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By Sandra Regina Barbosa, Edicléa Mascarenhas Fernandes, Helio Ferreira Orrico,
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CONCEPTANDIMPLEMENTATIONOFNEWPROCESSESOFEDUCATIONALMEDIATIONPROPOSALFORANEPISTEMOLOGICALMODEL

Strictly as per the compliance and regulations of:

Concept and Implementation of New Processes of Educational Mediation: Proposal for an Epistemological Model

Conceituação e Implementação de novos Processos de Mediação Educacional: Proposta para um Modelo Epistemológico

Sandra Regina Barbosa ᵅ, Edicléa Mascarenhas Fernandes ᵟ, Helio Ferreira Orrico ᵖ, Flavia Varriol de Freitas ᵚ, Elizabeth Rodrigues de Oliveira Pereira ¥ & Maria Cristina Tavares de Moraes Danelon §

Resumo- Inicialmente constituído como um instrumento de gestão no contexto social, o trabalho do mediador nas escolas, que teve origem nos meios jurídicos na década de 1970, atualmente está voltado para o apoio escolar de alunos da Educação Especial, passando a desempenhar o papel de outros profissionais, com base na Lei Brasileira de Inclusão (2015). Mas na prática o que se percebe é a ausência de conhecimentos teóricos que identifiquem as potencialidades dos alunos e que possam realmente ajudá-los. Nesse cenário, o presente estudo tem como objetivo propor a construção de um modelo epistemológico para conceituar e implantar novos processos de mediação educacional. Trata-se de uma pesquisa bibliográfica, sistemática, que constitui um arcabouço teórico, metodológico e de análise que envolve ensino-aprendizagem, além dos estudos desenvolvidos no Laboratório de Didática e Pedagogia Especial da Universidade de Roma "Foro Itálico" (UNIROMA/IT), essenciais para extrair elementos na construção de um modelo epistemológico, o qual foi simbolicamente representado numa perspectiva triangular, ou seja: nos pressupostos da teoria sócio-histórica de Vygotsky; nas ferramentas biopsicossociais, com a Escala SIS (AAIDD) e a Classificação de Funcionalidade, Incapacidade e Saúde (CIF/OMS) e; por fim, nos processos mediadores com base nas teorias da Mediação Didática, Pedagógica e Educacional. Acreditamos que discutir, apresentar conceitos significativos e entender a mediação sob novas perspectivas teóricas, poderá colaborar nos processos educacionais dos alunos favorecendo o conhecimento e a ação pedagógica e contribuir para a construção de novos olhares nos processos de ensino-aprendizagem.

Palavras-Chave: mediação educacional. teoria sócio histórica. escala SIS, classificação internacional de funcionalidade, incapacidade e saúde/CIF.

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I. Introdução

O processo ensino-aprendizagem tem uma função substancial no ato de aprender e ensinar. Em sua complexidade, pode ocorrer em diferentes contextos, formais ou informais. Para tal, requer planejamento criterioso, que vise ao desenvolvimento de conteúdos, habilidades de ensino e aprendizagem, habilidades interpessoais e organizacionais, além de um ambiente de sala de aula seguro e promotor de aprendizagem. Compreender os princípios científicos que guiam o processo de ensino-aprendizagem pode fornecer aos professores e alunos melhores oportunidades para a aprendizagem.

Aprofundar-se nos estudos, teorias e práticas que envolvem processos educacionais, como o processo da mediação educacional, epistemologica-mente falando, pode favorecer o conhecimento e a ação pedagógica, a todo um grupo de educadores predispostos a percepção de novos saberes e a novas construções da sua práxis.

Neste sentido, este estudo busca aprofundar os conceitos e teorias sobre os processos da mediação educacional, resgatando a evolução histórica do termo, o estado da arte, fundamentar estudos de teóricos contemporâneos, para então, possibilitar a identificação de processos, recursos e meios para construção de um modelo epistemológico no contexto sócio-histórico, para os processos de mediação educacional.

