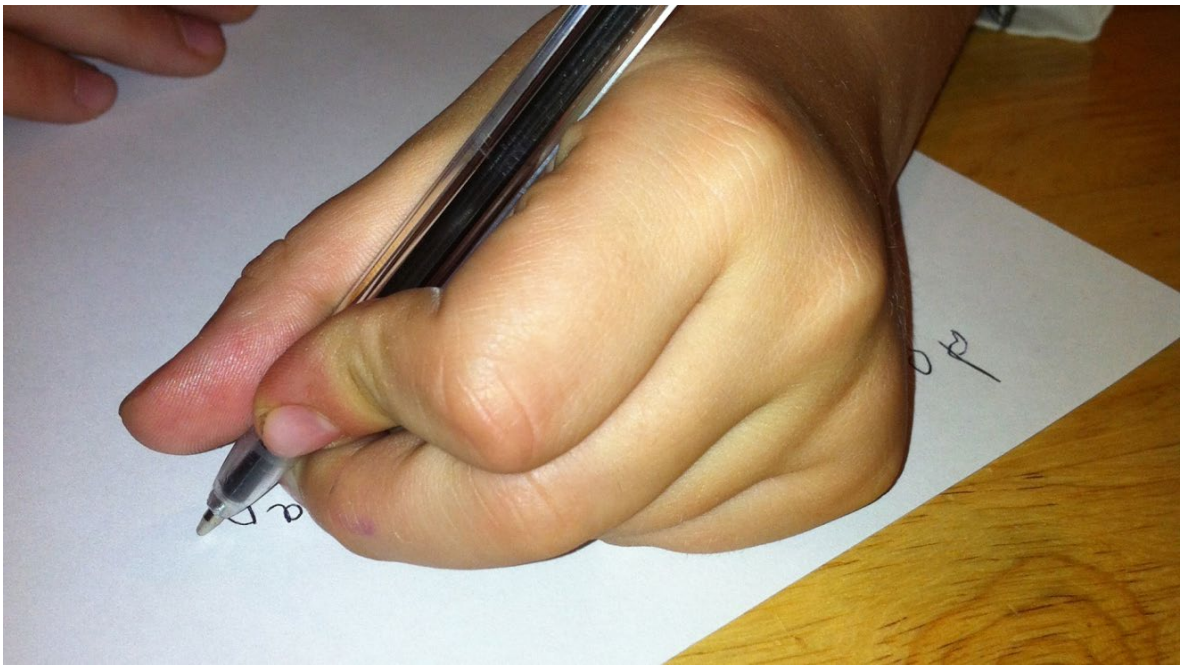


Figure 7b: Shows Ben's penhold and paper position

The photograph shows he is left-handed, has a weak grip shown in reddening/darkness of thumb and finger ends as he tries to tighten his hold to guide the pen. The tripod grip is incomplete. Joints are not fully formed so has 'bendy' fingers. The paper position should follow the line of his forearm then the writing will go horizontally across the page. He will tire easily and develop pain in his hand and arm if the writing goes on for more than a few minutes. He will need to take rests and this will slow his writing speed. This will lower his school achievements. Using a laptop will improve legibility but may not improve his speed but should always be tried as an alternative.

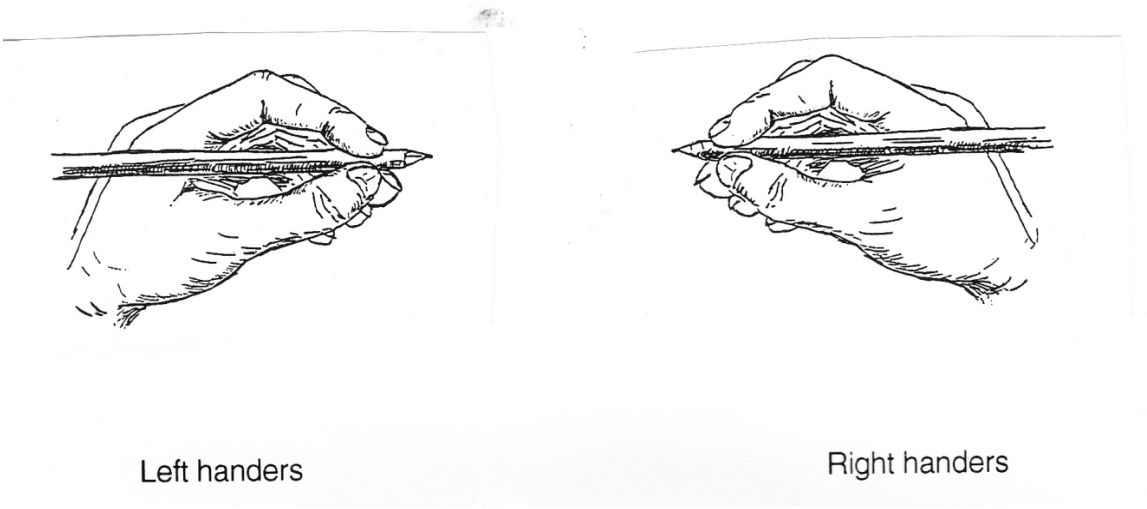


Figure 8: Shows the target flexible tripod grip

Left handers should hold the pencil a little further from the point so they can see the script. The rigid tripod grip has 2 fingers on top of the pen. There are other less frequent variants.

Figure 9: Amy age 5.5 y. right-handed and thumb over grip

Amy's thumb-over grip indicates a weak finger grasp. The paper position is incorrect it should follow the line of her right forearm. The pencil hold is far too near the point this means she has to lean over to see the writing under her hand.

The inventory of handwriting coordination difficulties/dysgraphia shown above was based upon clinical diagnosis of many hundreds of cases referred to the Learning Difficulties Research Project www.ldrp.org.uk over several decades and on cases reported by teachers in the MA programmes. The indicators were also checked in previous handwriting projects and surveys. Intervention techniques were developed during this period and tested with parents' and school's participation.

However the early signs of dysgraphia can begin to be seen in this Reception survey scripts and they will become more evident during each year. Reception and Year 1 is the period when intervention can be most successful because they are developing writing skill. Once a handwriting skill is established it is more difficult to change or improve it.

j) The student group results in Year 2

The 10-minute free writing test (N=93 matches) given at the beginning of Year 2 revealed only 1 dyslexic (Hisham) and he also had by then cracked the code and was writing some semi-phonetic readable text, see Figure 7 below. This is an incidence of dyslexia of nearly 1% whereas nationally it is 10% (BDA 2023). In their feeder coastal area secondary school it had been 16.8% (Montgomery, 2008). Hisham gained spelling rank zero on F1 and rank 2 on F2.

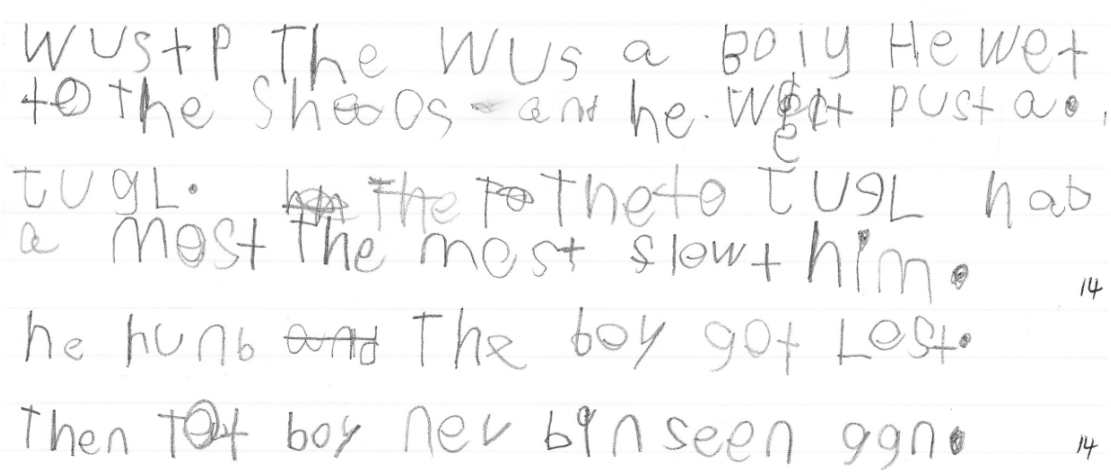


Figure 10: Hisham's script on entry to year 2 in 2016, age 7 years

In Year 2: He writes: *'wusrp*. (Once upon a time) *The wus a Boiy* (There was a boy) *He wet to the* sheoos (He went to the shops) *and He wet pust a. Tugl* (He went past a tugl). *The to tugL hab a most* (The tugl had a monster) *The most (monster) flew + him.* (The monster flew at him). *he runb* (he run) *and* the boy got lost. *then tat boy nev bin seen agn'* (Then that boy never been seen again)

He came from the Reception class where they made the least progress and it was evident that the teacher was not making use of the case notes. S/he was the one who appeared to favour correct spelling rather than promoting beginners' creative spellings and this was likely to have delayed the onset of his experimentation until Year 1 with a new teacher.

On entry to Year 2 the overall speed totals for the two schools A and C were:

- Mean writing speed 7.11 words per minute. School A in the disadvantaged category wrote 2 w.p.m slower than school C in the advantaged area.
- Mean spelling error rate was 12.85 per script.
- The predictive capacity of the spelling scale (F1 + F2) used in the Reception year was tested against spelling error results in Year 2 and was significant at ($p < 0.01$).

The mean writing speed in the large coastal area secondary school (N=251) was 12.4 words per minute at age 12. However Roaf (1998) as already noted had found that in her school pupils who did not write at a speed of 15 w.p.m. were failing in all areas of the curriculum. The slower writing speed in the coastal area schools accounts for some of the lower achievements in SATs and GCSEs for such groups found in national data.

Key Stage 1 SATS at the end of Year 2 in Table 7 below showed that there had been an uplift of 30% in the literacy results over the previous three years' in the disadvantaged areas and 10% uplift in the advantaged area results. This confirmed an earlier (1997-8) pilot study in a North West London school in special measures and for which a *Spelling Development Handbook* (1997b) detailing MAPT had been written. This as noted had been distributed to each of the Reception year teachers in the present study.

Table 7: Key Stage 1 SATs results at Level 2 and above for the project schools.

	2011	2012	2013	2014			
					Reading	Writing	Maths
School A	35%	47%	48%	78%	85%	80%	66%
School B	37%	37%	50%	66%	76%	78%	46%
School C	77%	87%	88%	96%	95%	98%	96%

It was hoped to follow the student group to the secondary school and give them the Year 7 10-minute speedwriting test but this was not possible because of incoming Covid-19 restrictions.

VII. Discussion

The study showed that self-teaching could be promoted after children's entry to their Reception classes especially when MAPT a multisensory articulatory phonogram strategy was used. Sounds and

their alphabetic symbols are abstract perceptual units and the only concrete clue to them is only the articulatory feel. If students are encouraged to speak clearly there is more chance that they will notice the 'feel' and make the connections to the sound and become phoneme aware. This may be made explicit by the teacher or by implicit brain-work in the students. Playing the I-Spy game can cue them to notice the initial sounds and become not only phoneme aware but also word aware. In the study those who benefitted most were pupils from disadvantaged circumstances and mild dyslexics because they had the chance to catch up on what they had missed. They had not had so many opportunities in pre-school to make these discoveries because of lack of shared reading and conversation. This is because it is known that children in advantaged situation are more exposed to extended opportunities for dialogue in their homes. They speak more and develop a larger vocabulary. Parents read more to them and share reading with them so they can see the words they are reading. Learning nursery rhymes and songs and then seeing them in print also helps them read. The eye and brain are processing and connecting much more behind the scenes than we might realise. There are far cleverer pattern processers in the human brain than in AI machines. Children are born scientific investigators and continually test hypotheses (Kelly, 1955; Gopnick, 2021). They can learn languages without being taught just by listening and practising their language skills. It is therefore important to give them opportunities to apply these skills to reading. First by finding out what they know by the freeform writing task and then teaching them some useful letters and how to build words with them from the beginning. Word building should take place as soon as two letter sounds have been learned such as 'i' and 't' to make 'it and 'tit'. In addition students need to learn to become 'Spelling Detectives' rather than develop 'learned helplessness' as many do. An example of a problem-solving approach to learning more about sounds can be found in a mini-lesson for more accomplished spellers than beginners in Appendix 2.

In addition to some self-teaching promoted by MAPT five further factors are important.

1. *The theory of optimal instruction* propounded by Solity et al. (2009, p. 9):

> 'There is an optimal amount of information to teach that will lead to maximum generalisation'

In applying this to reading teaching Solity (2018) found that only a handful of letters and their sounds needed to be explicitly taught for the children to grasp the alphabetic principle and go on to acquire more sounds and their symbols and read words. This is what we can achieve starting with the word-builders i l t p n s. Only after these have been learned move on to the next handful starting with a A f etc. Teach the short and long sounds (names) only of the vowels at this stage.

Solity asserted that too much phonics was damaging to beginning readers. In the present research 5 starter symbols, the 'word builders' were recommended to teach simple syllable structures with a short vowel sound (CVC, CVCC, CCVC, CCVCC). The letters in 'satnip' (Cochrane et al., 2022) are also a handful of letters recommended for use in many phonics reading schemes such as Jolly Phonics (Lloyd, 1993).

With i t p n s 25 words and many nonsense words can be built e.g. pit tip nip and sip., then initial blends, spit, snip, stip. The short and long sound of vowels can be introduced with i and I to deal with word 'I' and 'pint'. Once the students have grasped the basic principle letters 'a' and 'f' etc. can be introduced and by self-teaching more will appear in their story scripts and can be used for decoding during reading. It is a case of 'less is more' and making sure all the students have grasped the basic idea. This is how the principle of optimal instruction works. Solity found that the phonic drills and regular weekly or even daily spelling test was a feature that students did not enjoy and put many off reading and had little effect on those who were poor spellers.

The DfE guidance and usual practice is to try to get the students to memorise 6 letter sounds and their symbols per week by multisensory copy writing and tracing drills and by being heard to read. They do not usually encourage problem solving and discussion about words and rhymes. This is a process of metalinguistic awareness meaning thinking about the language as it is being learned.

2. *The importance of freeform handwriting* for beginners.

The fMRI research of James et al. (2012) cited earlier had shown that reading areas of the brain were activated during handwriting but not during tracing or copying. In the MAPT approach it is the freeform handwriting that activates the reading areas of the brain and helps connect sounds and words with their symbols.

Ray et al. (2021) in Australia used a Write Start–K, strategy that emphasised the recall, retrieval, reproduction, and repetition (their 4*R*s model) of grapheme–phoneme relations in a handwriting project. It took place in 2 schools with 4 Reception classes (N=77 children) comparing standard teaching copy writing and tracing with the project method. The results indicated that a handwriting intervention, incorporating repeated practice in recalling and reproducing letterforms from memory had a statistically significant impact on early reading skills. MAPT is also a system that promotes grapheme-phoneme relations with the advantage that it is more than the rote reproduction and repetition that is generally relied upon. The Pyramid

model of the linkages being made during MAPT are shown in Figure 12 to Figure 11 below.

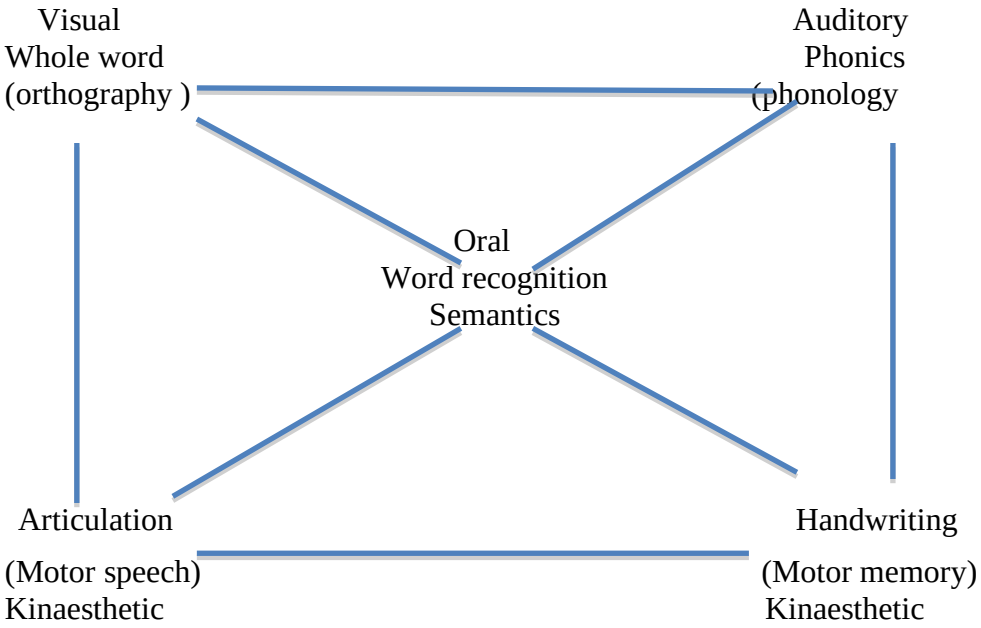


Figure 11: The Pyramid Model of MAPT – VAKKs

The importance of the articulatory training was identified by the early dyslexia pioneers. This was particularly by Fernald and Keller (1921) and Gillingham and Stillman (1940, 1956). Gillingham (1963) introduced the technique into England at training courses in London. It is not surprising therefore that potential dyslexics in the Reception and Year 1 classes in this research appeared to benefit and finally learned to read and write.

3. *Teaching cursive (joining) from the outset.* This is still rejected by most English primary head teachers (DfE, 2021). They prefer staff to teach for legibility over fluency, e.g. print first then joining. At the beginning of the 20th century all children in the UK learned the 'Civil Service hand' an ovoid joined form of writing. It was a fluent style suitable for clerks to use because in those days they had so much recording of business to do before typewriters were introduced.

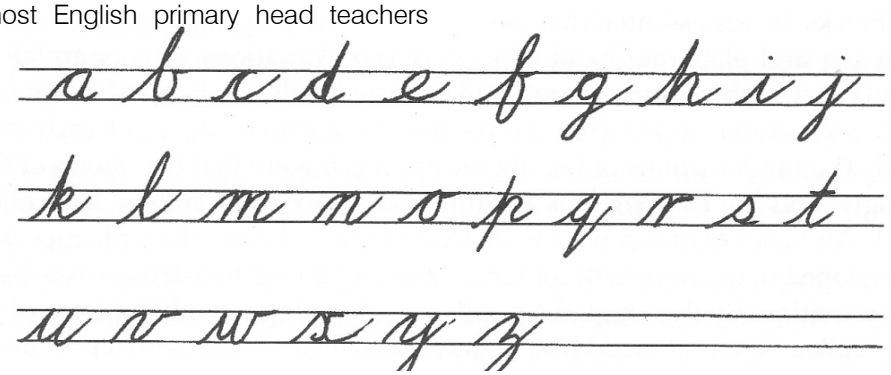


Figure 12: An example of Civil Service hand.

The letters have lead-in and lead-out lines. The modern versions omit the loops above the bodies of the letters but keep those below the line to assist joining.

The early dyslexia pioneers in the US also all taught cursive from the outset (Gillingham et al., 1940, 1956; Monroe 1932; Fernald et al.. 1921), using the VAAKs - Visual Aural Articulatory Kinaesthetic model – MAPT above. This was because they had found it important in overcoming the dyslexia and because many of their dyslexics also had coordination difficulties that cursive helped to deal with. Some of this influence moved into mainstream teaching of letterforms when an anglicised version of the G & S programme was imported into England for example by Hickey (1977). But the articulatory element was lost.

In this same period the print forms used in the regular classroom changed from 'Ball and Stick' to monoline (made by one continuous line) to make them

easier for children to write. In addition many Reception teachers adopted multisensory phonogram training (MPT) to connect the letters and sounds in children's minds as remedial teachers did but MPT omitted the articulatory dimension.

DfE (2014) guidance however advised that joining should begin to develop by the time children were 8 years old! In the 'look and say' era some schools had banned teaching cursive until the age of 8 or until the child could write neatly! This means that children have to learn one set of motor programmes (print) and then another (cursive), the transition is not easy for many. Such switching is inefficient and handicaps all the children with weak motor skills and especially those with dysgraphia (Wedell, 1973; Montgomery, 2017a). Ergonomically we should start as we mean to go on and this means 'joining' for beginners on entry to school as in the 1920s. Children in Francophone countries are taught to do this quite successfully (Thomas, 1998).

In Primary School C 2 classes on entry to Year 5 (10 year-olds) undertook the 10-minute speed writing test and their data was analysed to find if they had all successfully switched from print to cursive. It revealed the following results shown in Table 8 below:

Table 8: Shows the profile of scripts produced by National Guidelines (DfE 2014)

	Class 1		Class 2		Totals
• Print	3	3F 0M	16	8F 8M	19
• Casual joining	20	15F 5F	12	4F 8M	32
• Cursive	3	3F 0M	1	1F 0M	1

The data show that of the 52 children 51 in Table 8 above have not achieved an efficient cursive style. It demonstrates that switching is not an effective strategy in producing a fluent joined style. It also means students will be delayed in achieving a speed of 15 words per minute needed in Year 7 to meet the curriculum needs (Roaf, 1998). Table 9 shows the writing speed of School C compared with some other Year 5.

Table 9: Shows Year 5 writing speed in words per minute in 3 different schools

SES	Numbers	w.p.m.	coord diffs
School X Church School	N=85	10.04	7.0%
School Y Rural School	N=60	8.05	20.83%
School C Coastal School	N=52	7.81	36.54%
Mean	N= 197	8.84	

Table 9 data above show that advantage breeds advantage – the 'Matthew Effect'.

It demonstrates that in schools there is a hierarchy of handwriting skill that needs to be addressed to promote all pupils' achievement. Church schools usually recruit from a more advantaged group in their areas. Once gain the coastal area school that in its own area is an advantaged one appears to be disadvantaged among this group.

4. *Both phonics and Look and Say methods need to be used from the outset but separately at first.* Phonics helps word attack for decoding in reading whilst meaning emphasis methods develop comprehension skills *both* are needed by beginning readers. So it is wise to give both strategies time to have their effects and not prefer one over the other. Just at first they need to be taught in separate lessons as was originally done before the Look and Say era in the New Beacon Readers scheme (Fassett, 1929). In purely Look and Say regimes the percentage of dyslexics was found to be higher than in phonics ones (Chall, 1985, Read, 1986).

Children who learn to speak clearly have more chance to note the initial sounds and in the syllables in words and it can help them become self-teachers. The encouragement of shared reading in class and at home is particularly important because. Look and Say methods promote comprehension and reading development.

5. *The medium, English orthography.* A final contribution to this tale is the hidden role that English orthography plays in the task of learning to read or not. English is considered a difficult language to learn as well as read especially for beginners. It is considered 'opaque' whereas most others especially European languages are 'regular' that is, they have one sound for each symbol. German for example has 31sounds and 31 symbols (26 letters, 3 umlauts and 'sc' and 'sch'). As a result such languages are much easier and quicker to

learn and tend to lead to fewer dyslexics and a gender ratio of 3:2 (Rutter et al., 2004; Barbiero, 2020).

In contrast English orthography is only 40% phonically regular, it has 44 sounds and only 26 symbols. It is also based on morphology (meaningful units) and etymology, its history in other languages such as Latin, Greek, Norse, Anglo-Saxon, and Norman French. It is thus harder to learn and teach.

However when the English alphabet was regularised to make 44 symbols reflect its 44 phonemes most children learned to read fluently and easily by the age of 6 years. The system was the initial teaching alphabet, i.t.a. (Pitman, 1961) but parents and those who did not teach it found it looked too strange to accept even though transfer to traditional orthography was also easy for reading and a bit slower for spelling (Downing, 1965; Southgate, 1970).

Sue Lloyd (1993) developed 'Jolly Phonics' with its 42 regular symbols based on her experience with i.t.a. It has proved highly successful and its use was endorsed by the DfE following the publication the Rose Report (2006) on 'Phonics First'. Jolly Phonics begins with s a t n i p.

However it too needs an update and this involves teaching the following:

- 6 short vowel sounds a e i o u and oo as in book,
- 6 long vowel sounds as in the vowel names A E I O U and oo as in school,
- 21 consonants, b c d f g h j k l m n p q r s t v w x y z
- 6 consonant digraphs ch, ph, sh, wh, th, and th (voiced)
- 2 diphthongs ou as in 'round' the 'ahoo' sound and 'oi' as in oil
- semi-vowel y as in 'my' and 'mystery' and 'story'
- qu- and –ng

This gives a total of 44 standard symbols that are so easy to use to regularise the system. In addition 5 simple rules can facilitate further progress and tidy up several thousand spellings (Montgomery, 2023).

VIII. Conclusion

What this research has shown is that understanding how self-teaching infants learn to read gives clues to how dyslexia and disadvantage can be overcome using teaching methods that follow their example. Teachers need no special training to do this. They can just include the extra articulatory element in their normal methods that will help dyslexics and disadvantaged children.

The freeform writing task shows a teacher what the students already know about the language and how much progress they are making each week with the current teaching methods. It shows them what an individual student or a group need to be taught next. No expensive diagnostic tests, programs or extra working time is needed. All that is required is the regular teacher's teaching skill.

Background and historical studies have left a legacy that can inform and improve current practice when the 'best bits' are taken and used again as has been tried here.

The research has shown how important handwriting is in the early stages of learning to read because it activates the reading areas of the brain to prepare them for making the necessary linkages. Using the fast running cursive style from the beginning will help counteract later underachievement by improving handwriting speed.

By regularising the English alphabet to make its 44 sounds connect with 44 symbols the process of learning to read is simplified and speeded up. This has special benefits for all students but particularly those from disadvantaged environments and dyslexics.

Teachers can begin by trying just one technique. To make a start try the freeform writing of news nothing is easier.

In Appendix One below is a example of a typical MAPT lesson. The students soon get used to the strategy and can do more themselves. By the end of the first 5 or 6 mini lessons with i l t p n s the process speeds up and can be integrated into other typical reading activities.

Appendix One: MAPT Lesson 3. Teach letter sound and feel of (t) and clue word

- Ask who can remember the first letter 'i' and its sound.
- Several children write the letter 'i' on the board and give its short sound (i).
- Now write a large lower case letter 't' on a line on the board with lead in and lead out lines and also 'ghost in' line.
- Ask the pupils to copy the letter in the air with index and middle fingers together as pointers.
- Teacher talks them through the movement 'from the line-up-down- round and then add the cross bar'.
- Ask if anyone knows the sound the letter makes (t). ?
- All say the sound (t) several times.
- Now they look at their partner's face as he or she makes the sound (t)
- Get them to try to describe the look and feel of (t). What is the tongue doing this time?
- Put fingers in front of mouth and say (t) 'What do you feel?' The puff.
- Pupils copy the 't' movements in air rhythmically and say the sound as they do so
- They now 'draw' a letter 't' on the desk with fingers and say the sound
- Demonstrate letter 't' for left-handers if necessary.
- Several pupils come up and draw a letter 't' on the board with the original covered and talk themselves round it. Then they check theirs with the original. Discuss.
- Teacher writes a line of three joined letter 't's on the board.
- Pupils do the same in their books saying the sound.

- Ask if anyone knows a word that begins with the sound-tin, table, tie.
- Ask if anyone has a name that begins with (t).
- Play the I-Spy game (having ensured there are a few t objects around)
- Pupils draw their clue word for (t).

'Our first word': Put 'i' and 't' close together on a line on the board and ask pupils to try to say the word. (i-t). Demonstrate.

- Pupils write a line of the word 'it' in their books and as they do so say the word each time.
- Write the word 'tit'. Can they say the word (ignore body part!) show pictures of the bird family blue tit, coal tit, great tit. long-tailed tit. Encourage any seen locally to be discussed and to report where.

Appendix Two: A mini problem-solving lesson on the letter 'c'

This strategy can be used once students have developed some fluency in reading. It shows a cognitive method for overcoming difficulties with spelling not just by repeated practice – rote learning. For example:

"The letter named 'c' does not have a sound of its own so it has to borrow from its friends. Its friends are 's' its soft sound and 'k' is its hard sound. The problem you have so solve is when does 'c' use 's' and when does 'c' use 'k' in words? How do you think we can find out?"

1. If they want to say some words the teacher will need to write them down. All work for teacher and nothing much from most of the students!
2. Instead ask the students to study the pages in their storybooks and write down any that *begin* with 'c' in their workbooks. After a while, ask them to read out some of the words they have found. This time the teacher can write them on the board/whiteboard. They can add others as they think of them and also look around the room for other possible words. About 10 words can be a useful start.

The task now is for students to study the words *with a partner* to try to discover when 'c' uses the sound 's' and when it uses he sound 'k' at the beginning of a word.

3. A class of older students can be given a sheet of a local newspaper or magazine to find words beginning with 'c' and use a yellow marker pen to highlight them then with a partner discuss when 's' or 'k' are used.
4. After time to consider the problem they will probably need a clue and some extra examples:

cat city clean car cycle came cup cut clear curl ceremony circle cyst cease
corn cross clip come clay certain cream clock create credit close

The clue is: "Collect all the 'ca' words into a group, then the 'ce' words and so on for each vowel sound, then for consonants 'cl' and 'cr'. Now see if you can work out the rule."

('c' followed by 'a' 'o' 'u' and when blended with 'cl' and 'cr' makes its hard 'k' sound. When 'c' is followed by 'e' 'i' and 'y' it makes its soft sound 's').

References Références Referencias

1. Allcock, P. (2001) 'The importance of handwriting skills in Key Stage 3 and GCSE Examinations of more able pupils' *Educating Able Children* 5 (1) 23-5.
2. Alston, J. 1993 *Assessing and Promoting Writing Skills* Stafford NASEN.
3. Bara, F., and Gentaz, E. (2011) 'Haptics in teaching handwriting: The role of perceptual and visuo-motor skills'. *Human Movement Science* 30, 745-759.
4. Barbiero, C. (2021) "Developmental dyslexia in Spain". *Dyslexia* Croatia: Intech Open Books.
5. Berninger, V.W. (2008) 'Writing problems in developmental dyslexia. Under-recognised and under-treated'. *Journal of school Psychology* 46 1-21
6. Blyton, E.M. (ed) (1931) *Modern Teaching: Infant School Section Vol 1. Reading and writing, arithmetic organisation and curriculum* London: George Newnes Ltd. The Home Library Book Company.
7. Britton, J. (1970) *Language and Learning* Harmondsworth: Penguin
8. Bryant, P.E. and Bradley, L. (1985) *Children's Reading Difficulties* Oxford: Blackwell.
9. Chall, J. (1985) *Stages in Reading Development* New York: McGraw-Hill.
10. Chomsky, C. (1971) 'Write first, read later' *Childhood Education* 47 (6) 296-99,
11. Christensen, C.A. and Jones, D. (2002) 'Handwriting an underestimated skill in the development of written language' Handwriting Today 2 56-89.
12. Christensen, C.A. (1995) 'An evaluation of the systemic meatalinguistic awareness program' *Journal of Cognitive Education* 4 2&3 5-18.
13. Clarke, L.K. (1989) 'Encouraging invented spelling in first graders' writing: Effects on learning to spell and read'. *Research in the Teaching of English,* 22 281–309.
14. Clay, M. M. (1975) *What Did I Write? The beginnings of reading development.* London: Heinemann.
15. Clay, M.M. (1986) *Reading. The patterning of complex behaviour 2nd edition* London: Heinemann Education.
16. Cochrane, G. and Brooks, G. (2022) 'Where should phonics teaching start? 'satpin' and its origins, rivals and implications' British Educational Research Journal 00 1-18. https://doi.org/10.1002/berj.3822
17. Connelly, V. and Hurst, G. (2001) 'The influence of handwriting fluency on writing quality in later

primary and early secondary education' *Handwriting Today* 2 50-7.
18. Connelly, V., Dockrell, J. and Barnett, A. (2005) 'The slow handwriting of undergraduates constrains the overall performance in exam essays'. *Educational Technology* 25 (1) 99-109.
19. Conrad, N. (2019) 'Orthographic learning of children's invented spellings of pseudo-words' Symposium paper 26th Annual Meeting, Society for the Scientific Study of Reading. August.
20. Cowdery, L.L., Montgomery, D., Morse, P. and Prince-Bruce, M. (1983-7) *Teaching Reading Through Spelling Series 1 -7* Kingston-upon-Thames LDRP; 1994 Reprint Wrexham: TRTS Publishing.
21. DfE (1997) *Excellence for All Children* London: DfE.
22. DfEE (1998) The *National Literacy Strategy: Framework for Teaching* London: DfEE.
23. DfEE (2001) *Developing Early Writing Skills* London: DfEE.
24. DfE (2014) *National Curriculum, Key Stages 1 and 2. Framework for English and Mathematics* London: DfE.
25. DfE (2021) *The Reading Framework*. *Teaching the foundations of literacy* London: DfE.
26. Downing, J. (1964) *The initial teaching alphabet 2nd edition* London: Cassell.
27. Ehri, L.C. (2006) 'Alphabetics instruction helps children learn to read'. In R.M. Joshi and P.G. Aaron (eds.) *Handbook of Orthography and Literacy* Mahwah, NJ: Lawrence Erlbaum Associates. 649-678.
28. Fassett, J.H. (1929) *The New Beacon Readers. Teachers' Manual (revised edition)* London: Ginn.
29. Fernald, G.M. and Keller, H. (1921) "The effect of kinaesthetic factors in the development of word recognition in the case of non-readers" *The Journal of Educational Research 4* (5) 355-377.
30. Ferreiro, E. and Teberosky, A. (1982) *Literacy Before Schooling* Portsmouth, NH: Heinemann Educational Books Ltd.
31. Frederickson, N. Frith, U. and Reason, R. (1997) *Phonological Assessment Battery* London: Pearson.
32. Galton, F. (1869). *Hereditary Genius. An inquiry into its law and consequences*. London: Macmillan.
33. Gelb, I.J. (1963) *A Study of Writing 2nd edition* London: University of Chicago Press.
34. Gentry, J. R. (1981) "Learning to spell developmentally" *The Reading Teacher* 34 (4) 378-81.
35. Gillingham, A.M., and Stillman, B.U. (1940 & 1956) *Remedial Training for Children with Specific Disability in Reading, Spelling and Penmanship* Bath: Basic Books.
36. Gopnick, A. (2021) 'Children are more exploratory than adults in an approach-avoidance task' cited in *The Psychologist* DOI: 10.1016/j.cognition.2021.104940
37. Gubbay, S.S. (1975) *The Clumsy Child.* London: WB Saunders.
38. Heald-Taylor, B.G. (1984) 'Scribble in first grade writing' *The Reading Teache* 44 Oct 4-8.
39. Hickey, K. (1977) *Dyslexia: A Language Training Course for Teachers and Learners* Staines, Surrey: Dyslexia Institute (2nd Edition 1991 by J. Augur and S. Briggs (eds) London: Whurr.
40. Hjetland, H., Brinchmann, E., Scherer, R. and Melby-Lervåg, M. (2017) *Preschool Predictors of Later Reading Comprehension Ability: A Systematic Review*. Oslo: Campbell Collaboration.
41. HMI (2001) *The Teaching of Writing in Primary Schools: Could Do Better.* London: DfES.
42. Hornsby, B. (2001) *Dyslexics I Have Known* London: Whurr.
43. James, K. and Engelhardt, L. (2012) 'The effects of handwriting experience on functional brain development' *Neuroscience and Education* 1 (1) 32-42.
44. Jerrim, J. (2013 & 2020) *The Reading Gap* The Sutton Trust: Millbank, London.
45. Kelly, G.A. (1955) *The Psychology of Personal Constructs 2 Volumes* New York: Norton.
46. Kirby, A. (2020) Conference Programme information National Handwriting Association.
47. Liberman, I.Y. (1973) 'Segmentation of the spoken word and reading acquisition' *Bulletin of the Orton Society* 23 365-77.
48. Lloyd, S. (1993) *Jolly Phonics* Chigwell, Essex: Jolly Learning.
49. Lyth, A. (2004) "Handwriting speed: An aid to communication success?" *Handwriting Today* 3 30-35.
50. Medwell, J. and Wray, D. (2007) "Handwriting. What do we know and what do we need to know?" *Literacy* 43 (1) 10-15.
51. Monroe, M. (1932) *Children Who Cannot Read* Chicago Ill: University of Chicago Press.
52. Montgomery, D. (1977) 'Teaching pre-reading through training in pattern recognition' *The Reading Teacher* 30 (6) 216-25.
53. Montgomery, D. (ed.) (1984) "Multisensory mouth training" in TRTS – *Teaching Reading Through Spelling. Series* (1983-1987 LDRP Kingston-on-Thames 91-100 Reprint 1994 Wrexham; TRTS Publishing.
54. Montgomery, D. (1997a) *Spelling: Remedial Strategies* London: Cassell.
55. Montgomery, D. (1997b) *Developmental Spelling Handbook* Maldon: LDRP.
56. Montgomery, D. (2002) *Helping Teachers Improve through Classroom Observation* London: David Fulton.

57. Montgomery, D. (2007) *Spelling, Handwriting and Dyslexia* London: Routledge.
58. Montgomery, D. (2008) "Cohort analysis of writing after 2, 4, and 7 years of the National Literacy Strategy *Support for Learning* 22 (1) 3-11.
59. Montgomery, D. (2017) *Dyslexia-friendly Approaches to Reading, Spelling and Handwriting* London: Routledge.
60. Montgomery, D. (2020) *Tackling Disadvantage and Underachievement in Schools. A Practical Guide for Teachers* London: Routledge.
61. Montgomery, D. (2023) *Sooner Faster Better Reading for All, Strategies for inclusivity in a classroom context* Newcastle: Cambridge Scholars Publishing.
62. Ouellette, G. and Sénéchal, M. (2008) 'Pathways to Literacy: A study of invented spelling and its role in learning to read' *Child Development* 79 (4) 899-913.
63. Overvelde, A. and Hulstijn, W. (2011) 'Learning new movement patterns: A study on good and poor writers comparing learning conditions emphasising spatial, timing, or abstract characteristics' *Human Movement Science* 30 731-744.
64. Ray, K., Daily, K., Colyvan, K. and Lane, A.E. (2021) 'The Effects of a Whole-Class Kindergarten Handwriting Intervention on Early Reading Skills'15 April 2021 https://doi.org/10.1002/rrq.395 Accessed 21/8/2021
65. Read, C. (1986) *Children's Creative Spellings* London: Routledge and Kegan Paul.
66. Richgels, D.J. (1995) 'Invented spelling ability and printed word learning in Kindergarten' *Reading Research Quarterly* 30 (1) 96-109.
67. Roaf, C. (1998) 'Slow hand. A secondary school survey of handwriting speed and legibility' *Support for Learning* 13 (1) 39-42.
68. Rose, J. (2006) *Rose Review. Independent Review of the Teaching of Early Reading: Final Report* London: DfES.
69. Rosencrans, G. (1998) *The Spelling Book. Teaching Children How to Spell* USA International Reading Association.
70. Rutter, M.L., Caspi, A., Fergusson, D., Horwood, L.J., Goodman, R.. Maughan, B.,Moffit, T.E., Meltzer, H., and Carroll, J. (2004) 'Sex differences in developmental reading disability' *Journal of the American Medical Association* 291 9 (16) 2007-12.
71. Sassoon, R. (1990) *Handwriting. The Way We Teach It.* Cheltenham: Glos. Stanley Thornes.
72. Share, D.L. (1995) 'Phonological recoding and self-teaching: Sine qua non of reading acquisition'. *Cognition,* 55, 151–218.
73. Silverman, L. K. (2004) 'Poor handwriting: A major cause of underachievement' http://www.visualspatial.org/Publications/Article%20List/Poor_Handwriting.htm Accessed12/03/2004
74. Snowling, M.J. (2000) *Dyslexia 2nd edition* Oxford: Blackwell.
75. Solity, J. and Vousden, J. (2009) 'Real books versus reading schemes. A new perspective' *Instructional Psychology* 29 (4) 469-511.
76. Solity, J. (2018) 'Systematic synthetic phonics. A possible cause of pupils' literacy difficulties' Lecture, 11th International Conference of the BDA 12-14 April Telford UK.
77. Southgate, V. (1970) *i.t.a. What is the evidence?* London: Schools Council Publication.
78. Stahl, S. A., and Murray, B. A. (1998) 'Issues involved in defining phonological awareness and its relation to early reading'. In J. Metsala and L. C. Ehri (eds.), *Word Recognition in Beginning Literacy* Mahwah, NJ: Erlbaum 65-87.
79. Stanovich, K.E. (1986) 'Matthew effects in reading. Some consequences of individual differences in the acquisition of literacy' *reading Research Quarterly* 21 360-470.
80. Tunmer, W.E. and Cole, P.G. (1985) 'Learning to read. A metalinguistic act' In C.S. Simon (ed) *Communication Skills and Classroom Success. Therapy methodologies for Language learning disabled students.* London: Taylor-Francis 293-313
81. Vellutino, F.R. (1979) *Dyslexia: Theory and Research* London: MIT Press.
82. Wedell, K. (1973) *Learning and Perceptuo-motor Difficulties in Children* New York: Wiley.

Global Journal of human-social science: G
Linguistics & Education
Volume 23 Issue 11 Version 1.0 Year 2023
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-460X & Print ISSN: 0975-587X

Building a Model of Organizational Activities Experience in Natural Sciences under Stem Education Orientation

By Pham Nguyen Cam Tu, Tran Van Dat & Phan Ngoc Thach

An Giang University

Abstract- STEM educational-oriented Natural Science experience activities are learner-oriented activities, Taking learners as the center in all natural science research activities, applying engineering technology and mathematics (STEM) in solving practical problems. Based on theoretical research on experiential activities, STEM education, and the characteristics of Natural Sciences, the article studies the educational forces inside and outside the school. From there, it is proposed to build a model of organizational structure for experiential activities in Natural Sciences oriented toward STEM education. The results of this research are meaningful in helping principals see the importance and significance of coordinating educational forces inside and outside the school in organizing experiential activities in Natural Sciences according to orientation. STEM education for students.

Keywords: model, organization, activities, experience, natural sciences, stem education.

GJHSS-G Classification: FOR Code: 1303

Strictly as per the compliance and regulations of:

Building a Model of Organizational Activities Experience in Natural Sciences under Stem Education Orientation

Pham Nguyen Cam Tu [α], Tran Van Dat [σ] & Phan Ngoc Thach [ρ]

Abstract- **STEM educational-oriented Natural Science experience activities are learner-oriented activities, Taking learners as the center in all natural science research activities, applying engineering technology and mathematics (STEM) in solving practical problems. Based on theoretical research on experiential activities, STEM education, and the characteristics of Natural Sciences, the article studies the educational forces inside and outside the school. From there, it is proposed to build a model of organizational structure for experiential activities in Natural Sciences oriented toward STEM education. The results of this research are meaningful in helping principals see the importance and significance of coordinating educational forces inside and outside the school in organizing experiential activities in Natural Sciences according to orientation. STEM education for students.**

Keywords: model, organization, activities, experience, natural sciences, stem education.

I. Introduction

Experiential activities are educational activities organized by educators to create opportunities for students to access reality and directly experience by synthesizing existing knowledge and skills to perform tasks. Assigned tasks or solved real-life problems. Thereby, children form new knowledge and new skills that contribute to promoting their creative potential and ability to adapt to life, society, nature, and career orientation.

Natural science is an integrated subject, belonging to the primary education stage (junior high school level). Natural science is a subject built and developed on the foundation of Physics, Chemistry, Biology, and Earth science (Hà T. Thuy et al., 2018). The research objects of natural science are objects, phenomena, processes, and primary attributes of the existence and movement of the natural world that are close to the daily lives of students. The natural sciences themselves are experimental. Therefore, practice, experimentation, and experience in this subject have an important role and significance in forming and developing scientific thinking for students.

STEM/STEAM education (Nguyễn T. Hai, 2019), integrated education of Science (S - Science), Technology (T - Technology), Engineering (E - Engineering), Mathematics (M - Maths), from hands-on experience to thinking Creativity is one of the educational directions that is being developed in the world as well as in Vietnam. STEM education is an interdisciplinary educational approach. When arts and humanities elements (Arts) are integrated into STEM, called STEAM, it will contribute to forming students not only with individual scientific knowledge but also with developing practical application skills, creativity, and flexibility. Thereby, helping students discover and solve problems along with other corresponding competencies, contributing to meeting the requirements of providing young human resources in the period of industrialization and modernization of the country, and meeting the requirements of socio-economic development, especially the knowledge economy and industry 4.0.

Researching experiential activities in Natural Sciences with the orientation of STEM education is a dynamic combination of experiential activities with STEM education in the field of Natural Sciences, to concretize the path of formation and development. Developing capacity for middle school students through organizing experiential activities aimed at self, nature, society, and career. From there, students form a scientific worldview, scientific thinking, and scientific application skills.

In general management, organization is the design of department structures to suit the organization's goals. Organizational work needs to pay attention to the operating methods and powers of each department, create conditions for horizontal and vertical linkage, and pay special attention to the arrangement of officers and operators of the organization's departments. position (Tran Kiem & Nguyen X. Thuc, 2015).

Organizing experiential activities is the arrangement of each activity and each person scientifically and reasonably, coordinating parts to create a positive impact. The principal must notify the parents of the plans and action programs of the subjects carrying out the experiential activities so that each member understands and implements the plan correctly. Principals need to pay attention to the personal capacity of each member and establish a coordination mechanism between educational forces inside and outside the school.

Organizing experiential activities in Natural Sciences with a STEM education orientation in middle schools is the responsibility of each teacher and staff member, but directly implementing the plan and organizing the activities is the subject teacher natural

Author α: Natural Science Team, Nguyen Tu Secondary School, Cao Lanh City, Vietnam. e-mail: pncamtu82@gmail.com
Author σ: Faculty of Education, An Giang University, Long Xuyen City, Vietnam. e-mail: tvdat@agu.edu.vn
Author ρ: Foreign Languages Faculty, Dong Thap University, Cao Lanh City, Vietnam. e-mail: pnthach@dthu.edu.vn

sciences based on the principal's assignment. During the implementation process, the principal creates conditions for the operational management apparatus to promote its capacity with a spirit of self-discipline and positivity. All forces coordinate together to complete the task successfully.

Therefore, building a model of organizational structure for experiential activities in Natural Sciences oriented towards STEM education is an essential task in the school management process of the principal aiming at the educational goal of forming into qualities, developing learner capacity in the context of globalization and the 4.0 Industrial Revolution.