O tema proposto é fruto das pesquisas que vem sendo desenvolvidas desde o Curso de Mestrado Profissional em Diversidade e Inclusão, na Universidade Federal Fluminense - UFF, concluído em 2019, que resultou na publicação do livro "Mediação Pedagógica e Inclusão: Formação Inicial e Continuada de Professores", assim como, continua sendo investigado como tema principal e parte dos estudos e pesquisas do curso de doutorado, no Programa de pós graduação em Ciências, Tecnologias e Inclusão (PGCTIn/UFF).

Com base nessa trajetória e nas pesquisas realizadas, percebe-se uma lacuna nos espaços

pedagógicos que costumam ser trabalhados de forma fragmentada. Isso pode ter um efeito significativo sobre o trabalho e os processos de mediação educacional, sendo o professor o mediador entre o conhecimento e o aluno e influenciando diretamente o debate sobre a inclusão ou exclusão de pessoas com ou sem deficiência.

O processo histórico de transmissão e construção de conhecimentos é uma atividade mediada, segundo Vygotsky (1989), e pela qual se adquirem e se formam os conceitos. Considera ainda que o ensino e a aprendizagem desempenham um papel importante na aquisição e formação dos conceitos científicos a partir das formas mais desenvolvidas do saber, da prática social e de necessidades históricas.

a) Contextualização Histórica do Termo Mediação

A prática da mediação, enquanto resolução de conflitos, é uma prática muito antiga entre povos, etnias e nações. Tal como refere Six (1990, p.11) "a mediação sempre existiu. Sempre houve, nas tribos ou povoações, sábios a quem se recorria com toda a naturalidade, que traziam sossego às pessoas diferentes, seres que eram alicerces da fraternidade". Enfim, a arte de mediar sempre existiu na figura de pessoas que possuíam habilidades relacionais e exerciam papel de intercessores pela resolução do conflito.

A etimologia da palavra mediação, é o Latim *MEDIATIO*, "mediação", de *MEDIARI*, "intervir, colocar-se entre duas partes", de *MEDIUS*, "meio". Lalande (1993, p.656), acrescenta: "procede do adjetivo inglês *mediate*, embora se admita também vinculação com o francês *mediat* e, em seguida, *médiation* do qual se originou o substantivo *médiation* e seus derivados, como *intermediation*."

A partir dos anos 70, no Séc. XX, o termo mediação surge nos Estados Unidos da América (EUA) entre os meios alternativos de resolução de conflitos. Já na década de 1980 surgem também experiências de mediação na França, passando também a ser inserida em outros contextos, que não somente meios jurídicos, como a comunidade e a família.

De acordo com Alzate (1999) citado por Possato *et al* (2016), no campo educacional a mediação escolar se destaca no mesmo período nos Estados Unidos, quando os Centros de Mediação Comunitária passam a receber numerosos casos de crianças e jovens em situações de disputa no contexto escolar (ALZATE, 1999 *apud* POSSATO *et al*, 2016).

Em diversos países do mundo, programas de políticas públicas são criados para inserir a mediação nas escolas. Freire (2010) descreve que o processo de implantação da mediação no campo educativo está amparado em três campos distintos: "a mediação socioeducativa ou sociocultural, muito associada à problemática da exclusão social, a mediação de conflitos interpessoais, ligada à problemática da indisciplina e da conflitualidade no interior das escolas e, simultaneamente com estas duas, a da formação de mediadores." (FREIRE, 2010, p.68).

O Brasil igualmente possui uma trajetória com relação as políticas públicas que visam amenizar as violências nas escolas. Devido à intensidade de fatos ocorridos na década de 1990, o Ministério da Justiça do Brasil encarregou uma comissão de especialistas da Secretária de Direitos Humanos a elaborar diretrizes para a redução das manifestações violentas nas escolas (AVALOS, 2003 *apud* POSSATO, *et al*, 2016). Assim, o "Programa Paz nas Escolas", criado e difundido em nível nacional, focava na formação de professores e policiais para lidarem com essa temática. Daí em diante, outros programas e projetos de mediação no campo educativo foram desenvolvidos pelos governos federal, estadual e/ou municipal, além de ações realizadas por organizações não-governamentais.