II. Some Related Research Issues

a) Experiential activities

From a philosophical point of view, experience is the process of interaction between people and between people and the environment through the senses and activities to create changes in the human worldview (Jullien, 2004).

The act of experiencing must be the individual's act; It is an act of experimentation, experimentation, and exploration in different directions. Experience is an individual's, experimental action in certain situations that must transform the individual through that action (Dewey, 2012; Kolb, 2014). Experiential learning and experiential teaching are closely linked and can be used interchangeably, in which experiential teaching is an intentional teaching process, based on experiential learning theories (Kurka, 2012). Apply experiential learning in the classroom by applying a teaching model in three combined forms: teaching by subject, project-based teaching, and practical experience activities. Many schools have organized experiential activities right in the classroom in various subjects (Wurdinger and Marlow, 2005). Learning through experience, and learning through projects, students understand the importance of knowledge and skills and develop competencies in the STEM field (Mohr-Schroeder et al., 2014).

Experiential Learning Theory (ELT) defines learning as the process by which knowledge is created through experience transformation. Knowledge results from the combination of grasping and transforming experience (Kolb and Kolb, 2009). Lifelong learning requires the ability to learn from life's experiences. Knowledge is created from experience through a cycle of learning driven by the two dialectics of action/reflection and experience/abstraction. The linking of one experience to the next makes a learning spiral that leads to growth and development throughout life. (Passarelli and Kolb, 2011). Kolb's experiential learning cycle is described in Figure 1. below:

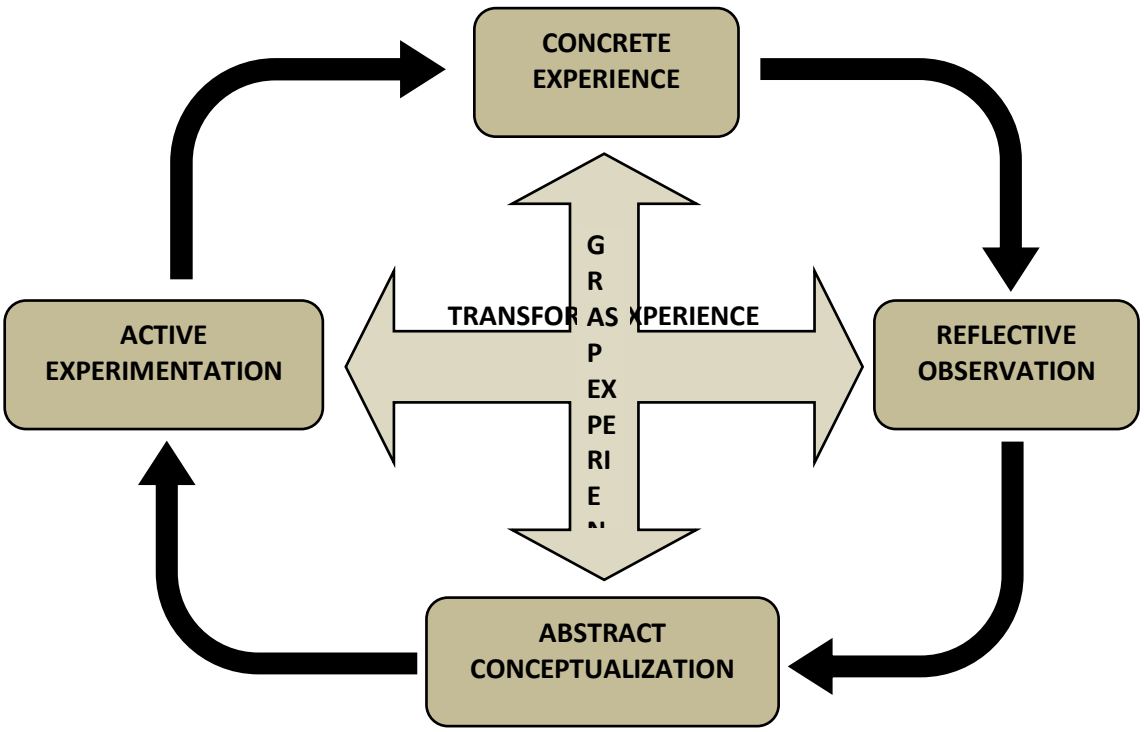


Fig.1: Experiential learning cycle (Kolb and Kolb, 2009)

Experiential activities are essential in cultivating scientific and practical knowledge for students: Experiential activities help students come into contact with new things, natural phenomena, and situations. Therefore, students will receive a lot of scientific knowledge not only from books but also from their

activities. Students apply specific subject knowledge associated with solving local practical problems, partly helping students see what they can do by studying this subject, from which students discover their abilities. Personal strengths, forming passion and interest in a related profession, developing practical abilities, and personality qualities, and promoting individual creative potential (Pham Q. Tiep, 2017; Tran Đ. Nghia, 2018; Tuong D. Hai, 2017). Applying the experiential learning model of classic research up to this stage has become more flexible, but still ensures the essential elements of experiential learning. The characteristic of experiential activities is that they take place in defined situations, and the product of experience is personal and subjective change (Dao T. M. Ngoc và Nguyen T. Hang, 2018; Phan T. Ngo, 2019).

Researching experiential learning management, Nguyen T. Hung (2020) summarizes and applies management functions. Experiential learning management can be understood as the process of planning experiential learning - Leadership and Organizing the implementation of experiential learning plans - Control, evaluating results, and providing feedback for improvement. This system operates in 07 steps in a fair, open, and appropriate manner. Regulations related to the stages and steps of experiential learning management, periodic self-assessment, and monitoring internally and externally according to SWOT analysis, especially the results of this control and assessment, must ensure Accurately reflect the activities of experiential learning management and provide accurate and timely feedback to stakeholders for improvement... (Nguyen T. Hung, 2020).

For educational managers, the meaning of experiential activities is to help realize the purpose of integration and differentiation to develop practical and individualized capabilities, diversifying the creative potential of students, pupil. Through practical activities, educational managers can evaluate the effectiveness of educational programs and make changes and adjustments to appropriate educational programs for their students (Nguyen V. Hien, 2021).

b) STEM education

STEM is the English abbreviation of Science, Technology, Engineering, and Mathematics. In particular, Science is the process of creating scientific knowledge; Engineering is the process of using scientific knowledge to design new technology to solve problems; Mathematics is a tool used to obtain results and share them with others. The term STEM is most commonly used in the educational context (education's interest in the subjects of Science, Technology, Engineering, and Mathematics and the integration of practical subjects to enhance capacity building for learners) and career context (STEM is understood as careers in the fields of Science, Technology, Engineering, and Mathematics) (Ministry of Education and Training, 2019; Chu C. Tho, 2021). "STEM Education is a program that provides, supports, and enhances Science, Technology, Engineering, and Mathematics education in elementary and secondary schools through graduate school. (Council, 2007)"

Developing competencies in STEM fields is considered an urgent goal for many education systems, partly due to the high demand for the STEM workforce today and in the future (Caprile et al., 2015). This sets the education sector to prepare quality human resources in science, technology, engineering, and mathematics, as a premise for the development of science and technology, improving the competitiveness of the economy. Economy, meeting the increasing integration needs of all countries and peoples. Up to now, many countries around the world have paid attention to promoting STEM education at many levels. There have also been many studies investigating the nature of STEM and the role of STEM in the history of scientific and industrial development. Human technology, perceptions of STEM education, and policies for STEM education (Thomas and Watters, 2015).

c) Natural Science experience activities oriented toward STEM education

Natural science is an essential subject for the comprehensive development of students, playing a fundamental role in forming and developing the scientific worldview of middle school students (Ha T. Thuy et al., 2018). Natural Sciences has favorable conditions for experiential teaching, enhancing active learning. During experiential activities, students develop autonomy and increase interaction with their peers, thereby forming core competencies. The fact that students can observe, imagine, predict, and participate in the stages of design, organization, testing, and evaluation of learning results helps them adapt quickly to life (Nguyen Đ. Huan, 2022). Along with Mathematics, Technology, and Informatics, Natural Sciences contribute to promoting STEM education - one of the educational directions that is being developed in the world as well as in Vietnam, contributing to meeting the needs of students. Meet the requirement of providing young human resources for Industrialization - Modernization. The content of Natural Sciences is favorable for the implementation of STEM education, allowing creative approaches to practical problems and attracting students' participation in meaningful activities, thereby Evaluating the results of forming qualities and developing students' abilities through the subject.

Experiential activities in Natural Sciences are the process of students learning about the natural world and applications in life through solving a specific problem in Natural Sciences (Physics, Chemistry). studies,

Biology); Through this, students gain knowledge about objects, phenomena, natural laws, and their effects on human life and the environment. Managing experiential activities in Natural Sciences according to STEM education orientation is managing the process of students performing experiential activities in Natural Sciences with an interest in integrating scientific and applied elements, technology, engineering, and mathematics into operational products. From there, students acquire knowledge, foster qualities, develop capacity, and at the same time recognize the meaning of science, technology, engineering, and mathematics for human life, especially in modern times. great industry 4.0. This activity has a meaningful role in meeting the requirements of the 2018 General Education Program and the need to develop student qualities and abilities. The contents of the sciences of Physics, Chemistry, and Biology are organized as experiential activities according to STEM education orientation. Participating students are formed to develop general abilities (autonomy and self-study, problem-solving). Problems and creativity, communication and cooperation), natural science capacity (natural science awareness, exploration and discovery of the natural world, application of knowledge into practice), adaptive capacity with life, capacity to design and organize activities, and career orientation capacity.

d) Organizational apparatus

Organizational structure is the division of work and the links in a chain that control corporate activities, including work, communication, coordination, and recognized authorities. Every organizational structure must satisfy three basic requirements: (1) division of labor for each specific job, (2) coordination of work so that employees can achieve the set goals proposed, and (3) management scope. Division of labor is dividing an enormous task into smaller tasks for each person. This is the premise of specialization. Coordination is a tool to ensure that everyone works effectively and together toward the organization's goals. The scope of management, and the arrangement of organizational structure, are the management limits that a manager can effectively supervise (Tran Kiem, 2016).

Some types of organizational structures:

Structure by functional departments: According to this structure, employees are arranged according to a specific range of knowledge; and centralized to coordinate activities effectively. Standardization of work processes is the most common form of coordination used in functional structures. This structure also has the advantage of providing professional support between departments and clarifying the path for advancement within the organization. The organization allows for greater specialization and competence in each area, direct supervision is more accessible, and creates a joint knowledge base that serves all members of the organization.

Matrix structure: This is a combination of two structures based on functional departments and project groups. Employees are assigned to cross-functional project teams, but they also belong to a specific applicable department, whereby they return to the applicable department after completing the project. The characteristic of this structure is that in addition to line leaders and operational departments, there are also project leaders who coordinate the activities of departments to carry out a specific project (Tran Kiem, 2016).

III. Model building

a) Objectives of model implementation

To help principals orient and organize experiential activities in Natural Sciences according to STEM education orientation; Provide specific direction and assign tasks to the Natural Sciences team to play a vital role in organizing and implementing activities; Develop methods of coordination with relevant departments and educational forces inside and outside the school by the actual conditions of the unit.

b) Model structure

i. *Model structure of Natural Science experience activities oriented toward STEM education*

STEM education-oriented Natural Science experience activities are activities of students observing, exploring, and discovering through experiments and practical exercises. The act of applying natural science knowledge combined with scientific and technical applications to solve academic problems and in practical life. Thereby, students acquire knowledge, foster qualities, develop skills, and simultaneously realize the meaning of Science, Technology, Engineering, and Mathematics for human life, increasing interest. study subjects (Pham N. C. Tu et al, 2022).

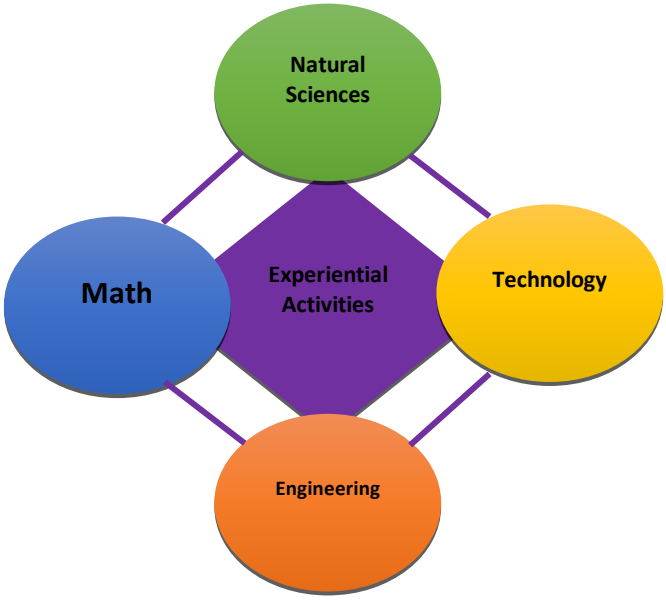


Fig. 2: Model of Natural Science Experiential Activities oriented towards STEM education

ii. *Model structure of educational forces in schools*

The educational force in the school is all teachers who are responsible for teaching and educating, staff and officials working to support and serve teaching and student education activities in high schools. Youth Teams, Youth Unions, and Youth Unions are responsible for supporting, coordinating, and participating in implementing student educational activities. For STEM education-oriented natural science experience activities, the Natural Science team needs to coordinate closely with other professional teams such as the Math-Information team and the Technology team; Grassroots Trade Union organization; Laboratory staff practicing Physics, Chemistry, and Biology; computer room staff; Library staff; Support staff for teaching equipment, general in charge of the Team, secretary of the union branch (Ministry of Education and Training, 2020).

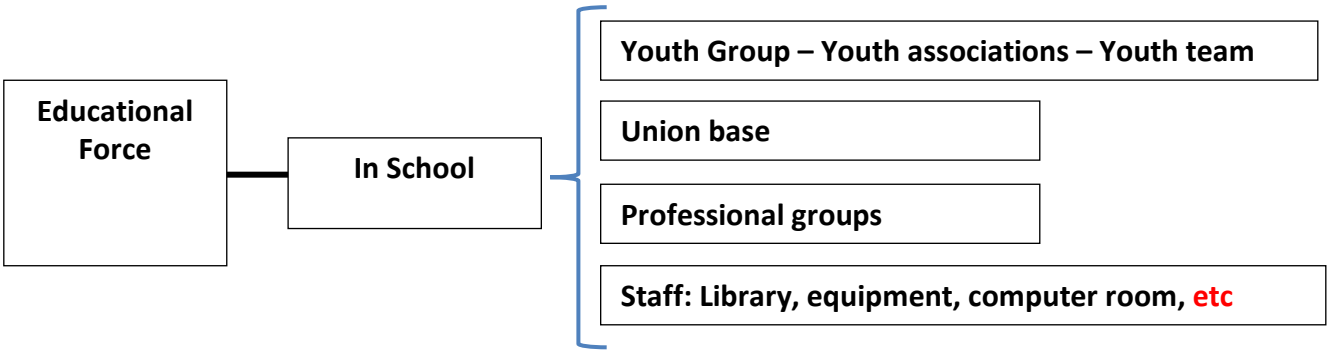


Fig. 3: Model of educational forces in schools

iii. *Model structure of educational forces outside the school*

The educational force outside the school is the representative board of students' parents and the relationships between school, family, and society. The school proactively coordinates regularly and closely with family and society to build a unified educational environment to realize educational goals and principles. The school coordinates with local authorities and organizations, mobilizes the forces and resources of the community to care for the cause of education, contributes to the construction of physical facilities and educational equipment of the school, builds a learning movement and a healthy and safe educational environment; prevent activities that have negative effects on students; Create conditions for students to have fun, engage in healthy cultural, physical and sports activities appropriate to their age (Ministry of Education and Training, 2020). When organizing STEM education-oriented Natural Science experience activities in middle schools, principals must coordinate with local higher education institutions (Faculty of Natural Sciences)., high schools with strengths in developing STEM education, vocational schools with a STEM career

development orientation, service businesses related to the STEM field, factories, and enterprises operating according to the current mechanism. Modern application of science, technology, and engineering to the production process.

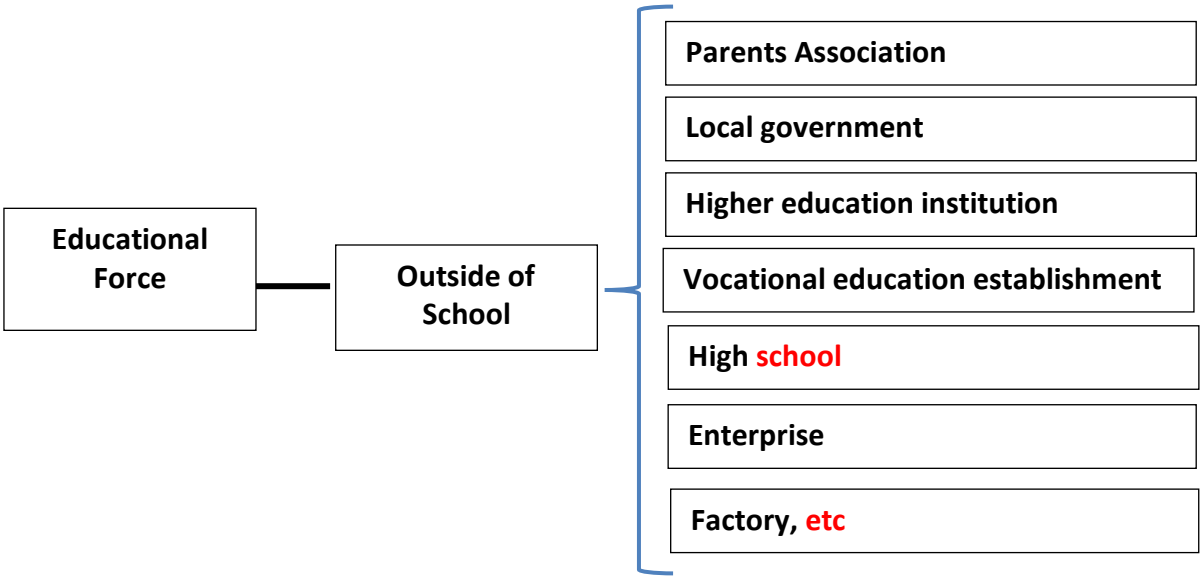


Fig. 4: Model of out-of-school educational forces

iv. *Model structure Organizational apparatus Natural Science experiential activities oriented towards STEM education*

This model combines the functional structure of the Natural Sciences team and the implementation of a project to organize experiential activities oriented towards STEM education. Teachers from the Natural Sciences group (Physics, Chemistry, Biology) are assigned to be in charge of tiny, partial project groups, then synthesized into a joint project according to the theme of the experiential activity. In this organizational model, the principal is the general planner, organizer, and director. The principal assigned the task to the leader of the Natural Sciences team to be in charge of the project and coordinate with educational forces to organize activities to experience Natural Sciences with the orientation of STEM education.

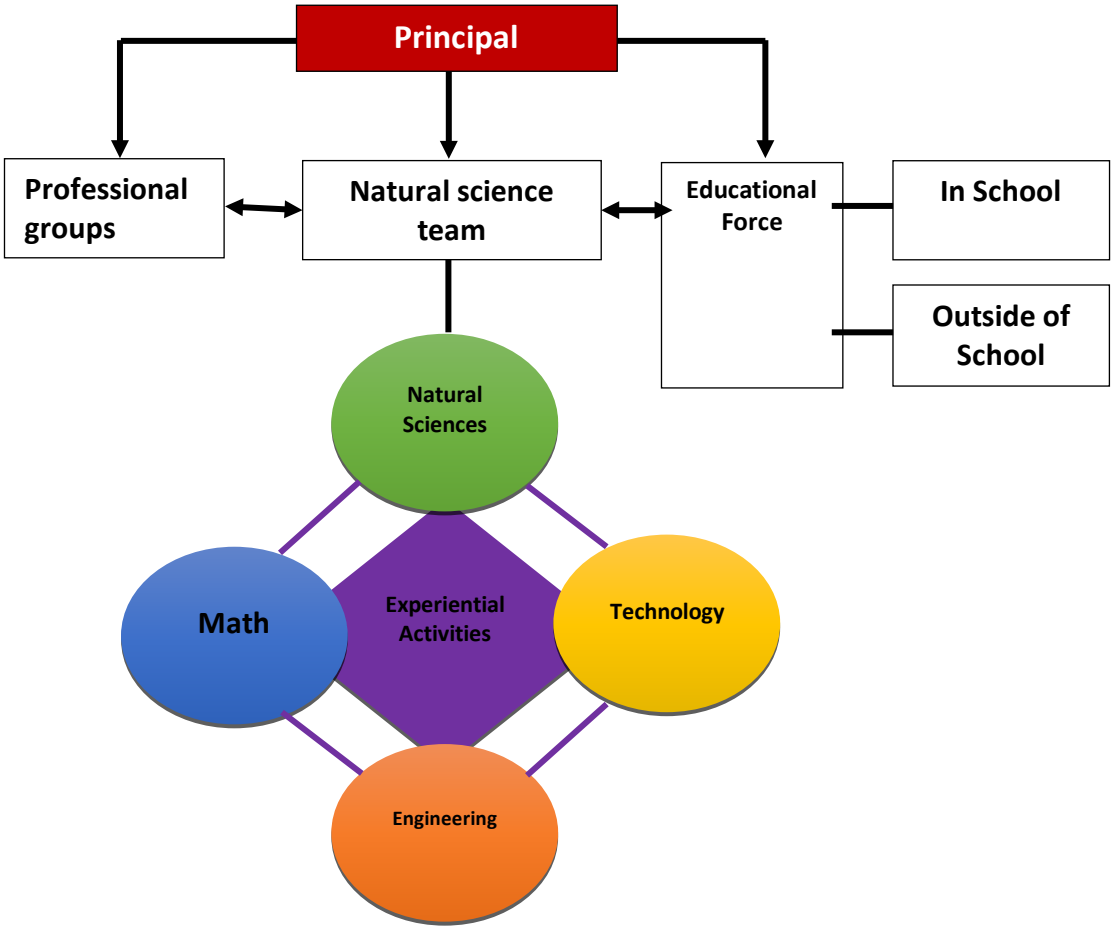


Fig. 5: Model of the organizational structure for experience activities Natural Sciences subject with STEM education orientation

c) *Content and Implementation Method*

i. *Planning*

The planning principal must identify the goals to be achieved, especially the goals of developing student quality and capacity; Choose appropriate measures for each activity, and topic; and create an activity program. Planning experiential activities in Natural Sciences with a STEM education orientation is not only the principal's job but also the homeroom teacher, subject teacher, and team leader in charge also need to determine the goal. Objectives, content, methods, and forms of organizing activities, and checking and evaluating performance results.

The STEM education-oriented Natural Science experience activity plan needs to identify clearly the following:

- *Activity name:* Meaningful and attracts participants' attention; consistent with the tasks of the school year and the psychology of students' ages; Demonstrates the field of natural science activities (Physics, Chemistry, Biology) according to STEM education orientation.
- *Objectives and requirements of the activity:* Must be clear and consistent with the goals of education, knowledge, awareness, ability, capacity of students, etc. Especially, the development goals must be clearly expressed. They are developing, or student qualities and abilities through a series of experiential activities in Natural Sciences oriented towards STEM education.
- *Content of the activity:* By with the 2018 General Education Program and has a relationship with teaching activities of Natural Sciences, Fostering qualities, forming capacity, and career orientation for middle school students. It is necessary to clarify the elements: Science (Physics, Chemistry, Biology), Technology, Engineering, and Mathematics are integrated into the content of experiential activities of Natural Sciences according to STEM education orientation.
- *Form and method of organizing activities:* Natural Science experience activities oriented towards STEM education must be feasible and practical. Therefore, the plan needs to choose methods suitable to the actual situation of the school, locality, and student population. Prioritize using formal methods to develop student qualities and abilities, such as project methods, collaboration, discovery, and problem-solving.

- *Identify the subjects participating in the activity:* Natural Science teachers, students, parents, coordinating forces inside and outside the school, and local authorities. In particular, experts at local universities can be invited to assist in the professional fields of Natural Sciences and STEM education.
- *Time and location of the activity:* Consistent with the school's general plan for organizing experiential activities.
- *Expected results after the activity:* Cognitive expansion, and development of behavioral skills in students. There are unique expectations for developing student qualities and abilities through a series of experiential activities in Natural Sciences oriented toward STEM education.
- *Criteria for evaluating the results of experiential activities:* Are the basis for assessing student performance results, demonstrating the effectiveness of organizational activities. The content of the criteria table needs to show the level of achievement of the Science elements (Physics, Chemistry, Biology), Technology, Engineering, and Mathematics.

ii. *Organization*

Organizing the implementation of natural science experience activities oriented towards STEM education is the arrangement of each activity and each person scientifically and reasonably, coordinating the departments to create a positive impact. The principal must notify the plans and action programs of the subjects carrying out the STEM education-oriented Natural Science experience activities so that each member understands and implements the plan correctly. The principal needs to pay attention to the personal capacity of each member and establish a coordination mechanism between relevant departments. The process of organizing and implementing the plan includes:

- The principal organizes the apparatus by assigning management responsibilities mainly to the natural science professional team and natural science teachers. In addition, to promote STEM education well, principals must arrange coordinated staffing of Technology and Mathematics teachers.
- The principal assigns support responsibilities, including Youth Union - Team officers, library staff, equipment, laboratory practice room, information technology - technology room, teachers in charge of facilities, and finance to create Favorable conditions for STEM education-oriented Natural Science experience activities to be organized successfully.
- The principal coordinate forces outside the school, including the Parents' Association, the Learning Promotion Association, local social organizations, businesses, companies, factories, eco-tourism areas, and high schools. The university has strengths in STEM education, to create conditions for students to expand the environment of organizing experiential activities to approach practical life.

Organizing experiential activities in Natural Sciences with a STEM education orientation in middle schools is the responsibility of each teacher and staff member, but directly implementing the plan and organizing the activities is the subject teacher natural sciences based on the principal's assignment. During the implementation process, the principal creates conditions for the operational management apparatus to promote its capacity with a spirit of self-discipline and positivity. All forces coordinate together to complete the task successfully.

iii. *Command*

Directing is an essential step for the principal; the effectiveness of implementing activities speaks to the leadership capacity of the school head. Directing the implementation of the plan to organize experiential activities in Natural Sciences with a STEM education orientation is the principal's intervention and the entire process of managing experiential activities to ensure the implementation of experiential activities. The experiment is checked in the right direction and according to plan.

The principal directs to adhere to the goal of experiencing Natural Science activities in the direction of STEM education. The Principal leads closely to the goals of formation and development of general capacity, natural science capacity, capacity to adapt to life, capacity to design and organize activities, and career orientation capacity for students. Students throughout the process of collecting and implementing experiential activities in Natural Sciences with a STEM education orientation.

The Principal directs the implementation of the content of experiential activities in Natural Sciences according to STEM education orientation, including the fields of Physics, Chemistry, and Biology. At the same time, STEM education must be oriented to integrating scientific topics, including Substance and changes of matter, living things, energy and changes, Earth and Sky combined with application. Technology, techniques, and mathematical tools and solve a specific situation according to the requirements of the experiential activity.

The Principal directs the application of methods and forms of organizing experiential activities in Natural Sciences according to STEM education orientation to promote students' proactive and creative initiative, making students the center and contributing to the formation and development of students' abilities.

The principal directs and coordinates the inspection and evaluation of experiential activities in Natural Sciences according to STEM education orientation. Inspection and evaluation work helps the

principal promptly detect and adjust errors and mistakes in implementing the plan, thereby making necessary corrections and corrections. The principal directs and coordinates the inspection and evaluation of STEM education-oriented Natural Science experience activities, including determining evaluation principles, and evaluation procedures, and suggesting evaluation tools.

iv. *Check*

Currently, ensuring the quality and effectiveness of assessing learning outcomes/participation in educational activities based on the competency approach requires applying all three assessment philosophies, including (1) assessment for learning, (2) assessment is learning, and (3) assessment of learning outcomes/participation in educational activities. Because students' abilities are formed, trained, and developed throughout teaching the subject/organizing educational activities, assessment needs to be closely integrated with teaching/organizing activities. Educational initiatives consider assessment a learning tool to form and develop student capacity.

Principals need to disseminate to teachers the principles of testing and evaluating experiential activities in Natural Sciences oriented towards STEM education in the direction of developing students' capacity. First, the principle of ensuring validity. Second, ensure comprehensiveness and flexibility. Third, ensure fairness and reliability. Fourth, ensure that the assessment pays attention to students' outcomes and experiences. Fifth, provide assessment in a practical context and for student development.

To ensure fair, objective, and accurate testing and evaluation, principals need to direct teachers to follow the process of testing and evaluating experiential activities in Natural Sciences oriented toward STEM education. That is to determine the purpose of evaluation, the objective of the experience topic to be assessed; develop testing and evaluation plans; select and design assessment tools; perform testing and evaluation; analyze and process assessment results; explain and respond to assessment results; Use the results to develop student qualities and abilities.

The principal directs the development of testing and assessment tools in the direction of assessing student capacity. These tools include rubrics, activity records, activity products, notes, questions, checklists, and evaluation scales. Evaluation based on criteria must demonstrate the levels of achievement of Science, Technology, Engineering, and Mathematics elements for Natural Science experience products.

After inspection and evaluation, the organization must learn from experience, and point out the achieved and unsatisfactory aspects of the activity, thereby recognizing the values and contributions of groups and individuals to the organization. Actively experience Natural Science with STEM education orientation. Inspection and evaluation of activities must be objective, accurate, comprehensive, public, timely, affordable, and closely adhere to the requirements of the general education program and educational goals at the school level. On that basis, clarify the current situation to adjust the educational process appropriately.

IV. Discuss the Conditions for Implementing the Model

To effectively implement the model of organizing experiential activities in Natural Sciences oriented toward STEM education in schools, the following conditions must be met:

- *Internal capacity of the principal:* Demonstrated in the role of planning, organizing, and directing teachers and staff in the school to coordinate with the Natural Sciences team to organize experiential activities well. Natural Sciences subject with STEM education orientation aims to develop student qualities and abilities, contributing to improving the overall educational quality of the school.
- *The principal's foreign policy capacity:* Expressed in the role of lobbying, persuading, creating trust, and calling for investment, material and spiritual contributions from sponsors, benefactors, vocational education institutions, and businesses outside the school; contributing to diversifying forms of organizing experiential activities in natural sciences in the direction of STEM education that is close to reality, approaching the 4.0 career trend and globalization trend.
- The capacity of the leader of the Natural Sciences group to implement the plan in implementing the principal's plan includes coordination with professional groups and educational forces inside and outside the school. All Natural Science teachers play a vital role in guiding, organizing implementation, checking and evaluating student performance, and then synthesizing reports to the school.
- Internal solidarity within the school, the spirit of determination to comprehensively innovate education towards developing student qualities and abilities; The pedagogical team is enthusiastic and dedicated to innovating from content to methods and forms of teaching and education, testing and evaluation methods and together with the school to well organize educational activities according to the regulations of the State general education program 2018.
- The interest of local authorities, the connection from local authorities with businesses, STEM education development factory, to create conditions for learning, experience, and practice environment for

students to have the opportunity to interact with reality.

V. Conclusion

The model of building an organizational structure for experiential activities in Natural Sciences with the orientation of STEM education deployed in schools will bring practical significance in forming and developing the qualities and abilities of learners. However, in the context of the strong development of information technology, the model needs to continue to be researched and expanded in the direction of digital transformation and globalization, increasing the integration of technology applications into organizing activities.

References Références Referencias

1. Ministry of Education and Training. (2019). *Training administrators and teachers on developing STEM education topics in secondary education.*
2. Ministry of Education and Training. (2020). *Circular 32/2020/TT-BGDDT dated September 15, 2020, Promulgates the Charter of junior high schools, high schools, and high schools with many levels of education.*
3. Caprile, M., Palmén, R., Sanz, P., & Dente, G. (2015). *Encouraging STEM studies labor market situation and comparison of practices targeted at young people in different member states.* Policy Department A, 12.
4. Chu, C. T. (2021). *STEM education inspires future innovators.* Communist Review, 954, 23–27.
5. Council, C. (2007). *Report of the Academic Competitiveness Council.* http://coalition4evidence.org/wp-content/uploads/2012/11/ACC-report-final.pdf
6. Dao, T. M. Ngoc., & Nguyen, T. Hang. (2018). *Experiential learning – theory, and application to design and organization of experiential activities in high school subjects.* Journal of Education, 433, 36–40.
7. Dewey, J. (2012). *Experience and education.* Young publishing.
8. Ha T. Thuy. et al. (2018). *Teaching Natural Science at the junior high school level in the direction of developing capacity.*
9. Julien, F. (2004). *Eastern wisdom and Western philosophy.* Publisher Da Nang.
10. Kolb, AY, & Kolb, DA (2009). *The learning way: Meta-cognitive aspects of experiential learning.* Simulation & Gaming, 40 (3), 297–327.
11. Kolb, D. A. (2014). *Experiential learning: Experience as the source of learning and development.* FT press.
12. Kurka, V. J. (2012). *Recognizing culture in experiential education: an analysis and framework for practitioners.*
13. Mohr-Schroeder, M.J., Jackson, C., Miller, M., Walcott, B., Little, D.L., Speler, L., Schooler, W., & Schroeder, D.C. (2014). *Developing Middle School Students' Interests in STEM via Summer Learning Experiences: S ee B lue STEM C amp.* School Science and Mathematics, 114 (6), 291–301.
14. Nguyen, D. Hai. (2022). Organize experiential activities in teaching the topic "Earth and Sky", a 6th-grade Natural Science subject with the orientation of developing student capacity. *Journal of Education,* 22 (5), 37–41.
15. Nguyen, T. Hai. (2019). *STEM/STEAM education from hands-on experiences to creative thinking.* Tre Publishing House.
16. Nguyen, T. Hung. (2020). Managing experiential learning. *Vietnam Journal of Educational Sciences,* 27, 10–14.
17. Nguyen, V. Hien. (2021). Designing STEAM experience activities in Nature and Society subjects in elementary school. *Journal of Education,* 514, 17–21.
18. Passarelli, A.M., & Kolb, D.A. (2011). The learning way: Learning from experience as the path to lifelong learning and development. *The Oxford Handbook of Lifelong Learning*, 70–90.
19. Pham, N. C. Tu., et al. (2022). Managing experiential activities in Natural Science oriented towards STEM education in middle school. *Journal of Educational Sciences, Vietnam Academy of Educational Sciences,* Volume 18 (No. 11), 54–61.
20. Pham, Q. Tiep. (2017). The nature and characteristics of the STEM education model. Journal of Educational Sciences, Vietnam Academy of Educational *Sciences*, 61–64.
21. Phan, T. Ngo. (2019*). Experiential activities in character education for high school students. Vietnam Journal of Educational Sciences,* 16 (April 2019), 1–6.
22. Thomas, B., & Watters, J.J. (2015). Perspectives on Australian, Indian and Malaysian approaches to STEM education. *International Journal of Educational Development,* 45, 42–53.
23. Tran, D. Nghia. (2018). Develop a plan for experiential education activities in specialized high schools in the new general education program. *Journal of Educational Administration*, 9, 90–96.
24. Tran Kiem. (2016). *Organizational science and educational organization.*
25. Tran, Kiem., & Nguyen, X. Thuc. (2015). *Overview of management science and educational management.*

26. Tuong, D. Hai. (2017). Career-oriented education through creative experiential activities in teaching physics linked to the local context. *Science Journal Hanoi University of Education,* 62 (1), 34–41.
27. Wurdinger, S. D., & Marlow, L. (2005). *Using experiential learning in the classroom: Practical ideas for all educators. R&L Education.*

This page is intentionally left blank

Global Journal of human-social science: G
Linguistics & Education
Volume 23 Issue 11 Version 1.0 Year 2023
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-460X & Print ISSN: 0975-587X

The Literary Language of Ondjaki's *Há Prendisajens Com O Xão*: A Three-Dimensional Analysis in Dialogue with Manoel de Barros

By Francesca Degli Atti
Università del Salento

Introduction- This contribution analyzes the poetic writing of Ondjaki (born Ndalu de Almeida) following the approach developed in Degli Atti (2023). In the context of the perspective we adopt, the meaningful learning of foreign languages is seen as exploiting the dynamics of interrelation between linguistic, literary and (inter)cultural education (BAGNO e RANGEL, 2005; BALBONI, 2008, 2012, 2018; BALBONI e CAON, 2015; CAON e SPALIVIERO, 2015; COSSON, 2020; MENDES, 2011; SPALIVIERO, 2020). Starting from the concept of language as language-culture ('*língua-cultura*': MENDES, 2011) and of literature as a language and a repertoire (COSSON, 2020), we propose an analysis of Ondjaki's work *Há prendisajens com o xão – o segredo húmido da lesma & outras descoisas* (2002) – which is characterized by a solid dialogic component with the Brazilian Manoel de Barros's poetry – illustrating how the construction of meaning takes place through the indissoluble interconnection between linguistic, literary and cultural levels. Study and reflection on the literary text is a tool to access this three-dimensionality of language and constitutes a precious opportunity for a language-culture insight experience for PFL (Portuguese as a Foreign Language) learners, contributing to training them as foreign language specialists and helping to build them as individuals.

GJHSS-G Classification: *LCC Code: P1-1091*

Strictly as per the compliance and regulations of:

The Literary Language of Ondjaki's *Há Prendisajens Com O Xão*: A Three-Dimensional Analysis in Dialogue with Manoel de Barros

Francesca Degli Atti

O chão é um ensino
Manoel de Barros, *Arranjos para assobio*

I. Introduction

This contribution analyzes the poetic writing of Ondjaki (born Ndalu de Almeida) following the approach developed in Degli Atti (2023). In the context of the perspective we adopt, the meaningful learning of foreign languages is seen as exploiting the dynamics of interrelation between linguistic, literary and (inter)cultural education (BAGNO e RANGEL, 2005; BALBONI, 2008, 2012, 2018; BALBONI e CAON, 2015; CAON e SPALIVIERO, 2015; COSSON, 2020; MENDES, 2011; SPALIVIERO, 2020). Starting from the concept of language as language-culture ('*língua-cultura*': MENDES, 2011) and of literature as a language and a repertoire (COSSON, 2020), we propose an analysis of Ondjaki's work *Há prendisajens com o xão – o segredo húmido da lesma & outras descoisas* (2002) – which is characterized by a solid dialogic component with the Brazilian Manoel de Barros's poetry – illustrating how the construction of meaning takes place through the indissoluble interconnection between linguistic, literary and cultural levels. Study and reflection on the literary text is a tool to access this three-dimensionality of language and constitutes a precious opportunity for a language-culture insight experience for PFL (Portuguese as a Foreign Language) learners, contributing to training them as foreign language specialists and helping to build them as individuals.

The first part of our contribution clarifies the theoretical and methodological foundations of our analysis. Ondjaki's work is then introduced, primarily focusing on his relation with poetry and the fundamental lines of the poetic discourse that emerge in his second book of poems. Subsequently, we proceed to the analysis of *Há prendisajens com o xão*, highlighting how the language-culture-literature triad occurs through literary language; specifically, we display the distinctive linguistic features illuminating the parallels with Barrosian poetic discourse (DEGLI ATTI, 2023) and the choices that uniquely distinguish the processes activated by the Angolan writer following his conceptions of writing and poetry. Our conclusions summarize the results of our examination, demonstrating how the approach to literary language as a triple dimension proves to be highly productive in deciphering the strategies of meaning construction.

Author: *Università del Salento, Italy.*
e-mail: francesca.degliatti@unisalento.it

II. Theoretical and Methodological Foundations

In his lecture given in 1988, Antonio Candido declares:

> (...) [a literatura] não é uma experiência inofensiva, mas uma aventura que pode causar problemas psíquicos e morais, como acontece com a própria vida, da qual é imagem e transfiguração. Isto significa que ela tem papel formador da personalidade, mas não segundo as convenções; seria antes segundo a força indiscriminada e poderosa da própria realidade. Por isso, nas mãos do leitor o livro pode ser fator de perturbação e mesmo de risco. (CANDIDO, 2012: 19)

Later in the same speech he adds:

> Primeiro, verifiquei que a literatura corresponde a uma necessidade universal que deve ser satisfeita sob pena de mutilar a personalidade, porque pelo fato de dar forma aos sentimentos e à visão do mundo ela nos organiza, nos liberta do caos e portanto nos humaniza. Negar a fruição da literatura é mutilar a nossa humanidade. (CANDIDO, 2012: 30)

The lecture's theme was the right to literature, "O direito à literatura", a topic addressed by the Brazilian sociologist and literary critic within a broader vision of human rights. The scholar focuses on the fundamental role of literature in the formation of the individual.

Candido's position was taken up and developed by Bagno and Rangel (2005), who drew the concept into the debate on preconceptions about language (BAGNO and RANGEL, 2005). According to the authors, it is the task of linguistic education to embrace all the sociocultural factors that allow the individual to "ampliar o conhecimento de/sobre sua língua materna, de/sobre outras línguas, sobre a linguagem de um modo mais geral e sobre todos os demais sistemas semióticos" (BAGNO and RANGEL, 2005: 63), embracing all areas of knowledge that contribute to defining 'linguistic imaginary' and 'linguistic ideology', including "crenças, superstições, representações, mitos e preconceitos que circulam na sociedade em torno da língua/linguagem" (BAGNO; RANGEL, 2005: 63).

Therefore, linguistic education is complete only if it allows us to benefit from the literary heritage since individuals can fully realize their potential and be the protagonist of their own story only if they can have full access to the ideas and discourses that have contributed to mark the essential references and the imaginary of the nation, shaping its identity traits.

Having access to literature means being able to enjoy the text in light of its literariness, i.e., the qualities that make it a literary text (SPALIVIERO, 2020); achieving this goal requires a spectrum of skills, which includes, but is not limited to, linguistic competence, since a deep understanding of the text involves a complete mastery of deciphering layers that lie both within and beyond the linguistic level. Adopting Mendes's point of view (2011), we see how language presents itself as a complex social and symbolic phenomenon, language-culture, through which we structure our experience of the reality that surrounds us, giving it meaning.

The dual nature of language-culture finds complete application in the literary domain since it is in this terrain that it has the opportunity to unfold its potential at the highest level. In line with Cosson (2020), we envision literature as a discourse articulated in a repertoire through which we express our understanding and interpreting of the world, "um repertório de textos e práticas de produção e interpretação, pelos quais simbolizamos nas palavras e pelas palavras a nós e o mundo que vivemos" (COSSON 2020: 177). Literature plays a fundamental role in the production and circulation of both linguistic and identity imaginary, contributing to weaving a dense network of mutually related contents that exposes the experience of the world through a process of reconfiguration when translated into literary production. Literature is a language that uses language: "uma linguagem que usa a própria linguagem para dar sentido ao mundo e aos sujeitos, palavras que ao se apresentarem somente como palavras criam e recriam simbolicamente a existência de cada um de nós" (COSSON, 2020: 200). Candido (2012) refers to the specific use of language in literature as "palavra organizada":

> Toda obra literária é antes de mais nada uma espécie de objeto, de objeto construído; e é grande o poder humanizador desta construção, enquanto construção.
>
> De fato, quando elaboram uma estrutura, o poeta ou o narrador nos propõem um modelo de coerência, gerado pela força da palavra organizada. (...)
>
> Mas as palavras organizadas são mais do que a presença de um código: elas comunicam sempre alguma coisa, que nos toca porque obedece a certa ordem. Quando recebemos o impacto de uma produção literária, oral ou escrita, ele é devido à fusão inextricável da mensagem com a sua organização. Quando digo que um texto me impressiona, quero dizer que ele impressiona porque a sua possibilidade de impressionar foi determinada pela ordenação recebida de quem o produziu. (...) O caos originário, isto é, o material bruto a partir do qual o produtor escolheu uma forma, se torna ordem; por isso, o meu caos interior também se ordena e a mensagem pode atuar. Toda obra literária pressupõe esta superação do caos, determinada por um arranjo especial das palavras e fazendo uma proposta de sentido. (CANDIDO, 2012: 20-22)

The identification of the 'order' imposed on the text by the author and the decoding of the techniques applied for its creation are critical steps; they can profoundly change the reader's experience of the text, requiring even higher levels of active participation in the construction of meaning.

Among the different literary manifestations, poetry stands out for its ability to broaden and deepen the semantic texture of the text; this is done by exploiting aspects such as phonetics and linguistic transgression (GARDES-TAMINE, 1992). Maria Helena de Moura Neves (2007: 88) asserts the extreme mutual connection between poetry and grammar:

> (...) há relações essenciais, fundadoras, entre a gramática (ou seja, o arranjo lexicogramatical para produção de sentido) e a poesia (ou seja, a criação de significados naquela esfera meio impalpável que se tem chamado de "literatura"). Na verdade, se poesia é um fazer linguístico, no reverso se pode afirmar que é a língua (a sua "gramática") que faz poesia. O que digo é que há GRAMÁTICA na POÉTICA, e que disso também se pode – e legitimamente – fazer corpo de doutrina, porque uma reflexão sobre tal fato é exatamente o que nos há de fazer compreender a literatura como "criação", como coisa de "poeta".

A full ability to access the poetic text and decipher it challenges the reader's understanding of the 'rules' employed by the author in its organization; identifying the principles that regulate the 'order' of the text means making the underlying structure visible and discriminating the contribution of linguistic, literary and socio-cultural factors to the construction of meaning. In terms of foreign language teaching-learning, this means giving the learner access to an increasingly advanced level of understanding of language mechanisms; this comes with exposure to different perspectives on reality, symbolized through language and literature. Thus, it will be possible to gradually understand the linguistic-cultural imaginary of the language studied and develop associated skills.

In the specific case of PFL, it would be not only inappropriate and limiting but misleading to isolate the study of language from the other facets of the three-dimensional relationship between language-culture-literature: ignoring the lively debate in this regard would lead the potential specialist in PFL to develop a short-sighted vision that ignores the cultural and socio-linguistic implications consciously or unconsciously inherent in the choices made by native speakers and evident to them. The analysis of the literary work through an integrated approach allows us to exhibit the

language in use in the literary text, revealing its mechanisms in the context of reference, creating awareness regarding the regulations that govern the construction of meaning, and thus orienting the learner to in-depth deciphering procedures and complex levels of competence (DEGLI ATTI, 2023: 136-137).