Segundo Bonafe-Schmitt(2009, *apud* SILVA, 2011), sociólogo francês, a questão da mediação é ampliada, passando de uma competência em gestão e resolução de conflitos para uma abordagem em comunicação, educação e segurança.

b) A Mediação no Contexto dos Processos de Ensino e Aprendizagem: na perspectiva da Educação Inclusiva

Historicamente, com o início do movimento "Educação para Todos", a partir da promulgação da Declaração Mundial sobre Educação para Todos – UNESCO, 1990, e diversos outros documentos gerados ao longo dos anos por organizações internacionais, com destaque para a Declaração de Salamanca, de Princípios, Política e Práticas em Educação Especial - UNESCO, em 1994; garantiram o direito universal à educação, como também orientaram o processo de inclusão na educação.

Nesse contexto, a Declaração de Salamanca (1994), propõe: "Dentro das escolas inclusivas, as crianças com necessidades educacionais especiais deveriam receber qualquer apoio extra que possam precisar, para que se lhes assegure educação efetiva (…)". Desse modo, inicia-se um movimento que, com o decorrer dos anos, as escolas, assim como as famílias, começam a introduzir o termo mediação, na questão pedagógica, para suprir as demandas dos alunos com deficiência, nos espaços educacionais.

Após dez anos do acordo da Convenção sobre os Direitos das Pessoas com Deficiência (CDPD), adotados pela 61ª. sessão da Assembleia Geral da Organização das Nações Unidas (ONU) em 2006, no Brasil é criada a Lei Brasileira de Inclusão (LBI nº. 13.146/2015), a qual entrou em vigor a partir de janeiro de 2016. Vale destacar que, durante este período outras

leis e decretos foram instituídos em prol da Educação Inclusiva.

Todos esses momentos históricos produziram nas escolas brasileiras uma mobilização e tentativas de transformação no ambiente escolar para o acompanhamento dos alunos em processo de inclusão. Desse modo, professores das classes comuns, deveriam ter um apoio para o trabalho em parceria, surgindo assim, a figura de um mediador escolar no enfoque da educação inclusiva.

Com origem nos meios jurídicos, na década de 70, percebe-se que atualmente, a ação do mediador nas escolas, mudou de perspectiva. Inicialmente constituído como um instrumento de gestão na questão social, passou a ocupar o lugar dos demais profissionais, conforme descrito pela LBI (2015), em seu Capítulo I, Artigo 3º, itens XII, XIII e XIV, que diz:

XII - *atendente pessoal:* pessoa, membro ou não da família, que, com ou sem remuneração, assiste ou presta cuidados básicos e essenciais à pessoa com deficiência no exercício de suas atividades diárias, excluídas as técnicas ou os procedimentos identificados com profissões legalmente estabelecidas;

XIII - *profissional de apoio escolar:* pessoa que exerce atividades de alimentação, higiene e locomoção do estudante com deficiência e atua em todas as atividades escolares nas quais se fizer necessária, em todos os níveis e modalidades de ensino, em instituições públicas e privadas, excluídas as técnicas ou os procedimentos identificados com profissões legalmente estabelecidas;

XIV - *acompanhante:* aquele que acompanha a pessoa com deficiência, podendo ou não desempenhar as funções de atendente pessoal. (LBI, 2015, p.2-3).