Considering what has been said, Ondjaki's *Há prendisajens com o xão* is illustrative of complex dynamics of construction of meaning. The book shows strong affinities with the work of the Brazilian poet Manoel de Barros, in particular concerning the strategies of language organization and manipulation used in the construction of the meaning, denoting a peculiar literary language. Our paper contributes to studies on Ondjaki's writing by examining the literary language created by the author in this work. Ondjaki's verses demonstrate the confluence of literary and cultural elements for the creation of a poetic diction that owes part of its captivating appeal to Barros's teachings. The study of the language used in *Há prendisajens com o xão* offers the reader an internal perspective on the mechanisms of word formation in Portuguese and shows the Angolan poet's original approach to manipulating the semantic potential of the language. The writer organizes a personal language that playfully deviates from the precepts of standard Portuguese and incorporates substandard linguistic features to achieve exciting results of semantic broadening.

III. On Ondjaki and Poetry

The intellectual and artistic trajectory of Ondjaki is eclectic and varied, embracing literature, sociological research, documentary film production, and activities in figurative arts. The author's literary productions include short stories, novels, children's and youth literature, poetry, and theatrical plays; the latter present the smallest number of works, while an ample space is covered by narrative. Poetry has a marginal position compared to narrative, which proves to be more prolific and studied; still, Ondjaki's poetry writing has proven to be constant, starting in 2000 with the publication of *Actu sanguíneu*, followed by *Há prendisajens com o xão – o segredo húmido da lesma & outras descoisas* (2002), *Materiais para confecção de um espanador de tristezas* (2009), *Dentro de mim faz Sul, seguido de acto sanguíneo* (2010), *Os modos do mármore* (2015) and, finally, *Há gente em casa* (2018). Six books spanning eighteen years.

The relationship with poetry emerges from the author's declarations as driven by an irresistible force. Talking about *Dentro de mim faz Sul, seguido de acto sanguíneo* (2010), the author refers to his poetry books as "portas que conduzem a um lado mais interno…um lado mais cicatrizado de mim" (ONDJAKI, 2010: 8). Ondjaki admits that he has difficulty understanding the poetry he writes and the reasons that compel him to compose (ONDJAKI, 2013): poetry presents to the poet, who accepts it without analyzing the origin of the verses. The writer surrenders to poetry, renouncing to dominate it in a rational way: "É talvez importante, para mim, não saber o "porquê" de certas coisas no mundo da literatura" (ONDJAKI, 2013). In another interview, he states:

> Faz-se poesia porque se precisa dela, ou de a partilhar. Mas sobretudo fazer poesia é uma necessidade. (...) Escreve-se um poema como uma urgência interna, e por vezes há uma estória (mais íntima) por detrás do poema. Mas é preciso aceitar que a poesia é também mistério. (ONDJAKI, 2011b)

Writing poetry is, therefore, an intimate necessity, activated as a spontaneous and immediate reaction in the poet, who attempts to discipline sensations and emotions. He writes about his early poems:

> *actu sanguíneu* era uma reunião, talvez extensa, de poemas escritos no fim da adolescência, onde a descoberta de manobras linguísticas se tornara veículo para dizer os mundos que me andavam por dentro. Eram viagens internas que apelavam a «instantâneos» poemas vestidos de cores, cheiros, dores. Ecos do que também andava a ler e a descobrir, e sobretudo pequenas explosões sensoriais que eu buscava controlar por via de palavra corrigida, mil vezes relida. (ONDJAKI, 2010: 8)

The need to give voice and form to the poetry that visits him is supported by the reading of authors and poets during his formative years. Poetry is a constant company; Ondjaki confesses that he always has a book of poetry with him when he travels: it is a pure necessity, "é uma coisa fisica, de sentir a poesia perto de mim" (ONDJAKI, 2022). Among his favorite reads is Manoel de Barros's work, which the Angolan poet reports as his beloved travel companion. It is not surprising that the reading of Barros's impressive poetry influenced Ondjaki to the point of becoming a point of reference in his poetics, as emerges noticeably in his second book of poems, *Há prendisajens com o xão*, published in 2002 (from now on referred to as HPX[1]).

Briefly summarizing the affinities between the two poets, we identify the centrality of the word as a catalyst element of the poetic discourse, articulating the converging lines of poetics, exposed below:

(A) *Exaltation of the minor and the insignificant*, related in both poets to the semantic sphere of the microscopic, the humble, the low, the dirty, and symbolized by the ground, 'chão'. However, we remark in Barros a subversive and ironic charge that has no correspondence in HPX since Ondjaki's verses reflect the posture of absorbed observation and introspective emphasis reminiscent of Barros's

[1] The quotes in this paper are taken from the 2011 edition reported in the References (ONDJAKI, 2011a).

mature and final phases. The selection of vocabulary belonging to the semantic domains associated with the marginal, the low, the tiny, and the absence of capital letters serve this component of poetics;

(B) *Childhood as a privileged* locus *of knowledge*, associated with memory, autobiographical contexts, and play; strategic in this respect is the insertion of language play and lexicon recalling children's play;

(C) *Poetry as an instrument of knowledge and understanding of the world*, and writing poetry as a means of self-discovery, from which repeated references to teaching and learning arise.

Manoel de Barros insists on the didactic function of poetry, seen both as a learning path for the poet – who can reach the state of being thing through the word – and as a tool for disseminating good practice, teaching the reader to be close to the ground, spreading the message of his poetry, that has the potential to shake the foundations of a society dominated by false values and bring people back into contact with themselves, redeeming humanity to a new happiness. Learning comes through a corporeal experience of the world:

> As plantas
> me ensinavam de chão.
> Fui aprendendo com o corpo. (BARROS, 2010: 115)

It is relevant to note that Ondjaki clarifies to the reader the centrality of 'learning' in an annotation placed as a comment on HPX's epigraph, explaining some aspects already introduced by the title of the book: "aprendizagem é a palavra que, ela sim, ramifica e desramifica uma pessoa; (...) aprendizar não é repessoar-se?" (HPX: 5).

In both poets, the poetic quest is conceived in ontological terms; nevertheless, we recognize in Barros the presence of the poet-prophet and the projection of the didactic dimension towards the reader, as well as in an autodidactic function, while Ondjaki's attitude is closer to that of the disciple and the indications related to learning are essentially self-referential. In HPX, the perspective of the process from the point of view of the learner is therefore emphasized, as evoked by the sequences of instructions – expressed through constructions of final value (such as '*para* + infinitive') and exhortations ('há que + infinitive'; "seja") – and by references to the discoveries achieved, in the form of definitions and as a consequence of the insisting use of the verb '*saber*'. Self-referentiality is demonstrated by the abundant use of first-person singular oblique/ reflexive pronouns and by the alterations in the degree of transitivity of the verb.

(D) tension towards communion with entities and things of nature, which results in the *semantics of metamorphosis*: in Manoel de Barros's conception, transfiguration represents the ultimate conquest of the apprenticeship process and the utmost poet's goal; in HPX, we do not find the presence of a definitive stage to which the author aims and the transformation is seen as part of a process that takes place according to indefinite time and unspecified routes. On a linguistic level, the literary language modeled by Ondjaki is marked by derivational neologisms and recurrent use of word blending, uncommon in barrosian poetry, with the coining of a high number of portmanteau words;

(E) *Orality* as a fundamental referential. Both Barros and Ondjaki give emphasis to the organization of a literary language that reflects the authenticity of the spoken language, composing verses that feature colloquialisms, idiomatic expressions, and grammatical deviations. The scope of the impact of orality in Ondjaki's writing is out of the ordinary, though, and sinks its roots into African traditions, configuring the main lines of his poetic discourse. The lexicon of orality and the use of textual genres that recall traditional storytelling open the text to a dimension in which invention and imagination do not emerge in contradiction with facts, like fabrication, but intervene to expand and enrich reality;

(F) What has been stated in the previous point regarding orality is linked to the *questioning of the discrepancy between fiction and reality*. Both Barros and Ondjaki love to escape from labels, cultivating in their texts and interviews a taste for doubt and for puzzling what is considered the 'truth', a valid and objective fact, considered by the two poets as a limiting constraint. Both employ strategies to destabilize the reader and thus allow the initial rupture of the *status quo*, the consolidated and commonly accepted narrow vision of the surrounding world. Overcoming the barrier between fiction and reality presents fascinating effects in terms of the relationship between reader and literary work; a significant example is the way of dealing with paratextual elements. The poems of Manoel de Barros embrace the paratext by exploiting the hybridity of textual genres for the purposes of constructing meaning, with a movement that brings the paratext from the outside to the inside of the verse; this strategy contributes to the characterization of the poems as anti-academic and is functional to the deepening of the polemical and ironic implications of the Barrosian discourse. Ondjaki's poetic texts, on the other hand, transgress the boundaries of the poem to invade the paratextual components of the book, generating a movement in the opposite direction, from inside to outside, resulting in paratext contaminated by poetry; this leads the reader to question his beliefs

regarding the structure of the book and what within it should be considered 'poetry', problematizing the concept of objective truth.

The lines presented in (E) and (F), and to some extent in (B), converge his 'poetics of estórias'. Ondjaki writes in the book of short stories *Momentos de aqui* (2001):

> Depois sim, vieram as estórias.
>
> Eram tantíssimas. Eu era uma própria estória em movimento. Acusavam-me: você inventa...! Minha desatenção no escutar desembocava em meus aumentos no contar. Minha avó sorria, ela me estava a espreitar essa mania.
>
> E eu mesmo gostava de fazer colagens das estórias dos mais velhos – meu barro prematuro. (ONDJAKI, 2001: 9)

On several occasions, the writer refers to the practice of augmenting reality through imagination as a phenomenon typical of everyday life in Luanda. He declares in an interview: "Luanda é uma cidade onde as pessoas são viciadas em histórias, de inventar e contar, mais do que escrever" (ONDJAKI, 2014), and further explains in another occasion:

> Eu sou uma pessoa que gosta muito de estórias, eu sempre gostei de ouvir estórias… e de contar também, acho que foi a partir dessa oralidade das estórias que eu cheguei à escrita, que eu comecei a escrever contos (…) eu cresci em Luanda e Luanda é uma cidade cheia de estórias tu não consegues combinar uma coisa com uma pessoa, se a pessoa chega atrasada em vez de simplesmente se desculpar a pessoa vai contar uma estória, normalmente vai inventar uma estória… normalmente a própria realidade em Luanda escreve melhor do que os escritores... que os escritores é que seguem a realidade tentando entender um pouco de como é que poderão trazer essa realidade às estórias… o povo angolano é um povo que sofreu muito por várias razões, a guerra, outras privações, mas nunca perdeu essa capacidade de sonhar (...)
>
> É verdade que o que comanda a minha escrita são as estórias, e mesmo quando estou a escrever poemas eu quero contar estórias (ONDJAKI, 2009)

The art of "contar ou inventar estórias" (ONDJAKI, 2001: 82) is therefore experienced and presented by Ondjaki as culture-specific, as a peculiarity of the inhabitants of Luanda and of the Angolan people. In the preface to Ondjaki's *Momentos de aqui*, the Mozambican writer Mia Couto identifies childhood as the inaugural moment in which oral narration and imagination begin their visits: "Esta dependência da fabulação mergulha sempre na infância. Este desejo de escrever não na página mas na própria voz (...) Esta visitação aos muitos que somos, às múltiplas dimensões da nossa existência" (COUTO, 2001: 13).

We identify the core lines of Ondjaki's poetics with orality and the expansion of reality in a playful way, which in HPX are combined with the dense correspondence with the poetic universe of Manoel de Barros, emerging in key elements associated with: the ground and the marginalized, minor beings that populate it; childhood and the ability to marvel at the little things and small gestures of everyday life; poetry as an instrument of knowledge and understanding of the world and of personal maturation, sublimated in metamorphosis. All this finds expression in a literary language that translates the architecture of the Angolan writer's poetics with a distinctive voice.

IV. *Há Prendisajens Com O Xão – O Segredo Húmido da Lesma & Outras Descoisas* (2002)

The work, Ondjaki's second poetic book, includes twenty-five poems interpolated from four poetic prose texts and followed by an appendix containing four texts, two of which are glossaries, one is a comment about a 'special guest' and one is an author's note. Under what has been stated in (F), however, we should list in the complete composition of the book the epigraph, which comes with an accompanying note-comment by the author, and the acknowledgments, written in the form of a poem, for a total of thirty-five texts.

The destabilizing action toward the reader begins in the title, containing references that immediately project the work into a dialogue with Barros's poetry and bind it to one of the cornerstones of his poetics: the progressive communion with the ground and its inhabitants. Coming into contact with the ground is a goal that can only be achieved with constant and systematic application, observing the essence of what surrounds us; in the contemplation of insects, snails, stones, the human being discovers that he is an infinitesimal part of this world, to which he renders in total abandonment becoming himself stone, animal, soil. The discovery of this profound communion moves and conquers Ondjaki, who is intimately marked by reading Barros's verses.

It is not wonder that the connection with the Brazilian poet is already established in the title; Ondjaki stated in a conference held in October 2022[2] that he has always been fascinated by the titles given by Manoel de Barros to his works and this admiration shines through in the title of HPX. In *Há prendisajens com o xão – o segredo húmido da lesma & outras descoisas*, we find a wordplay produced through the division and alteration of the noun "*aprendizagens*" in the syntagmatic formation "*Há prendisajens*", which produces the double-reading phrase "*Há prendisajens com o xão*" – "learnings with the ground"/ "firm grips on the ground are occurring". The orthographic alteration of "*chão*" into "*xão*", without modifying the phonetic level,

[2] ONDJAKI, Lectio Magistralis "A Literatura e a História de Angola: os caminhos pós-coloniais", 21 Oct 2022, University of Salento, Italy, unpublished.

intervenes as a dissonant element that causes the reader to abandon the automatic reading of the title to stop and reflect on its meaning, marking the progression of the rhythm appropriate to the reading of HPX right from its cover. The subtitle adds two other focal points of Barrosian poetry.

The '*lesma*', the slug, represents a key element as a minor and often despised being, an inhabitant of the soil that moves through intimate corporeal contact with the earth, leaving a luminous trail, writing with its body:

> LESMA
> Caracol é uma casa que se anda
> E a lesma[1] é um ser que se reside.
>
> *Nota 1:* A fim de percorrer uma lesma desde o seu nascer até sua extinção, terei que aprender como é que ela recebe as manhãs, como é que ela anoitece. (...) Terei que produzir em mim a gosma dela a fim de lubrificar os caminhos da terra. (...) Terei de aprender a marcar com a minha saliva o chão dos poemas. (BARROS, 2010: 371)

Descoisas represent the objects that emerge transfigured from poetic writing: Barros's verses prefer beings and things that are considered insignificant in everyday life and redeem them through the power of imagination. Writing poetry for Barros means "*desinventar objetos*" (BARROS, 2010: 300), and the significance of the creative process is summarized in the semantics of the prefix *des-*, subverting the ordinary meaning attributed to the word to which it is applied.

Leafing through the first pages of HPX, you come across the epigraph, taken from *La quête intermittente*, by Eugène Ionesco. The initial part seems to be directly connected to what Ondjaki stated in an interview about poetry, contradicting it ("Eu realmente tenho dificuldade em entender a poesia que escrevo, ou as razões por que o faço"; ONDJAKI, 2013).

> Digo, apesar de tudo, a sós comigo:
> sei porque escrevo [...]
> Amanheceu. O mundo é verdade.
> Sim, sim, é palpável. (ONDJAKI, 2011a, p. 5)

The quote refers to the quest for actual knowledge of the world, generating a tension between affirmation and denial, which acquires further complexity if we consider that, in the original text, Ionesco completes by asserting the inscrutability of the world:

> 4.IX.1986
> Il fait jour. Le monde est vrai. Oui, oui, c'est palpable.
> L'illusion n'est pas mensonge, n'est pas tromperie, n'est pas de la non-réalité!?
> Seulement, le monde est fait de façon incognoscible. (IONESCO, 1987: 125)

Immediately following, on the same page, is the author's annotation:

> *também:*
>
> aprendizagem é a palavra que, ela sim, ramifica e desramifica uma pessoa; ela enlaça, abraça; mastiga um alguém cuspindo-o a si mesmo, tudo para novas géneses pessoais. estas palavras são, elas sim, para pessoas que se autorizam constantes aprendicismos, modos maneiras. viveres. até sangues. aprendizar não é repessoar-se? (HPX: 5)

In this comment about the word, Ondjaki develops a movement of thought: learning leads people along new trajectories, transforming them, drawing them in contact with their humanity through continuous abandon to change. The transfiguring potential of this process is rendered at a lexical level by forming pairs of words, as is the case of the combinations *enlaça/abraça*, *modos/maneiras* and *pessoas/repessoar-se*, and above all of *aprendizagem/aprendicismos* and *ramifica/desramifica*, obtained by prefixal/suffixal derivation. The semantic domain of learning also stands out as a consequence of the creation of two neologisms by suffixal derivation: the noun *aprendicismos* and the verb *aprendizar*; the comparison with the other two neologisms identifiable in the text, *desramifica* and *repessoar-se*, highlights the exceptional nature of the learning process to which Ondjaki refers, allowing the learner to experience a life out of shared experience and capable of changing us profoundly.

The acknowledgements mention Manoel de Barros twice: the first time in relation to the Angolan poet Ana Paula Tavares, who gave Ondjaki "um manoel de barros para eu viajar" and a second time when he is identified as a master: "manoel de barros – distante, me ensinou a tanta / importância do chão: que deve ser promovido" (HPX: 6). The opening poem of the book ("Chão") is still dedicated to Manoel de Barros as well as the text that closes the work, a "Nota do autor" in which Ondjaki refers to a letter written by Barros and containing his opinion on the work: "Há em você a consciência plena de que poesia se faz abandonando as sintaxes acostumadas e criando outras. São as palavras que guardam a poesia não os episódios. Palavra poética não serve para expressar ideias – serve para cantar, celebrar" (Ondjaki, 2008: 67).

Manoel de Barros is thus a fundamental reference, openly accredited by Ondjaki, and a background note in all the texts that compose HPX. The work on language through the deviation from the usual and the configuration of new principles is undoubtedly an aspect of convergence with Barros and one of the salient characteristics in Ondjaki's poetic work. In the next paragraph, we illustrate the most recurring aspects in the work to spotlight the regularities of HPX's literary language.

V. The Literary Language of *Há Prendisajens Com O Xão* (2002)

We expose below the specificities of the literary language organized by Ondjaki in HPX, focusing particularly on neologisms, traits of orality and spoken

language, language play, syntactic peculiarities, and characteristics of the style that strengthen orality in the text. We present examples to show the results of Ondjaki's language manipulation.

a) Neologisms

The most striking feature in HPX's literary language is the high number of neologisms, which include blends, compound words, and neologisms derived by affixation, prefixation, and parasynthesis. Although the increased use of neologisms is a meeting point with Barros's poetry, we distinguish some peculiarities of Ondjaki's writing.

First of all, the frequent use of blends, mostly nouns, obtained from the union of key terms from the poetic lines commented above with the effect of generating portmanteau words; blends with minimal alteration and compound words are more limited in number.

(1) emochões (HPX: 8) emoção (*sing.*) + chão
(2) chãotoria (HPX: 9, 48) chão + oto- + (sabed)oria; *also:* chão + autoria (HPX: 47)
(3) existenciações (HPX: 12) existência + ações
(4) formigabiríntico (HPX: 12) formiga + labiríntico
(5) sanguenhecer-me (HPX: 13) sangue + conhecer
(6) lágrimaterrizagem (HPX: 16) lágrima + aterrizagem (or also: a- + terra + aprendizagem)
(7) lacrimealeijar (HPX: 16, 46) lacrimar + aleijar
(8) palhintimidade (HPX: 20) palha + intimidade
(9) percursação (HPX: 20) percurso + ação
(10) passipiência (HPX: 20) pássaro+sapiência
(11) resultacto (HPX: 21) resultado + acto
(12) voolêncio (HPX: 21, 42, 46) voo + silêncio
(13) repensação (HPX: 22) repensar + ação
(14) pulantas (HPX: 22) pular ou pulante + planta(s)
(15) borboletabirinto (HPX: 33) borboleta + labirinto
(16) inventoado (HPX: 33) inventado + à toa
(17) visgadeira (HPX: 34) visco + madeira
(18) florquestração (HPX: 38) flor + orquestração
(19) lentadinosa (HPX: 42) lento + libidinoso
(20) helibélula (HPX: 42) helicóptero + libélula
(21) mundhumana (HPX: 46) mundo + humana
(22) noitidia (HPX: 47) noite + dia
(23) todiqualquer (HPX: 42) todo + qualquer
(24) péspezinhadas (HPX: 43) pé + espezinhar
(25) supremaproximação (HPX: 33) suprema + aproximação
(26) gargantadentro (HPX: 7) garganta + dentro
(27) maiorinterna (HPX: 22) maior + interna
(28) péafagadas (HPX: 47) pé + afagadas
(29) chão-cheiro (HPX: 12)
(30) aqui-margem (HPX: 35)
(31) castanho-raiz (HPX: 30)
(32) cinzento-nuvem (HPX: 30)
(33) criança-calema (HPX: 41)
(34) cesto-sentido (HPX: 46)

Derivational neologisms in HPX are formed by prefixation, suffixation, and parasynthesis; the procedures are similar to those observed in Barros (DEGLI ATTI, 2023). However, we note the absence of neologisms for transcategorization (zero derivation), while grammatical category shifts are productive through derivation by suffixation, resulting predominantly in denominal verbs and deverbal nouns; we also observe the regular occurrence of parasynthetic neologisms.

The neologisms derived by prefixation demonstrate the propensity for the use of the prefix 'a-', which represents a distinctive feature in Ondjaki's verses, as also shown in parasynthetic formations. It is a prefix that can have different meanings, even antithetical; according to the *Novo Dicionário Aurélio da Língua Portuguesa* (2009), such meanings include distancing, separation, denial, excess, intensity, approximation, direction, and transformation (FERREIRA, 2009). It is interesting to note that it can also represent a prothetic element, added for euphony needs, without the interference of meaning or with a strengthening effect, a trait that leads to associating the prefix with the sphere of oral expression, the relevance of which for the poet we have already discussed.

The polysemy of the prefix 'a-' reverberates in the verses, amplifying the semantic domain of reference composed by the author and revealing its complexity. Taking into consideration (51), extrapolated from: "essa estória não era verdadeira, mas de tanto acreditar nela, a coisa se revoltou para averdades", we can note how the affixing of the prefix adds connotations that refer to transformation and intensity, while also exploiting the implicit play on the potential meaning of separation and denial. Prefix 'a-' therefore intervenes to problematize the reader's automatic decoding, and its widespread presence in the text refers to the architecture of the poetic project underlying HPX, which shows its functioning in the construction of meaning through the semantic stratification that revolves around seeking knowledge of the surrounding world.