Nesse sentido, a introdução da mediação nas escolas, iniciada nos anos 90, através de programas concebidos para ajudar os alunos a resolver conflitos entre eles, hoje, está focada na questão do suporte/ apoio ao Atendimento Educacional Especializado (AEE), para alunos público da Educação Especial. E para que possam obter um suporte exitoso no contexto do processo ensino-aprendizagem, um olhar sobre a didática é essencial.

c) *A Didática como ciência da mediação - Evolução e Contexto Histórico*

Desde sua concepção etimológica, o ensino se constitui como o objeto de estudo da didática. Ao longo da história da educação, a didática não fica restrita ao âmbito formalizado do ensino, o conceito evolui e expande-se ao domínio da aprendizagem, ou seja, de seu objeto de estudo, o ensino, para ensino e aprendizagem.

Foi Wolfgang Ratke (1571 – 1635), educador alemão no Século XVI, o primeiro a instituir o termo, cujo sistema educativo tinha por princípio, passar das coisas aos nomes, do particular ao geral e da língua materna às línguas estrangeiras. Porém, foi Comenius

(1592 – 1670), em sua "Didática Magna" que atribuiu à Didática o seu caráter pedagógico.

Ratke antecedeu Comenius e sua obra refere-se aos fundamentos filosóficos que nortearam os conteúdos e as formas dos livros didáticos elaborados por esse pedagogo alemão. Seus princípios básicos, na época, referiam-se a harmonia que estabeleceu entre fé, natureza e ciência e presente em todos os seus livros. Suas ideias centrais, presentes no *Memorial de Frankfurt* (1612), causando muita polêmica na época, tratavam de três principais temas: a) uma reforma do ensino das línguas; b) uma reforma da instrução pública; c) uma reforma da vida política e religiosa na Alemanha. Ainda, os objetivos de Ratke apontam para três dimensões articuladas: as funções do Estado, a organização da escola e a arte de ensinar.

Entre vários outros assuntos abordados, ele se refere ao ensino em sala de aula e escreve que é preciso:

Perceber com precisão as disposições naturais das crianças; aprender a aprová-las e a diferenciá-las. [...] Não se pode fazer desenvolver numa pessoa a disposição natural da mesma maneira que numa outra. O preceptor deve estudar a maneira de cada aluno se comportar. (RATKE, 1877, p. 591)

No seu "Tratado sobre as funções do soberano", Ratke relata que a formação do professor que atua na aprendizagem em sala de aula, exige a compreensão das disposições naturais. Por isso, é preciso "não apresentar e não fazer aprender a uma criança mais do que ela é capaz de reter e não retardar um aluno dotado" (Ratke, 1632, p. 197). Os professores devem adaptar-se às qualidades e às possibilidades de cada um: "Devem levar em conta as qualidades inatas, a habilidade ou a incapacidade e a preguiça dos alunos" (idem, p. 196). No mesmo livro, Ratke sugere: "Durante as aulas, o mestre pode e deve conhecer as preferências das crianças e julgar suas capacidades para os estudos" (idem, p. 198). Logo a seguir escreve: "Cada aluno deve ser instruído e educado conforme suas capacidades" (idem, p. 156).

Segundo Hoff (2002, p.154), pode-se evidenciar que uma mudança importante ocorreu na época e "a elaboração de livros didáticos modificou tecnicamente o trabalho docente, no propósito de um ensino coletivo, barato, útil e eficiente, para todos".

Nesse cenário, surge Jan Amos Comenius (1592-1670), um pastor protestante, que mais tarde vem a ser considerado o "pai da didática moderna". Natural da Morávia, atual República Checa e Eslováquia, Comenius nasceu no período em que o protestantismo estava em fase de desenvolvimento e conflito com o catolicismo.

Comenius escreve a primeira obra clássica sobre Didática, A *Didactca Magna*, em 1649. Foi o primeiro educador a desenvolver e propor a ideia da

fusão de diferentes áreas do conhecimento e criar princípios e regras do ensino para garantir uma educação para todos. Escreveu sobre a escola e o trabalho do professor, para demonstrar que a aprendizagem poderia ser mais agradável e fácil.

Desenvolveu ideias avançadas para a prática educativa nas escolas e sugeriu uma escola única e universal. Destacou a função do professor, como centro do processo de ensino, enfatizando os recursos de ensino, os meios para ensinar e assim,como as imagens, as gravuras, os objetos, ficariam gravados na memória.

Como os sentidos são fiéis colaboradores da memória, àquela que chega a saber graças à demonstração sensível sabe para sempre. Por certo, se já experimentei açúcar, vi um camelo, ouvi o canto de um rouxinol, estive em Roma e visitei (com atenção), tudo isso terá fixado em minha memória, de onde não poderá mais desaparecer. Por esses exemplos podemos notar que será fácil imprimir na mente das crianças, por meio de imagens sensíveis, trechos bíblicos e outras histórias (COMENIUS, 2002, p.234).

Sua ideias inovadoras para a época e sua proposta de ensinar tudo a todos era baseada no ideal da *pansofia* ou saber universal, onde se esperava que fossem dadas as mesmas condições de aprendizado a todos sobre todos os assuntos. A escola deveria, assim, respeitar o ritmo individual como estava previsto na *Didática Magna* e, pensando numa reforma do sistema de ensino, estruturou a divisão da organização escolar de acordo com a idade do educando, e com carga horária bem dividida para que o processo de ensino-aprendizagem ocorresse de maneira prazerosa.

Segundo Moliterni (2013), referindo-se ao conceito de Pansofia nos diz: "um ideal de sabedoria universal que se baseia na universalidade científica da '*natura rerum*' e na visão renascentista do homem como um microcosmo, um compêndio do universo e uma imagem de Deus, chamados a realizar a cooperação e a fraternidade entre os povos". (MOLITERNI, 2013, p. 26).

Muitas questões que hoje estão presentes nas políticas educacionais, a nível mundial, já estavam relacionadas nos escritos e pensamentos de Comenius, como a educação inclusiva, a educação para a mulher "[...] as mulheres assim como os homens, são imagens de Deus, participam da graça divina e do reino do século futuro; também são dotadas de inteligência aguçada e aptas ao saber [...]" (COMENIUS, 1997, p.91), assim como a educação continuada.

Ainda nos reafirma Moliterni (2013):

O próprio Comenius dará uma valiosa contribuição prática no desenvolvimento de uma metodologia para o aprimoramento da aprendizagem por imagens, publicando o *Orbis sensualium pictus* (texto ilustrado para a Escola Pansófica, fundada na Hungria), em 1658, e o texto *Ianua linguarum reserata* (Porta de línguas abertas), um método de fácil aprendizagem de línguas, em 1648. Outras

propostas didáticas estão presentes no *Theatrum universitatis rerum,* de 1627, a primeira forma explícita de valorização do teatro no ensino. Em todos esses contratos encontramos os fundamentos daquele sistema de mediação didática que teria sido desenvolvido cientificamente nos anos mais recentes. (MOLITERNI, 2013, p.26)

Nota-se claramente que a Didática Magna de Comenius e seus preceitos estão em comum acordo e de certa forma presentes nos ideários, nas conferências e encontros mundiais que geraram documentos emblemáticos, como a Declaração de Jontien, na sua proposta de igualdade e diversidade; na Declaração de Salamanca, sobre a educação especial e as oportunidades educacionais igualitárias, "Educação para todos", no final do século XX e início do século XXI.

Esse percurso histórico nos revela, que para além de seu tempo, Comenius expõe seus pensamentos sobre a educação para todos, antecipando às ideias de sua época, ou mesmo, sendo um precursor das questões de inclusão. Podemos afirmar que Comenius trouxe significativas mudanças para a educação, tornando-se um autor não somente atual, quanto fundamental para a educação contemporânea.

d) *Didática, Ensino e Aprendizagem na Contemporaneidade*

A didática na contemporaneidade vem se constituindo como uma teoria, mas uma ciência independente em relação às demais ciências da educação.