Table 1: Derivational neologisms

Prefix derivation	*α-* (35) companheiro barbosa / me atraz novidades (HPX: 8) (36) o mais certo apastoreiro! (HPX: 8) *subst.* (37) o grilo aquieto (HPX: 8) (38) para acontar-me (HPX: 11) (39) picos achuviscados (HPX: 13) (40) prescrevo assilêncios (HPX: 13) (41) em continuado aquestionamento (HPX: 16) (42) apalmilhar um quintal (HPX: 18) (43) existe palhintimidade / num aninho? (HPX: 20) (44) simples janela arredonda (HPX: 20) *adj.* (45) o mosquito voa acontrário (HPX: 21) (46) acontrário do escrevinhado / mundo (HPX: 38) (47) Aminúsculo (HPX: 47) (48) repletos de aminúsculo (HPX: 21) (49) domina o aminúscolo (HPX: 42) (50) num gritar aprofundo (HPX: 22) *adj.* (51) a coisa se revoltou para averdades (HPX: 22b) (52) já ninguém sabia de viver sem assoluçar (HPX: 23) (53) olhares aquietos (HPX: 23) (54) em arretorno (HPX: 29) (55) aviragem (HPX: 34) (56) para não ficar alongínquo (HPX: 34) (57) a viagem me adesculpe (HPX: 34b) (58) em função de arreciclo (HPX: 38) (59) fogo aquece. aderrete. aqueima. (HPX: 38) (60) para aprofundo tacto (HPX: 38) (61) poder apastoreiro do grilo (HPX: 41) *adj.* (62) por afim (HPX: 41) (63) Aterminação (HPX: 41) (64) atentáculos (HPX: 44) *des-* (65) des-ser-me (HPX: 7) (// descer) (66) adescaem (HPX: 10, 38) (67) despalavrear; despalavreação (HPX: 16, 47) (68) desnoção/desnoções (HPX: 18, 42) (69) desanonimato (HPX: 18) (70) desinstante (HPX: 20, 47) (71) desamor (HPX: 22) (72) desconto-lhe (HPX: 23) (73) desressequir (HPX: 32) (74) desmiragem (HPX: 34) (75) desmissão (HPX: 34) (76) desegoísta (HPX: 41) (77) desmultiplicação (HPX: 46) (78) descair (HPX: 46) (79) desaprendizagem (HPX: 47) (80) desmomento (HPX: 47) (81) desestado (HPX: 47) *others* (82) enquerendo (HPX: 19, 22, 23, 42, 47) (83) ensendo fio de cabelo (HPX: 19) (84) embatendo com levezas (HPX: 35) (85) enchegada a hora (HPX: 39) (86) irrisonha (HPX: 16) (87) implumagem (HPX: 34) (88) trans-sensações (HPX: 32) (89) biolabirinto (HPX: 15)

Suffix derivation	(90) poucochinho (HPX: 7) (91) passarada (HPX: 20) (92) solucência (HPX: 23) (93) cimentagem (HPX: 34) (94) madeirume(s) (HPX: 36, 46) (95) orvalhamento(s) (HPX: 38, 39) (96) orvalhação (HPX: 39) (97) geadação/geadações (HPX: 38, 39) (98) geadamento (HPX: 39) (99) concupiscio (HPX: 11) (100) juntalizei (HPX: 35)
Suffix derivation with grammatical category shift	*noun > verb* (101) as estrelas grilaram-se (HPX: 9) (102) de tanto grilar seus sons (HPX: 42) (103) uma estrela grilada (HPX: 46) (104) ursos linguam potes (HPX: 10) (105) grilos estrelam-se (HPX: 10) (106) eu libelulizo-me (HPX: 10) (107) a mandioca tuberculiza o chão (HPX: 15) (108) de tanto risar tanto (HPX: 16) (109) gentifica a arve (HPX: 19) (110) o pássaro discipulou-se ao sapo (HPX: 20) (111) narcisar-se (HPX: 26) (112) estava aguar-se (HPX: 35) (113) o mundo pescoçando-se (HPX: 39) (114) para existenciar-se (HPX: 41) (115) saudadeando-me (HPX: 46) *verb > noun* (116) enternecitudes (HPX: 8) (117) ouvitudes (HPX: 8, 41, 46) (118) desfalecências (HPX: 8) (119) ouvimentos (HPX: 11) (120) espreitações (HPX: 16) (121) aclarão (HPX: 38) *subst.* (122) encaminhação (HPX: 38) (123) iluminossílabos (HPX: 43) (124) explicamento(s) (HPX: 34, 46) *adjective > verb* (125) infinituar-me (HPX: 37) (126) nuar (HPX: 38) *adjective > noun* (127) molhadezas (HPX: 32) *noun > adjective* (128) goticulares (HPX: 16) *verb > adjective* (129) brincalhoso (HPX: 35)

parasynthesis	*α-* (130) raposas agalinham-se (HPX: 10) a- + galinha + -am [-ar] (131) estrelas agrilam-se (HPX: 10) a- + grilo + -am [-ar] (132) acontinenta o galho (HPX: 19) a- + continente + -a [-ar] (133) aburacações várias (HPX: 12) a- + buraco + -ções [-ção] (134) apulgo-me (HPX: 13) a- + pulga + -o [-ar] (135) bitroncalizo galhos (HPX: 13) bi- + troncar + -izo [-ar] (136) a folha (...) acontinenta o galho (HPX: 19) a- + continente + -a [-ar] (137) *como se* amosquitadamente (HPX: 21) a- + mosquito + -ado + -mente (138) momento assoluçado (HPX: 23) a- + soluço + -ado (139) saltitados assoluçamentos (HPX: 23) a- + soluço + -mento (140) beijo alinguado (HPX: 33) a- + lingua + -ado (141) assinonima-se (HPX: 34) a- + sinônimo + -a [-ar] (142) me acandeeirem (HPX: 34) a- + candeeira + -em [-ar] (143) avomiterações (HPX: 34) a- + vomitar > vomiterar + -ções [-ção] (144) agalinhamentos (HPX: 44) a- + galinha + mento(s) *others* (145) despalavreação (HPX: 16) des- + palavrear + -ção (146) desrespeitamento (HPX: 35) des- + respeitar + -mento (147) engolfinham-se (HPX: 10) en- + golfinho + -am [-ar] (148) entunam-se (HPX: 10) en- + tuna + -am [-ar] (149) sub-hienado (HPX: 16) sub- + hiena + -ado

b) Traits of orality and spoken language

The features of spoken language appear as a varied set of elements that include metaplasms (150-153), colloquial expressions (154-156) and spoken structures such as '*estar* + infinitive' (157-162), pseudocleft and reduced pseudocleft constructions (163-168), sentences with synthetic formulation and/or suppression of elements for communicative economy (169-172). We also report a case of alteration of concordance (173).

(150) prendisajem (HPX: 15)
(151) lém de nossa vizinha (...) lém de transpirar (HPX: 19)
(152) lém de com sua respectiva mosquita (HPX: 42)
(153) arve (HPX: 19)
(154) a modos que quintal (HPX: 18)
(155) a pontos que atómico (HPX: 46)
(156) ah pois e sim? (HPX: 8)
(157) estou pedir a cegueira… estou pedir me acandeeirem… estou pedir essa desmissão (HPX: 34)
(158) estava aguar-se (HPX: 35)
(159) estão requerer voltar (HPX: 35)
(160) estou procurar coisas (HPX: 44)
(161) mundo está isolar pessoas (HPX: 47)
(162) este homem está falar verdades (HPX: 41)
(163) pois tinha era que fazer (HPX: 23)
(164) o poro da vela é que emite (HPX: 46)
(165) ela é que espera por nós (HPX:16)
(166) o grilo ganha é abraço com estrelas …. o grilo estreia é intimidade com a magia (HPX: 8)
(167) a hiena lacrimealeija é sementes (HPX: 16)
(168) para mim as flores servem é para alcatifar o mundo (HPX: 45)
(169) me perguntaram porquê de viajar em jangada (HPX: 34)
(170) mestre em tudo que acuse molhadez (HPX: 42)
(171) pedir alguém soluçasse (HPX: 23)
(172) querem ver os tronquinhos estão chorosos? (HPX: 35)
(173) bicha muita simples (HPX: 42)

Repetitions are among the characteristics that strengthen orality in the text, appearing in HPX on multiple levels, including:

- reduplication of the word, a phenomenon especially linked to Kimbundu, as in "quase-quase igual nela" (HPX: 23) and "logo-logo" (HPX: 27);
- consecutive repetition of words ("simples. simples.", HPX: 38; "simples, simples" HPX: 46; "difícil…, difícil…", HPX: 47), repetition of the word in the sentence ("de tanto risar tanto", HPX: 17), repetition of words or parts of words within other lexemes ("cessa o canto, o encanto", HPX: 9; "carochinha avoa voa", HPX: 10; "entorno enternecitudes", HPX: 8; "entornador de enternecitudes", HPX: 41; "cesto-sentido. (...) ou será ressentido?", HPX: 46; "terra prende. apreende", HPX: 39);
- alliteration: "para por paz" (HPX: 10), "ser sorrateiro" (HPX: 18), "desminando rebentamentos" (HPX: 18), "pata, patinha, patitas" (HPX: 20), "a passarada / faz passar ar" (HPX: 20), "para palavrear prosas" (HPX: 28), "para afastar teus tigres" (HPX: 28), "auto-entorná-lo cuidadosamente, / em arretorno de essências." (HPX: 29), "também atrai gotas" (HPX: 38), "alumeia. almeja. almofadeia", HPX: 38, "domina o dom alquímico nominado 'aminúsculo'", HPX: 42);
- anaphoric structures ("*folha* é parede verde / (...) / *folha* é uma outra narina (...)", HPX: 15; "seja ruído / seja beijo / seja voo / seja andorinha (...)", HPX: 30; "e quinto: (...) / e mim: (...) / e guante (riso): (...)", HPX: 34; "*como se* adormecidamente. / (...) / *como*

se antecipadamente / (...) / *como se* amosquitadamente.", HPX: 20; "*sei*: / (...) / *sei:* ", HPX: 22; "mundo está (...) / mundo está (...) / mundo está", HPX: 32; "quero só / o silêncio (...) / quero só / o silêncio (...)", HPX: 37; "vento é (...) / vento é (...) / vento é (...)", HPX: 38; "terra (...) / terra (...) / terra (...) / terra (...)", HOX: 39) e ripresa di versi con variazioni ("para paz / (...) / para repaz", HPX: 13; "para ser um ser / (...) / para voltar a ser um ser", HPX: 29);

– syntactic parallelism ("libélulas avoam danças / aranhas cospem tranças; / morcegos ralham noites / ursos linguam potes; (...)", HPX: 10; "a folha / enquerendo ser lago / acontinenta o galho / o galho / ensendo fio de cabelo / gentifica a arve (...)", HPX: 19; "borbulha – é um resultacto de fornicação. / comichão – é um sémen denunciando solidões", HPX: 20);

A parallel structure is also exploited in two of the four prose texts inserted among the poems, "estória para wandy" and "estória para lueji", which present the same story narrated from two different points of view. The two texts show elements of the fairy tale genre and characteristics of the story performed orally, with direct interaction with the reader, reconstructing the atmosphere of the story narrated by the griot and of the social and ritual experience of storytellling: "quero dizer-lhe: muito mais velhos começam assim uma estória: "quero dizer-lhe: muito mais velhos começam assim uma estória: 'era uma vez…', nós começaremos em mais crença: é uma vez uma menina uma menina que sabia uma estória." (HPX: 22).

The reconstruction of oral interaction is sought through the use of punctuation and by addressing the reader directly throughout the work ("mas!, essa, difícil…, difícil…", HPX: 47; "mas!, o segredo:", HPX: 20; "quero dizer-lhe:", HPX: 22; "se não me põe crenças, queira explicar:", HPX: 22, 23; "– desconto-lhe esse segredinho –", HPX: 23; "[enquerendo conhecer a outra vertente desta estória, procure lueji]", HPX: 22, "[enquerendo conhecer a outra vertente desta estória, procure wandy]", HPX: 23).

Characteristics of Angolan Portuguese emerge in the texts in a limited but significant way: in addition to the word reduplication mentioned before, we point out the presence of words of Kimbundu etymology, such as the noun "soba" (HPX: 11), which indicates the tribal chief, or the verb "xinguilar" ("xinguilar-me em cócegas", HPX: 13) to indicate a 'state of trance', from "(ku)xingila", and the use of the oblique pronoun 'lhe(s)' in place of direct object pronoun (174-178):

(174) a margem não aperta o rio, antes beija-lhe (HPX: 35)
(175) ouvindo-lhe parafrasear (HPX: 41)
(176) pode lhes adormecer (HPX: 42)
(177) lhe abocanhe (HPX: 46)
(178) como lhe chamei (HPX: 50)

Orality is also linked to the author's utilization of phonosymbolism, with particular reference to the association of the postalveolar fricative [ʃ] with the semantic domain of the ground ('*chão*') and the palatal nasal [ɲ] with the semantics of knowledge ('*conhecer*'). These associations operate by interpolation in the formation of words to increase the semantic layers of the words, as happens in "poucochinho" (ex. 90), which combines the semantics of the minor and the ground, or in "sanguenhecer-me" (ex. 5), which associates physical pain and self-knowledge, or again in "chãonhe-ser-me" (ex. 180), in which the sphere of the ground and that of knowledge are merged.

Finally, we record the inversion of noun and indefinite adjectives, with an emphatic effect that suggests a pause in the rhythm, once again recalling performed storytelling ("é missão para uma toda vida", HPX: 22; "essa toda gente veio falar", HPX: 22; "o todo universo se soluça constantemente", HPX: 23; "em cegueira chegou-te uma tanta vida", HPX: 28).

c) Language play

Language play in HPX combines ludic elements that refer to childhood and linguistic manipulation and includes puns, wordplays obtained by word division into syntagmatic formations, and transformation by analogy through lexical blending or substitution.

Syntagmatic formations (179-184) are obtained by breaking a word into syntagms to get homophone or pseudo-homophone expressions for the source word, playing on the polysemy created by the layering of new meanings on the semantic traits of the original word. This intriguing technique, not frequent in Manoel de Barros (an example is "tuiuiú" > "tu-you-you", BARROS, 2010: 341), occurs on several occasions in HPX; the relevance of this type of wordplay is demonstrated by its use in the title of the book.

(179) arre e pio-me (HPX: 8, 34) > arrepio-me
(180) chãonhe-ser-me (HPX: 7) > conhecer-me
(181) des-ser-me (HPX: 7) > descer-me
(182) há prendisagens (HPX: 1) > aprendisagens
(183) Arve Jánãoélógica (HPX: 19) > genealógica
(184) Quinto Mim Guante (HPX: 34) > minguante

Of a more playful nature are the manipulations of names that exploit analogy, forming new terms following the patterns of the source words but with interferences introduced by the transformation. Thus, for example, (185-186) are re-created respectively after Dom Quixote de la Mancha and Grande Sertão: Veredas and the names of the masters honored by Ondjaki refer to them as salient characteristics: writing in prose (187) and the preference for short fiction (190), the poetics of the soil and the dirty, 'sujo' (188), the city of Luanda/Luuanda (189).

(185) dom passarote da avoança (> Dom Quixote de la Mancha)
(186) grande passarão: peneda (> Grande Sertão: Veredas)

(187) guimarães prosa (Guimaraes Rosa)
(188) manoel de barro (Manoel de Barros)
(189) luuandino vieira (Luandino Vieira)
(190) mia conto (Mia Couto)

Another type of pun (191-195) is based on the associations evoked by the morphemes that make up a word, exploring deviations in meaning based on false etymologies, or providing explanations on the etymology of words that compose neologisms:

(191) existe o piar do pio? (HPX: 20)
(192) a passarada / faz passar ar / ou passeia no ar? (HPX: 20)
(193) visgadeira é o visco de recolocar madeira (HPX: 34)
(194) *nuar* / (que não é só estar para nudezes mas ainda ser nu) (HPX: 38)
(195) *chãotoria*: quando encostando ouvido no chão (...) ouve-se uma ópera-de-chão, à qual também se chama chãotoria. (HPX:47)

Even the repetitions, a constitutive specificity of HPX, contribute to language play, especially through the repetition of elements with inversion of the suffixes, as in (196) and (197):

(196) rios na madeira para aquecimento de ouvidos (...) cócegas na árvore para aquecidos ouvimentos (HPX: 11)
(197) geadações e orvalhamentos (...) orvalhação e geadamento (HPX: 38-39)

Youth and carefree play are also recalled by the reference to tickling and laughter ("cócega", "comichão", "riso/risada") and by the extensive use of diminutives (among others: "poucochinho", "corridinhas", "distanciaçãozinha", "patinhas", "patitas", "segredinho", "farpinhas", "madereinhas", "tronquinhos", "barulhinhos", "sorrisinhos", "segundinhos").

Childhood also echoes in questions of curiosity and discovery, as in the poem "Mas existe?", and in the tone of complicity that is established in the verses ("mas! o segredo:", HPX: 20; "– desconto-lhe esse segredinho –", HPX: 23).

d) Syntactic deviation

From the point of view of syntax, in addition to the features highlighted for the spoken language (see 5.2.), we find a peculiar use of the prepositions 'para' and 'de', alterations in the degree of transitivity, and an overabundance of first-person singular oblique/reflexive pronoun.

The prepositions 'para' and 'de' are widespread, helping to summarize key concepts in just a few words. 'Para' can have the meaning of: direction towards; proximity, being about to; concerning; capacity, adequate to; intention; utility, for the benefit of; for the purpose of (HOUAISS, 2001):

(198) me reacordou para a poesia (HPX: 6)
(199) engolir-me para mim (HPX: 7)
(200) as estrelas grilaram-se para sonos (HPX: 9)
(201) desconhecimento para egos (HPX: 12)
(202) aburacações várias para laboriosas existenciações (HPX: 12)
(203) furo peles para o chão sanguenhecer-me (HPX: 13)
(204) folha é parede verde para sol chegar (HPX: 15)
(205) o suicidado foi um apressado/para desconhecimentos (HPX: 16)
(206) sementes para flores salinas (HPX: 16)
(207) enraizado para espreitações (HPX: 17)
(208) sementes para flores salinas (HPX: 17)
(209) ser folha é nem sempre estar para sol (HPX: 19)
(210) o pássaro / ganhou enjoo para chão? (HPX: 20)
(211) a coisa se revoltou para averdades (HPX: 23)
(212) espelho para céu narcisar-se (HPX: 23)
(213) vou fingir-me para doenças (HPX: 34)
(214) eu desaguava também para rios? (HPX: 35)
(215) tendência para ferrugem (HPX: 35)
(216) não é só estar para nudezes (HPX: 38)
(217) um bicho apetece-se para dizeres (HPX: 38)
(218) tem vontade para risos (HPX: 44)
(219) ganha dependências para a sede (HPX: 44)

In the recorded occurrences, the use of prepositions can intervene to alter the syntax, as in (201), (210), (213), and in many cases, it can contain more than one meaning; for example, in (198) the preposition can express both the meaning of 'direction' and 'being ready' or 'adequate to', while in (204) it can mean 'being adequate to', 'being ready to' or 'about to', or even 'have the purpose of'. In the juxtaposition of the meanings of displacement, purpose, and function, 'para' summarizes transformation, and change of state in a meaning close to that of the construction 'estar para + noun/infinitive' (as in ex. 216), whose meaning is 'being on the verge of' (HOYOS, 1980), also intensified by the presence of the expression 'a ponto de' ("a ponto de cócegas mútuas", HPX: 31; "afogar-se a ponto de âncora", (HPX: 38): in the advancement of existential research through poetry, metamorphosis, the "repessoar-se" (HPX: 5) opens a new cycle of research, marking the stages of a path that is completed precisely by its incompleteness, since there should be no limit to the individual's capacity for change and regeneration through poetry. In this ceaseless transfiguration, the role and function of the individual and the entities involved are reconfigured in the ramifications and re-personifications that the writing process allows, in that multiplication of the experience suggested by Couto (2001), and symbolized in Ondjaki's HPX by the form of a labyrinth ("borboletabirinto", "formigabirintico", "biolabirinto").

The semantic sphere of function and purpose observed in relation to 'para' is also reiterated through the preposition 'de', among whose various meanings we stress for Ondjak's discourse: instrument, way, means, cause, purpose, possession:

(220) chão de ser cera (HPX: 35)
(221) flores de sacudir sal (HPX: 38)
(222) ponte de levar pessoa (HPX: 46)
(223) agua rara de ser ingerida a contar as gotas (HPX: 29)

(224) visco de recolocar madeira (HPX: 35)
(225) grita de estar sozinho (HPX: 46)

The preposition also occur with different functions in sentences like: "pode acrescer de uma vida" (HPX: 16), "fui revisitado de vozes" (HPX: 34), "encarecem-se de espelhos" (HPX: 39).

We also report the more sporadic presence of the preposition 'a' in structures with syntactic deviation, as in "imitando-me ao morcego" (HPX: 23), in which both the preposition and the reflexive pronoun are superfluous, or in "você compromete-se a retornos" (HPX: 34), in which the preposition is followed by a noun, while the regency would require the presence of the verb. The same type of unfamiliar effect is obtained by using the noun to replace sentences, as is the case of the 'conjunction + noun' pattern in "em cima de mim enquanto chão" (HPX: 46).

Ondjaki's writing hence relevantly involves prepositions in the construction of meaning, contributing to the brevity of the verses and their semantic expansion: the insistence on a limited number of prepositions suggests their strategic use, which leads back to the conceptual sphere of function altered from the common conception to transformation.

A similar effect is produced through alterations in the degree of transitivity of the verb:

(226) libélulas avoam danças (HPX: 12)
(227) desorbito olhos / e reorbito-me luas (HPX: 13)
(228) íris desfalecendo humidades (HPX: 16)
(229) salivo sois (HPX: 13)

In the example above, the degree of transitivity of the verb has been increased, suggesting the flow of the action directly on the object. There are numerous cases in which the action or transformation expressed by the verb falls directly on the poetic subject, as evidenced by the extremely high occurrence of the oblique and reflexive pronoun of the first person singular 'me', both in standard syntax and in contexts of syntactic deviation.

(230) chovo-me folhas (HPX: 13)
(231) reorbito-me luas (HPX: 13, 48)
(232) afogueiro-me fumos (HPX: 13)
(233) chovo-me lágrimas / em sacudir de mins (HPX: 14)
(234) cuspir… gargantadentro (...) engolir-me para mim (HPX: 7)
(235) esculpir-me a barro (HPX: 7)
(236) atropelo-me por bichinhos (HPX: 13)
(237) imitando-me ao morcego (HPX: 27)
(238) fingir-me de adoenças (HPX: 35)
(239) exercitei-me de raiz,
(240) eu libelulizo-me (HPX: 10)
(241) apulgo-me (HPX: 13)
(242) em saudadeando-me (HPX: 47)
(243) infinituar-me (HPX: 37)
(244) na provação, soube-me (HPX: 16b)
(245) pensei-me (HPX: 42)
(246) chãonhe-ser-me (HPX: 7)
(247) sanguenhecer-me (HPX: 13)
(248) reatribuir-me a átomo (HPX: 7)
(249) arre e pio-me de silêncios (HPX: 8)
(250) banho-me de pingos (HPX: 13)
(251) xinguilar-me em cócegas (HPX: 13)
(252) chibatando-me de ventos (HPX: 13)
(253) compus-me de lamas. (HPX: 16b)
(254) vitimizei-me (HPX: 16b)
(255) assim revelei-me (HPX: 27)
(256) posso emprestar-me a cor do sol (HPX: 33)
(257) me acandeeirem (HPX: 34)
(258) refiz-me ao rio (HPX: 35)
(259) descansei-me (HPX: 35)
(260) afogar-me (HPX: 37)
(261) me iniciei nestas "prendisajens" (HPX: 42)

Cases (230-233) attest to the presence of the reflexive pronoun and direct object, while in (234-239), we observe syntactic deviations generated by the oblique complement; the lyrical subject of (240-243) is both the subject and the object of the verb denoting a change of state.

The selected examples illustrate the overabundant presence of the first-person singular pronoun that focuses on the lyrical subject as the protagonist of HPX.

VI. Conclusions

HPX is in a dialogic relationship with the poetry of Manoel de Barros: the book represents a tribute to the Brazilian master and it takes up key features of his discourse, both on the poetic level and in the linguistic processes activated for the construction of meaning. However, the analysis of the literary language of this work reveals elements that differentiate Ondjaki's poetic writing, making it exclusive.

We highlight in HPX the use of more radical techniques of language manipulation and language play, such as word blending, word division into syntagmatic formations, and alteration by analogy. Although the process of neological derivation is exceptionally productive in both poets, we note in Ondjaki the greater frequency of neologisms derived by parasynthesis and the formation of words with the prefix 'a-', by far the most productive in HPX, both in prefixation and parasynthesis neological formations. In contrast, in Barros the fulcrum of the poetics revolves around the prefix 'des-', less frequently occurring in HPX and referential connection to the Barrosian discourse. On the other hand, zero derivation neologisms (transcategorizations) are not recorded in HPX, whereas the process of suffixal derivation with grammatical class shift is a peculiar trait in both poets.

The processes of syntactic deviation are less frequent in Ondjaki's work compared to Barros. However, our analysis detected a remarkable use of prepositions, especially the preposition 'para', and alterations in the degree of transitivity of the verb, with particular reference to cases in which the action falls on

the lyrical subject. This feature demonstrates the different attitudes of the two poets: Barros seeks his answers in nature and, through its contemplation, dissolves himself to the point of being nature; Ondjaki, instead, engages in a quest of himself, directing the observation of external reality towards the goal of internal discovery. It is revealing that the book's opening composition, dedicated to Manoel de Barros and his *chão*, is devoted to this theme:

Chão

palavras para manoel de barros

apetece-me des-ser-me,
reatribuir-me a átomo.
cuspir castanhos grãos
mas gargantadentro,
isto seja: engolir-me para mim
poucochinho a cada vez.
um por mais um: areios.
assim esculpir-me a barro
e re-ser chão. muito chão.
apetece-me chãonhe-ser-me. (Ondjaki, 2002: 11)

The external world as the ultimate goal of annihilation of the self, in Manoel de Barros; the self as the ultimate goal in which to dissolve the experience of the external world, in Ondjaki.

Another central factor in HPX is orality, a dimension that embraces not only traits and constructions of the spoken language but also mechanisms and strategies of storytelling, with particular reference to repetitions and the reconstruction of the participatory dimension of narration. The immediacy of the interaction is also reflected in the different approaches to childhood and poetry. Whereas in Barros, we witness a reflective and absorbed writing in which childhood re-emerges recalled by memory beyond the indefinite space interposed by time, in HPX, youth is a manifestation of the present, as appears in the playful attitude towards verse. The imaginative power of the word permeates the border between reality and fiction in the poems, making it a fragile, insignificant barrier in the face of the potential of the world augmented by spontaneous creativity.

In Barros, the cancellation of the distance between fiction and reality is a side result of the search for coincidence between object and word, in a destructuring path that proceeds towards the reduction to the essential, also exploring the absence of word and the existential nothingness; on the other hand, Ondjaki offers a semantic expansion implemented by incorporating meaning by a process of addition. It is no coincidence that, according to what the author reported in the appendix to HPX, Manoel de Barros referred in his correspondence with Ondjaki to the presence of "exageros", exaggerations, in his work (HPX: 50). The tension towards overabundance that characterizes HPX's poems is also reflected in the dilatation of the formal space of the poetic text, which invades the paratextual elements, integrating them into the poetic project, exploring their potential in the construction of meaning and demonstrating how everything in Ondjaki flows into the conception of literature as a performing art.

In light of what has been said, we can see that the profound deciphering of HPX's literary language in its three-dimensionality as a linguistic-literary-cultural phenomenon demonstrates how the main lines of poetics are expressed in a language with its peculiarities. This language is intimately influenced by the dimension of orality, and is articulated in a dense network of correspondences organized at a linguistic level to activate the polysemy of the text, also through dialogue with the work of Manoel de Barros, configuring a unique work in the context of Ondjak's production.

References Références Referencias

1. BAGNO, M.; RANGEL, E. de O. (2005). "Tarefas da educação linguística no Brasil". *Rev. Brasileira de Linguística Aplicada*. V.5, n. 1, p. 63-81.
2. BALBONI, P.E. (2008). *Fare educazione linguistica*. Torino: UTET.
3. BALBONI, P.E. (2012). *Le sfide di Babele. Insegnare le lingue nelle società complesse*. Torino: UTET.
4. BALBONI, P.E.; CAON, F. (2015). *La comunicazione interculturale*. Venezia: Marsilio.
5. BALBONI, P.E. (2018). *A Theoretical Framework for Language Education and Teaching*. Newcastle upon Tyne: Cambridge Scholars Publishing.
6. CANDIDO, Antonio (2012). O direito à literatura. In: DE LIMA, Aldo et al. (org.). O direito à literatura. Recife : Ed. Universitária da UFPE, 2012, p. 12-35.
7. CAON, F.; SPALIVIERO, C. (2015). *Educazione linguistica, letteraria, interculturale: intersezioni*. Torino: Loescher/Bonacci.
8. COSSON, Rildo (2020). *Paradigmas do ensino da literatura*. São Paulo: Contexto.
9. COUTO, Mia (2012). As visitações de Ondjaki. (Preface). ONDJAKI (2001). *Momentos de aqui*. Lisboa: Editorial Caminho.
10. DEGLI ATTI, Francesca (2023). "Gramática e Agramática nella poesia di Manoel de Barros". *Lingue e Linguaggi*, n. 56 (2023), p. 135-152.
11. FERRAZ, Paula (2012). A história nas estórias de Ondjaki. In: PRETOV, Petar; SOUSA, Pedro Quintino; SAMARTIM, Roberto López-Iglésias; FEIJÓ, Elias J. Torres (org). *Avanços em Literaturas e Culturas Africanas e em Literatura e Cultura Galegas*. Santiago de Compostela-Faro: Através Editora, 2012, p. 187-204.
12. FERREIRA, Aurélio Buarque de Holanda (2009). *Novo Dicionario Aurélio da Língua Portuguesa*. Rio de Janeiro: Positivo. CD ROM.
13. GARDES-TAMINE, J. (1992). *La stylistique*. Paris: Armand Colin.

14. HOYOS, Balbina Lorenzo Feijóo (1980). Ser e estar: estudo contrastivo espanhol-português. *Alfa*, São Paulo, 24, 1980, p. 93-107.
15. HOUAISS, Antônio (2001). Dicionário Houaiss da Língua Portuguesa. Rio de Janeiro: Ed. Objetiva. CD-ROM.
16. IONESCO, Eugène (1987). *La quête intermittente*. Paris: Gallimard.
17. MENDES, E. (2011). "O português como língua de mediação cultural: por uma formação intercultural de professores e alunos de PLE". En: MENDES, E. (Org.). *Diálogos interculturais: ensino e formação em português língua estrangeira*. Campinas: Pontes, 2011, p.139-158.
18. NEVES, M.H. de M. (2007). "A gramática e suas interfaces". *Alfa*, São Paulo, 51 (1), p. 81-98.
19. ONDJAKI (2001). *Momentos de aqui*. Lisboa: Editorial Caminho.
20. ONDJAKI (2009). Entrevista com Ondjaki. 23 Jul 2009. Saraiva Youtube Channel. Available at: https://youtube.com/watch?v=0cTQ52tleN8&feature=youtu.be (20 Aug 2023).
21. ONDJAKI (2010). *Dentro de Mim Faz Sul Seguido de Acto Sanguíneo*. Lisboa: Caminho, 2010.
22. ONDJAKI (2011a). *Há prendisajens com o xão:* O segredo húmido da lesma & outras descoisas. [1st ed.: 2002]. Lisboa: Editorial Caminho, 2011. E-book.
23. ONDJAKI (2011b). Fazer poesia – e outros projectos..., entrevista a Ondjaki. Cara a cara. Interview with Paulinho Assunção. Publ. 27 Mar 2011. Available at: https://www.buala.org/pt/cara-a-cara/fazer-poesia-e-outros-projectos-entrevista-a-ondjaki (15/09/2023).
24. ONDJAKI (2013). Entrevista com o escritor angolano Ondjaki. Interview with Eliane Boscatto. Publ. 26 Oct 2013. Available at: https://homoliteratus.com/entrevista-com-o-escritor-angolano-ondjaki/ (30/09/2023).
25. ONDJAKI (2014). Entrevista a Ondjaki - "O livro fala ou não fala com o leitor". Novo jornal, 24 Feb 2014. Available at: https://novojornal.co.ao/cultura/interior/entrevista-a-ondjakio-livro-fala-ou-nao-fala-com-o-leitor-5258.html (20/09/2023).
26. ONDJAKI (2022). Ondjaki no podcast "O poema ensina a cair". Interview with Raquel Marinho. Publ. 31 Oct 2022. Available at: https://www.youtube.com/watch?v=RuHyQPrlISo (20/10/2023).
27. SPALIVIERO, C. (2020). *Educazione letteraria e didattica della letteratura*. Venezia: Edizioni Ca' Foscari.

This page is intentionally left blank

Global Journal of human-social science: G
Linguistics & Education
Volume 23 Issue 11 Version 1.0 Year 2023
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-460X & Print ISSN: 0975-587X

Perception of Physical Education Teachers about the Inclusion of Students with Special Needs

By Silvia Borges

Abstract- This systematic review of examines research published from 2012 to 2022 on physical education teachers'perceptions of including students with special needs in physical education classes. The searches yielded (n=665) studies, of which (n=27) were included, the review describes the teachers' perspectives on inclusion, the impostance of inclusive education, the barriers encountered by professionals in daily practice and the need for professional development through basic training or through refresher courses.

Keywords: *inclusion, teacher, physical education.*

GJHSS-G Classification: *LCC Code: LC4035-4039*

Strictly as per the compliance and regulations of:

Perception of Physical Education Teachers about the Inclusion of Students with Special Needs

Percepção dos Professores de Educação Física Sobre a Inclusão de Alunos com Necessidades Especiais

Silvia Borges

Resumo- **Esta revisão sistemática examina pesquisas publicadas de 2012 a 2022 sobre a percepção dos professores de educação física sobre a inclusão de alunos com necessidades especiais nas aulas de educação física. As buscas renderam (n= 665) estudos, dos quais, (n=27) foram incluídos, a revisão descreve as perspectivas dos professores sobre a inclusão, a importância da educação inclusiva, as barreiras encontradas pelos profissionais na prática diária e a necessidade do desenvolvimento profissional através da formação de base ou por meio de cursos de atualização.**

Palavras-chaves: inclusão, professor, educação física.

Abstract- **This systematic review of examines research published from 2012 to 2022 on physical education teachers'perceptions of including students with special needs in physical education classes. The searches yielded (n=665) studies, of which (n=27) were included, the review describes the teachers' perspectives on inclusion, the impostance of inclusive education, the barriers encountered by professionals in daily practice and the need for professional development through basic training or through refresher courses.**

Keywords: inclusion, teacher, physical education.

I. Introdução

Temos assistido a uma sensibilização global para as práticas inclusivas desde a Conferência Mundial sobre Necessidades Educativas Especiais com a publicação da Declaração de Salamanca que proclama que as escolas regulares, seguindo esta orientação inclusiva, constituem os meios capazes para combater as atitudes discriminatórias, criando comunidades abertas e solidárias, construindo uma sociedade inclusiva e atingindo a educação para todos; além disso, proporcionam uma educação adequada à maioria das crianças e promovem a eficiência, numa óptima relação custo-qualidade, de todo o sistema educativo (Especiais, E.J.S.p.; 1994). A educação inclusiva consiste na ideia de todas as pessoas terem acesso, de modo igualitário ao sistema de ensino. A inclusão é o processo que ajuda a superar barreiras que limitam a presença, participação e conquistas dos estudantes (Vuong, Q.H.; & Trung, T.; 2021).

As aulas de Educação Física consistem em um espaço propício para a vivência e experimentação de gestos motores, desenvolvimento de potencialidades, cooperação e integração entre os alunos, e devem também propiciar atitudes construtiva com os portadores de necessidades educativas especiais, possibilitando uma atitude de respeito, aceitação e solidariedade. O professor de Educação Física deve estar preparado e motivado para desenvolver conteúdos estimulantes e criativos, adaptando-os aos diferentes níveis de aprendizagem e limitações de seus alunos, a complexidade se mostra durante a prática e supostamente será necessário a mudança de pensamentos e atitudes. Muitos fatores podem trabalhar para facilitar ou inibir práticas inclusivas e equitativas nos sistemas educacionais e alguns desses fatores são: atitudes e habilidades dos professores, infraestrutura, estratégias pedagógicas e o currículo (Vuong & Trung, 2021).

Considerando a educação física enquanto espaço potencializador para a inclusão, o professor pode ser o grande responsável por haver ou não a inclusão durante a prática, limitar a participação é um exemplo, é também o responsável por desenvolver novas estratégias visando a integração destes alunos, sendo assim, justifica-se a importância de se estudar a percepção dos professores de educação física sobre a inclusão.

II. Objetivo

Realizar um levantamento do estado da arte sobre a percepção dos professores de educação física sobre a inclusão de alunos com necessidades especiais em suas aulas.

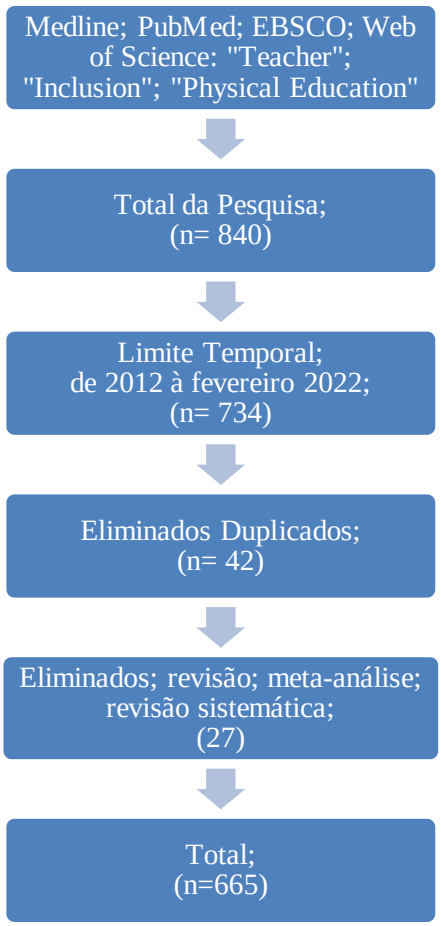
III. Materiais e Métodos

Foram analisados os estudos publicados originalmente em língua inglesa, entre 2012 à fevereiro de 2022, tendo como referência a base de dados eletrônicas Pub-Med, Medline, Web of Science, EBSCO, utilizando as seguintes palavras chaves: "teacher", "inclusion" e "physical education", eliminados artigos de revisão, meta-análise e revisão sistemática e incluídos apenas artigos empíricos com a metodologia utilizada claramente escrita, sendo considerados apenas os artigos que analisaram a percepção dos professores de educação física sobre a inclusão de

Author: e-mail: silviaborges72@gmail.com

alunos com necessidades especiais, os artigos foram selecionados em uma tabela para melhor compreensão da temática abordada no presente estudo.

FLUXOGRAMA



**Não foram analisados todos os casos devido ao limite temporal.*

IV. Apresentação de Resultados

Os resultados são apresentados como uma síntese descritiva de 27 artigos analisados, distribuídos nas zonas geográficas Ásia (n= 6), África (n=1), América (n=9), Europa (n=10) e Oceania (n=1), descrevendo a percepção dos professores de educação física sobre a inclusão de alunos com necessidades especiais em suas aulas, as amostras são compostas por profissionais de educação física pós-graduados, mestres, doutores e acadêmicos, exceto um artigo que incluía além de professores de educação física, profissionais da área de saúde e pedagogia. A faixa etária das amostras se encontra entre (n=21) à (n=60) anos de idade, envolvendo professores do ensino primário, secundário e médio de escolas públicas e privadas, o tempo de experiência profissional foi de (n=1) à (n=35) anos de trabalho, sendo a maior amostra composta por (n=900) profissionais e a menor amostra com (n=1) profissional.

A entrevista foi a forma proeminente de coleta. Os dados qualitativos foram coletados em (n=13) estudos, os dados quantitativos em (n=12) estudos, e uma abordagem de pesquisa mista, onde as técnicas de coleta de dados foram quantitativas e qualitativas utilizadas em (n=2) estudos. As principais percepções dos profissionais em relação à inclusão revelaram que professores jovens tem atitudes mais favoráveis do que os mais velhos, os professores com menos experiência de ensino apresentam-se mais favoráveis do que os professores com maior experiência docente, e professores que já tem conhecimento e experiência de trabalho com alunos com necessidades especiais apresentam atitudes mais positivas do que os professores que não tem esse conhecimento ou não tem alunos com necessidades especiais na sua turma (Ozer, D et al., 2013), há também relatos de que professores independentemente de sua experiência com ambientes inclusivos, treinamentos ou cursos para adquirir conhecimentos e experiências para a inclusão

garantirem ter atitudes positivas em relação à inclusão entretanto, continuam ainda indecisos sobre os seus benefícios (Mauerberg-deCastro, E et al., Paiva, A. C. D., Figueiredo, G. A., da Costa, T. D. A., de Castro, M. R., & Campbell, D. F. 2013, Mangope, B., Mannathoko, M., Kuvini, A., 2013). Com relação às intenções dos professores para o ensino de crianças com deficiência observou-se que embora acreditassem que fizeram o melhor que podiam com suas práticas inclusivas, muitas vezes dependiam de esforços colaborativos para atender às necessidades dos alunos com deficiências graves, e dentre os obstáculos por eles relacionados encontra-se a falta de preparo profissional, relatam que os seus estudos acadêmicos não os prepararam adequadamente para fornecer instrução inclusiva, além da falta de recursos e equipamentos apropriados, para fornecer educação de qualidade aos seus estudantes (Columna, L., Hoyos-Cuartas, L. A., Foley, J. T., Prado-Perez, J. R., Chavarro-Bermeo, D. M., Mora, A. L., . . . Rivero, I. 2016; Qi, Wang, & Há, 2017; Wilson,Theriot & Haegele, 2020; Alhumaid; 2021), em vários outros estudos professores de educação física também apontaram uma série de barreiras à inclusão: estruturas físicas inadequadas das escolas, condições de trabalho (espaços acessíveis e material), aceitação dos alunos com deficiência por seus pares não deficientes, falta de oportunidade de trabalhar continuamente com o mesmo grupo de alunos ao longo dos anos, alto número de alunos na mesma turma, falta de conhecimentos sobre o assunto, falta de formação inicial e capacitação continuada (Alves, M. L. T; Storch J. A; Harnisch, G; Strapasson. A. M; Furtado, O.L.P.C; Lieberman, L; Almeida, J.J.G; Duarte, E.; 2017; Yarimkaya, 2021; Rojo-Ramos, J., Manzano-Redondo, F., Adsuar, J. C., Acevedo-Duque, A., Gomez-Paniagua, S., & Barrios-Fernandez, S. 2022; Wang, Qi, & Wang, 2015).

Resultados mostraram que perspectivas gerais dos professores em relação à inclusão de alunos com necessidades especiais foram positivas, estão cientes da importância da educação inclusiva, que a inclusão é compreendida como participação e aprendizagem para todas as crianças e não apenas para aqueles com deficiência (Alves et al., 2017; Rojo-Ramos et al., 2020; Yarimkaya, 2021; Hodge et al. 2015; Klavina & Strazdina, 2015; Sanches, M.L.; 2015), enquanto os professores geralmente se sentiam preparados e confiantes para ensinar crianças com necessidades especiais, apresentando atitudes positivas para a inclusão; poucos atribuíram isso à sua formação, considerando ineficaz a sua formação de inclusão na graduação (Coates, J.K.; 2012), programas de formação de professores não forneceram experiência suficiente no mundo real na tomada de decisões (Wilson, K.; Theriot, E.A; & Haegele, J.A.; 2020), professores de educação física acreditam que não receberam a preparação inicial necessária e consideram importante complementar com cursos para atender às diversas necessidades de seus alunos (Rojo-Ramos et al., 2022), um estudo indicou que o aumento do número de cursos acadêmicos realizados sobre crianças com deficiência, atitudes e intenções dos professores para incluir crianças com deficiência em suas aulas pode melhorar. (Columna, L., Hoyos-Cuartas, L. A., Foley, J. T., Prado-Perez, J. R., Chavarro-Bermeo, D. M., Mora, A. L., . . . Rivero, I.; 2016), existe a necessidade de investir na formação específica de professores, no apoio multidisciplinar, na diferenciação curricular (Martins, C.L.R.; 2014), professores perceberam a necessidade de treinamento adicional de desenvolvimento profissional para ensinar efetivamente crianças com deficiência (Haegele, Hodge, Gutierres, & de Rezende, 2018), os distritos escolares devem envolver os professores no desenvolvimento profissional focado no ensino de educação física para alunos com deficiência (Hodge, S. R., Haegele, J.; Gutierres, P.; & Lopes, G. R.;2018), há outros casos em que durante o processo de formação inexiste uma disciplina específica, ou pouco ajuda para lidar com esse público. De todo modo, os professores vão reproduzir aquilo que aprenderam durante o curso, tornando-se profissionais inseguros e incapazes de lidar com as diferenças presentes nas salas de aulas (Santos,R.C ; Cenci, J. V.; Gomes, G.L.; Ribeiro, J.P.; Mendonça, J.G.R.; Zemke, A.C.S.; Santos, M.R.S.; Sales, C.R.; Santos, M.S.; 2019), a atitude dos professores em relação a educação inclusiva depende mais das condições práticas de ensino (Braksiek, M.; Gröben, B.; Rischke, A.; & Heim, C.; 2018), os professores canadenses destacam quatro áreas para aumentar a inclusão: planejar universalmente desde o início, compartilhar a propriedade com os alunos, fornecendo a eles papéis de liderança, responsabilidades e escolhas na aprendizagem, criar relações e parcerias positivas e ser responsivo e reflexivo no ensino (Patey, M. J., Jin, Y., Ahn, B., Lee, W. I., & Yi, K. J.; 2021), não há uma solução única para a inclusão dentro da educação física é uma combinação de ações que apoiam esse processo e isso inclui tornar-se um praticante reflexivo, conhecer seus alunos, ser receptivo em oposição à diferença de maneira positiva, em vez de ver isso como limitante, trabalhar imaginativamente para reconsiderar o que constitui aprendizagem em educação física (Petrie, K., Devcich, J. & Fitzgerald,H.; 2018), achados refletem a falta de coerência na compreensão de inclusão e a influência dos conceitos de poder, agência e abnegação na identidade docente e na autoavaliação das necessidades de formação, (Hettiarachchi & Das.; 2012).

V. Discussão

Os estudos mostram que a inclusão é compreendida pelos professores de educação física de

todas as regiões geográficas como a promoção da igualdade entre os alunos, com a participação e aprendizagem para todas as crianças e não apenas aquelas com deficiências, entretanto a maioria dos professores não se sentem suficientemente capacitados para trabalhar com alunos com necessidades especiais nas aulas de educação física e que sentem a necessidade de adquirirem conhecimentos, exceto os que já possuem formação diferenciada ou que já possuem experiência com instituições ou escolas inclusivas. As barreiras relatadas foram unânimes, tais como falta de formação, medo pela segurança dos alunos, currículos, instalações e materiais inadequados. Foi observado que existe um grande interesse e a preocupação com a qualidade das atividades oferecidas, e para que isso ocorra de forma efetiva é necessária implementar a formação acadêmica ou capacitação continuada aos professores de educação física para o enfrentamento dos desafios na prática. É importante se ter uma visão clara da inclusão e a promoção da igualdade entre os alunos sem esquecer das oportunidades ideais que levam em consideração as necessidades especiais de qualquer aluno.

VI. Considerações Finais

Em conclusão, este estudo constatou que a percepção dos professores de educação física sobre a inclusão de alunos com necessidades especiais em suas aulas é favorável, entretanto foram evidenciadas as dificuldades por eles encontradas na prática das aulas com crianças com necessidades especiais pela falta de preparo e experiência, reflexo da formação acadêmica insuficiente ou da falta de cursos de capacitação, neste sentido, argumentamos que é necessário mais conhecimentos sobre o que está sendo feito atualmente na formação acadêmica e nos cursos de capacitação desses profissionais para aumentar seus conhecimentos e suas habilidades práticas para a promoção uma inclusão de qualidade. A maioria dos estudos eram qualitativos, a maior parte desenvolvidos na Europa e Américas do Norte e Sul, as limitações foram o acesso a somente (n=4) bases de dados.

References Références Referencias

1. Alhumaid, M. M. (2021). Physical Education Teachers' Self-Efficacy toward Including Students with Autism in Saudi Arabia. *International Journal of Environmental Research and Public Health, 18*(24). doi:ARTN 1319710.3390/ijerph182413197
2. Alves, M. L. T., Storch, J. A., Harnisch, G., Strapasson, A. M., Furtado, O. L. P. D., Lieberman, L., . . . Duarte, E. (2017). Physical Education Classes and Inclusion of Children with Disability: Brazilian Teachers' Perspectives. *Movimento, 23*(4), 1229-1244. doi: 10.22456/1982-8918.66851
3. Beamer, J. A., & Yun, J. (2014). Physical educators' beliefs and self-reported behaviors toward including students with autism spectrum disorder. *Adapt Phys Activ Q, 31*(4), 362-376. doi: 10.1123/apaq.2014-0134
4. Beyazoglu, G. (2021). Attitudes of Teachers Towards Inclusion of Students with Disabilities in Physical Education. *Pakistan Journal of Medical & Health Sciences, 15*(10), 3390-3393. doi: 10.53350/pjmhs2115103390
5. Braksiek, M., Groben, B., Rischke, A., & Heim, C. (2019). Teachers' attitude toward inclusive physical education and factors that influence it: An investigation conducted using structural equation modeling techniques. *German Journal of Exercise and Sport Research, 49*(1), 27-36. doi: 10.1007/s12662-018-0546-8
6. Coates, J. K. (2012). Teaching inclusively: are secondary physical education student teachers sufficiently prepared to teach in inclusive environments? *Physical Education and Sport Pedagogy, 17*(4), 349-365. doi: 10.1080/17408989.2011.582487
7. Columna, L., Hoyos-Cuartas, L. A., Foley, J. T., Prado-Perez, J. R., Chavarro-Bermeo, D. M., Mora, A. L., . . . Rivero, I. (2016). Latin American Physical Educators' Intention to Teach Individuals With Disabilities. *Adapted Physical Activity Quarterly, 33*(3), 213-232. doi: 10.1123/Apaq.2014-0167
8. Especiais, E. J. S. P., Políticas e Práticas na Área das Necessidades. (1994). Declaração de Salamanca.
9. Haegele, J. A., Hodge, S., Gutierres, P. J. B., & de Rezende, A. L. G. (2018). Brazilian physical education teachers' attitudes toward inclusion before and after participation in a professional development workshop. *European Physical Education Review, 24*(1), 21-38. doi: 10.1177/1356336x16662898
10. Hettiarachchi, S., & Das, A. (2012). Concepts of 'Inclusion' and Training Needs among Teachers in Sri Lanka. *5th International Conference of Education, Research and Innovation (Iceri 2012)*, 2138-2148.
11. Hodge, S. R., Sato, T., Mukoyama, T., & Kozub, F. M. (2013). Development of the Physical Educators' Judgments about Inclusion Instrument for Japanese Physical Education Majors and an Analysis of their Judgments. *International Journal of Disability Development and Education, 60*(4), 332-346. doi: 10.1080/1034912x.2013.846468
12. Klavina, A., & Strazdina, N. (2015). Professional Attitude of Physical Education Teachers Toward Education Process of Students with Severe Intellectual Disabilities. *Society, Integration,*

Education, 2015, Vol Iii, 558-566. doi: 10.17770/sie2015vol3.480
13. Martins, C. L. R. (2014). Inclusive Physical Education: Teachers' Attitudes. *Movimento, 20*(2), 637-657.
14. Mauerberg-deCastro, E., Paiva, A. C. D., Figueiredo, G. A., da Costa, T. D. A., de Castro, M. R., & Campbell, D. F. (2013). Attitudes about inclusion by educators and physical educators: Effects of participation in an inclusive adapted physical education program. *Motriz-Revista De Educacao Fisica, 19*(3), 649-661. doi: Doi 10.1590/S1980-65742013000300017
15. Mangope, B., Mannathoko, M. C., & Kuyini, A. B. J. I. j. o. s. e. (2013). Pre-Service Physical Education Teachers and Inclusive Education: Attitudes, Concerns and Perceived Skill Needs. *28*(3), 82-92.
16. O'Connor, U., & McNabb, J. (2021). Improving the participation of students with special educational needs in mainstream physical education classes: a rights-based perspective. *Educational Studies, 47*(5), 574-590. doi: 10.1080/03055698.2020.1719385
17. Ozer, D., Nalbant, S., Aglamis, E., Baran, F., Kaya Samut, P., Aktop, A., & Hutzler, Y. (2013). Physical education teachers' attitudes towards children with intellectual disability: the impact of time in service, gender, and previous acquaintance. *J Intellect Disabil Res, 57*(11), 1001-1013. doi: 10.1111/j.1365-2788.2012.01596.x
18. Patey, M. J., Jin, Y., Ahn, B., Lee, W. I., & Yi, K. J. (2021). Engaging in inclusive pedagogy: how elementary physical and health educators understand their roles. *International Journal of Inclusive Education*. doi: 10.1080/13603116.2021.1916102
19. Petrie, K., Devcich, J., & Fitzgerald, H. (2018). Working towards inclusive physical education in a primary school: "some days I just don't get it right". *Physical Education and Sport Pedagogy, 23*(4), 345-357. doi: 10.1080/17408989.2018.1441391
20. Qi, J., Wang, L. J., & Ha, A. (2017). Perceptions of Hong Kong physical education teachers on the inclusion of students with disabilities. *Asia Pacific Journal of Education, 37*(1), 86-102. doi: 10.1080/02188791.2016.1169992
21. Rojo-Ramos, J., Manzano-Redondo, F., Adsuar, J. C., Acevedo-Duque, A., Gomez-Paniagua, S., & Barrios-Fernandez, S. (2022). Spanish Physical Education Teachers' Perceptions about Their Preparation for Inclusive Education. *Children (Basel), 9*(1). doi: 10.3390/children9010108
22. Sanches, M. L. (2015). Concepts and Practices of Inclusion in Physical Education School: Study in a City of Brazil. *Educacion Fisica Y Deporte, 34*(1), 155-179. doi: 10.17533/udea.efyd.v34n1a07
23. Santos, R. C., Cenci, J. V., Gomes, G. L., Ribeiro, J. d. P., Mendoça, J. G., Zemke, A., . . . Marina, S. A percepção dos professores de Educação Física quanto à inclusão de estudantes público-alvo da educação especial (EPAEE) da rede municipal de Ji-paraná-RO. Brasil.
24. Wang, L. J., Qi, J., & Wang, L. (2015). Beliefs of Chinese Physical Educators on Teaching Students With Disabilities in General Physical Education Classes. *Adapted Physical Activity Quarterly, 32*(2), 137-155. doi: 10.1123/Apaq.2014-0140
25. Wilson, W. J., Kelly, L. E., & Haegele, J. A. (2020). 'We're asking teachers to do more with less': perspectives on least restrictive environment implementation in physical education. *Sport Education and Society, 25*(9), 1058-1071. doi: 10.1080/13573322.2019.1688279
26. Wilson, W. J., Theriot, E. A., & Haegele, J. A. (2020). Attempting inclusive practice: perspectives of physical educators and adapted physical educators. *Curriculum Studies in Health and Physical Education, 11*(3), 187-203. doi: 10.1080/25742981.2020.1806721
27. Yarimkaya, E. (2021). The Investigation of Attitudes and Opinions of Physical Education Teachers towards Students with Special Needs from the Framework of Theory of Planned Behavior. *Hacettepe Universitesi Egitim Fakultesi Dergisi-Hacettepe University Journal of Education, 36*(3), 562-578. doi: 10.16986/Huje.2020058708
28. Yarimkaya, E., & Rizzo, T. L. (2020). Beliefs and Attitudes of Turkish Physical Educators Toward Teaching Students with Disabilities in Inclusive Physical Education Classes. *Palaestra, 34*(4), 27-36.
29. Vuong, Q.-H., & Trung, T. (2021). *Academic Contributions to the UNESCO 2019 Forum on Education for Sustainable Development and Global Citizenship*: MDPI.

Global Journals Guidelines Handbook 2023

www.GlobalJournals.org

Memberships

Fellows/Associates of Social Science Research Council

FSSRC/ASSRC Memberships

Introduction

FSSRC/ASSRC is the most prestigious membership of Global Journals accredited by Open Association of Research Society, U.S.A (OARS). The credentials of Fellow and Associate designations signify that the researcher has gained the knowledge of the fundamental and high-level concepts, and is a subject matter expert, proficient in an expertise course covering the professional code of conduct, and follows recognized standards of practice. The credentials are designated only to the researchers, scientists, and professionals that have been selected by a rigorous process by our Editorial Board and Management Board.

Associates of FSSRC/ASSRC are scientists and researchers from around the world are working on projects/researches that have huge potentials. Members support Global Journals' mission to advance technology for humanity and the profession.

FSSRC

Fellow of Social Science Research Council

FELLOW OF SOCIAL SCIENCE RESEARCH COUNCIL is the most prestigious membership of Global Journals. It is an award and membership granted to individuals that the Open Association of Research Society judges to have made a 'substantial contribution to the improvement of computer science, technology, and electronics engineering.

The primary objective is to recognize the leaders in research and scientific fields of the current era with a global perspective and to create a channel between them and other researchers for better exposure and knowledge sharing. Members are most eminent scientists, engineers, and technologists from all across the world. Fellows are elected for life through a peer review process on the basis of excellence in the respective domain. There is no limit on the number of new nominations made in any year. Each year, the Open Association of Research Society elect up to 12 new Fellow Members.

Benefit

To the institution

Get letter of appreciation

Global Journals sends a letter of appreciation of author to the Dean or CEO of the University or Company of which author is a part, signed by editor in chief or chief author.

Exclusive Network

Get access to a closed network

A FSSRC member gets access to a closed network of Tier 1 researchers and scientists with direct communication channel through our website. Fellows can reach out to other members or researchers directly. They should also be open to reaching out by other.

Career | Credibility | Exclusive | Reputation

Certificate

Certificate, LOR and Laser-Momento

Fellows receive a printed copy of a certificate signed by our Chief Author that may be used for academic purposes and a personal recommendation letter to the dean of member's university.

Career | Credibility | Exclusive | Reputation

Designation

Get honored title of membership

Fellows can use the honored title of membership. The “FSSRC” is an honored title which is accorded to a person’s name viz. Dr. John E. Hall, Ph.D., FSSRC or William Walldroff, M.S., FSSRC.

Career | Credibility | Exclusive | Reputation

Recognition on the Platform

Better visibility and citation

All the Fellow members of FSSRC get a badge of "Leading Member of Global Journals" on the Research Community that distinguishes them from others. Additionally, the profile is also partially maintained by our team for better visibility and citation. All fellows get a dedicated page on the website with their biography.

Career | Credibility | Reputation

Future Work

Get discounts on the future publications

Fellows receive discounts on future publications with Global Journals up to 60%. Through our recommendation programs, members also receive discounts on publications made with OARS affiliated organizations.

Career | Financial

GJ Account

Unlimited forward of Emails

Fellows get secure and fast GJ work emails with unlimited forward of emails that they may use them as their primary email. For example,
john [AT] globaljournals [DOT] org.

Career | Credibility | Reputation

Premium Tools

Access to all the premium tools

To take future researches to the zenith, fellows receive access to all the premium tools that Global Journals have to offer along with the partnership with some of the best marketing leading tools out there.

Financial

Conferences & Events

Organize seminar/conference

Fellows are authorized to organize symposium/seminar/conference on behalf of Global Journal Incorporation (USA). They can also participate in the same organized by another institution as representative of Global Journal. In both the cases, it is mandatory for him to discuss with us and obtain our consent. Additionally, they get free research conferences (and others) alerts.

Career | Credibility | Financial

Early Invitations

Early invitations to all the symposiums, seminars, conferences

All fellows receive the early invitations to all the symposiums, seminars, conferences and webinars hosted by Global Journals in their subject.

Exclusive

Publishing Articles & Books

Earn 60% of sales proceeds

To take future researches to the zenith, fellows receive access to all the premium tools that Global Journals have to offer along with the partnership with some of the best marketing leading tools out there.

Exclusive | Financial

Reviewers

Get a remuneration of 15% of author fees

Fellow members are eligible to join as a paid peer reviewer at Global Journals Incorporation (USA) and can get a remuneration of 15% of author fees, taken from the author of a respective paper.

Financial

Access to Editorial Board

Become a member of the Editorial Board

Fellows may join as a member of the Editorial Board of Global Journals Incorporation (USA) after successful completion of three years as Fellow and as Peer Reviewer. Additionally, Fellows get a chance to nominate other members for Editorial Board.

Career | Credibility | Exclusive | Reputation

And Much More

Get access to scientific museums and observatories across the globe

All members get access to 5 selected scientific museums and observatories across the globe. All researches published with Global Journals will be kept under deep archival facilities across regions for future protections and disaster recovery. They get 10 GB free secure cloud access for storing research files.

ASSRC

ASSOCIATE OF SOCIAL SCIENCE RESEARCH COUNCIL

ASSOCIATE OF SOCIAL SCIENCE RESEARCH COUNCIL is the membership of Global Journals awarded to individuals that the Open Association of Research Society judges to have made a 'substantial contribution to the improvement of computer science, technology, and electronics engineering.

The primary objective is to recognize the leaders in research and scientific fields of the current era with a global perspective and to create a channel between them and other researchers for better exposure and knowledge sharing. Members are most eminent scientists, engineers, and technologists from all across the world. Associate membership can later be promoted to Fellow Membership. Associates are elected for life through a peer review process on the basis of excellence in the respective domain. There is no limit on the number of new nominations made in any year. Each year, the Open Association of Research Society elect up to 12 new Associate Members.

Benefit

To the institution

Get letter of appreciation

Global Journals sends a letter of appreciation of author to the Dean or CEO of the University or Company of which author is a part, signed by editor in chief or chief author.

Exclusive Network

Get access to a closed network

A ASSRC member gets access to a closed network of Tier 2 researchers and scientists with direct communication channel through our website. Associates can reach out to other members or researchers directly. They should also be open to reaching out by other.

Career | Credibility | Exclusive | Reputation

Certificate

Certificate, LoR and Laser-Momento

Associates receive a printed copy of a certificate signed by our Chief Author that may be used for academic purposes and a personal recommendation letter to the dean of member's university.

Career | Credibility | Exclusive | Reputation

Designation

Get honored title of membership

Associates can use the honored title of membership. The “ASSRC” is an honored title which is accorded to a person’s name viz. Dr. John E. Hall, Ph.D., ASSRC or William Walldroff, M.S., ASSRC.

Career | Credibility | Exclusive | Reputation

Recognition on the Platform

Better visibility and citation

All the Associate members of ASSRC get a badge of "Leading Member of Global Journals" on the Research Community that distinguishes them from others. Additionally, the profile is also partially maintained by our team for better visibility and citation.

Career | Credibility | Reputation

Future Work

Get discounts on the future publications

Associates receive discounts on future publications with Global Journals up to 30%. Through our recommendation programs, members also receive discounts on publications made with OARS affiliated organizations.

Career | Financial

GJ Account

Unlimited forward of Emails

Associates get secure and fast GJ work emails with 5GB forward of emails that they may use them as their primary email. For example, john [AT] globaljournals [DOT] org.

Career | Credibility | Reputation

Premium Tools

Access to all the premium tools

To take future researches to the zenith, fellows receive access to almost all the premium tools that Global Journals have to offer along with the partnership with some of the best marketing leading tools out there.

Financial

Conferences & Events

Organize seminar/conference

Associates are authorized to organize symposium/seminar/conference on behalf of Global Journal Incorporation (USA). They can also participate in the same organized by another institution as representative of Global Journal. In both the cases, it is mandatory for him to discuss with us and obtain our consent. Additionally, they get free research conferences (and others) alerts.

Career | Credibility | Financial

Early Invitations

Early invitations to all the symposiums, seminars, conferences

All associates receive the early invitations to all the symposiums, seminars, conferences and webinars hosted by Global Journals in their subject.

Exclusive

Publishing Articles & Books

Earn 60% of sales proceeds

Associates can publish articles (limited) without any fees. Also, they can earn up to 30-40% of sales proceeds from the sale of reference/review books/literature/publishing of research paper.

Exclusive | Financial

Reviewers

Get a remuneration of 15% of author fees

Associate members are eligible to join as a paid peer reviewer at Global Journals Incorporation (USA) and can get a remuneration of 15% of author fees, taken from the author of a respective paper.

Financial

And Much More

Get access to scientific museums and observatories across the globe

All members get access to 2 selected scientific museums and observatories across the globe. All researches published with Global Journals will be kept under deep archival facilities across regions for future protections and disaster recovery. They get 5 GB free secure cloud access for storing research files.

Associate	Fellow	Research Group	Basic
$4800 **lifetime designation**	$6800 **lifetime designation**	$12500.00 **organizational**	APC **per article**
Certificate, LoR and Momento **2** discounted publishing/year **Gradation** of Research **10** research contacts/day **1 GB** Cloud Storage **GJ** Community Access	**Certificate,** LoR and Momento **Unlimited** discounted publishing/year **Gradation** of Research **Unlimited** research contacts/day **5 GB** Cloud Storage **Online Presense** Assistance **GJ** Community Access	**Certificates,** LoRs and Momentos **Unlimited** free publishing/year **Gradation** of Research **Unlimited** research contacts/day **Unlimited** Cloud Storage **Online Presense** Assistance **GJ** Community Access	**GJ** Community Access

Preferred Author Guidelines

We accept the manuscript submissions in any standard (generic) format.

We typeset manuscripts using advanced typesetting tools like Adobe In Design, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

Alternatively, you can download our basic template from https://globaljournals.org/Template.zip

Authors should submit their complete paper/article, including text illustrations, graphics, conclusions, artwork, and tables. Authors who are not able to submit manuscript using the form above can email the manuscript department at submit@globaljournals.org or get in touch with chiefeditor@globaljournals.org if they wish to send the abstract before submission.

Before and during Submission

Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

1. Authors must go through the complete author guideline and understand and *agree to Global Journals' ethics and code of conduct,* along with author responsibilities.
2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author's email address and postal address are accurate and reachable.
4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s') names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
5. Authors should submit paper in a ZIP archive if any supplementary files are required along with the paper.
6. Proper permissions must be acquired for the use of any copyrighted material.
7. Manuscript submitted *must not have been submitted or published elsewhere* and all authors must be aware of the submission.

Declaration of Conflicts of Interest

It is required for authors to declare all financial, institutional, and personal relationships with other individuals and organizations that could influence (bias) their research.

Policy on Plagiarism

Plagiarism is not acceptable in Global Journals submissions at all.

Plagiarized content will not be considered for publication. We reserve the right to inform authors' institutions about plagiarism detected either before or after publication. If plagiarism is identified, we will follow COPE guidelines:

Authors are solely responsible for all the plagiarism that is found. The author must not fabricate, falsify or plagiarize existing research data. The following, if copied, will be considered plagiarism:

- Words (language)
- Ideas
- Findings
- Writings
- Diagrams
- Graphs
- Illustrations
- Lectures

- Printed material
- Graphic representations
- Computer programs
- Electronic material
- Any other original work

Authorship Policies

Global Journals follows the definition of authorship set up by the Open Association of Research Society, USA. According to its guidelines, authorship criteria must be based on:

1. Substantial contributions to the conception and acquisition of data, analysis, and interpretation of findings.
2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

Changes in Authorship

The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

Copyright

During submission of the manuscript, the author is confirming an exclusive license agreement with Global Journals which gives Global Journals the authority to reproduce, reuse, and republish authors' research. We also believe in flexible copyright terms where copyright may remain with authors/employers/institutions as well. Contact your editor after acceptance to choose your copyright policy. You may follow this form for copyright transfers.

Appealing Decisions

Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

Declaration of funding sources

Global Journals is in partnership with various universities, laboratories, and other institutions worldwide in the research domain. Authors are requested to disclose their source of funding during every stage of their research, such as making analysis, performing laboratory operations, computing data, and using institutional resources, from writing an article to its submission. This will also help authors to get reimbursements by requesting an open access publication letter from Global Journals and submitting to the respective funding source.

Preparing your Manuscript

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.

Manuscript Style Instruction (Optional)

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11'", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

Structure and Format of Manuscript

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

a) A title which should be relevant to the theme of the paper.
b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
d) An introduction, giving fundamental background objectives.
e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
f) Results which should be presented concisely by well-designed tables and figures.
g) Suitable statistical data should also be given.
h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
j) There should be brief acknowledgments.
k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.

Format Structure

It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

Title

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

Author details

The full postal address of any related author(s) must be specified.

Abstract

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Keywords

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, “What words would a source have to include to be truly valuable in a research paper?” Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

Abbreviations

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

Tables, Figures, and Figure Legends

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.

Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Eletronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for writing a good quality Social Science Research Paper

Techniques for writing a good quality homan social science research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of homan social science then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.

6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.

Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.
Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

19. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

20. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

21. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

22. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

The Administration Rules

Administration Rules to Be Strictly Followed before Submitting Your Research Paper to Global Journals Inc.

Please read the following rules and regulations carefully before submitting your research paper to Global Journals Inc. to avoid rejection.

Segment draft and final research paper: You have to strictly follow the template of a research paper, failing which your paper may get rejected. You are expected to write each part of the paper wholly on your own. The peer reviewers need to identify your own perspective of the concepts in your own terms. Please do not extract straight from any other source, and do not rephrase someone else's analysis. Do not allow anyone else to proofread your manuscript.

Written material: You may discuss this with your guides and key sources. Do not copy anyone else's paper, even if this is only imitation, otherwise it will be rejected on the grounds of plagiarism, which is illegal. Various methods to avoid plagiarism are strictly applied by us to every paper, and, if found guilty, you may be blacklisted, which could affect your career adversely. To guard yourself and others from possible illegal use, please do not permit anyone to use or even read your paper and file.

Criterion for Grading a Research Paper (Compilation) by Global Journals

Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals

Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

INDEX

save our planet

Global Journal of Human Social Science

Visit us on the Web at www.GlobalJournals.org | www.SocialScienceResearch.org
or email us at helpdesk@globaljournals.org

ISSN 975587