Para Moliterni (2013) "a didática é uma ciência jovem que assume a conotação de uma disciplina autônoma. Com código próprio, metodologias específicas, apenas a partir dos anos 70 - 80. Até então e ainda hoje, alguns casos se assume como uma mera 'metodologia didática' e serva da pedagogia ou disciplinas a que se aplica". (MOLITERNI, 2013, p. 32).

Entende-se que como uma área da Pedagogia que se refere à teoria e à prática do ensino, a didática vem se empenhando para acompanhar as transformações que ocorrem na sociedade, pois essas impactam nas formas de aprender dos sujeitos e, consequentemente, na forma de ensinar. Cada vez mais, portanto, cresce a importância da Didática, pois é ela que permite a renovação do ensino, sendo a responsável pelo sucesso que se espera no processo educativo.

Após muitos anos, diferentes olhares sobre o conceito de didática emergem em função das mudanças sociais e pela necessidade de romper com antigos paradigmas. Dentre as mais diversas reflexões, podemos citar Candau (1984), que diz:

A didática não poderá continuar sendo um apêndice de orientações mecânicas e tecnológicas. Deverá ser, sim, um

modo crítico de desenvolver uma prática educativa, forjadora de um projeto histórico, que não se fará tão-somente pelo educador, mas pelo educador, conjuntamente, com o educando e outros membros dos diversos setores da sociedade (CANDAU, 1984, p. 30).

Refletir sobre a didática geral ou especial sob a ótica de alguns autores é importante para ressaltar pontos relevantes e suas características, como campo epistemológico da pedagogia. As reflexões abrangem também, analisar a escola hoje, configurada como um espaço de diálogos democráticos, compromisso social com a cidadania, sem negligenciar as questões de inclusão.

Nesse sentido, a didática especial é conhecida como aquela que se preocupa em estudar sobre as dificuldades encontradas no instruir de cada disciplina, ou áreas específicas, propondo alternativas para que essas questões sejam solucionadas, concentrando-se não somente nos métodos de ensino, mas no sujeito da aprendizagem. Sendo que a didática geral tem a preocupação com os princípios gerais da prática em sala de aula.

Segundo Moliterni (2013),

A didática especial caracteriza-se como uma forma especial para cada um, com atenção à diversidade de desejos/necessidades educacionais, com base nas características de desenvolvimento, potencialidade, diversidade de estilos e métodos de aprendizagem, bem como as *formae mentis* particulares de cada um, para a implementação de formas e métodos de mediação (de mediadores didáticos também entendidos como "pedras que emergem") úteis para apoiar e favorecer o desenvolvimento cognitivo e socioafetivo e o processo de aprendizagem do aluno. (MOLITERNI, 2013, p. 51)

As reflexões e concepções dos autores nos constatam que a didática, geral ou especial, representa um dos pilares fundantes à construção de novos saberes e experiências no trabalho docente.

e) *Debates Educacionais: A Mudança Necessária para uma Nova Realidade Educacional*

Os debates educacionais são fundamentais para a evolução da educação, pois permitem que os participantes compartilhem conhecimentos, experiências e práticas. Além disso, os debates educacionais também são importantes para a promoção de novas práticas e metodologias de ensino, aliadas aos processos da mediação educacional no sentido de identificar as necessidades dos alunos e propor soluções mais eficazes.

Esse aumento significativo de debates, encontros e discussões sobre a educação em vários países do mundo, deixa claro que a mudança é realmente necessária para uma nova realidade educacional. Nomes como Piaget, Vygotsky, Freire, Bruner e, mais recentemente, Morin e Levy, ganham cada vez mais destaque no meio acadêmico. Seus próprios insights e contribuições para o desenvolvimento da educação se entrelaçam com os nossos estudos sobre a mediação educacional e seus processos, os quais podemos relatar resumidamente:

PIAGET (2003), estabeleceu as bases da teoria, a qual denominou de Epistemologia Genética, onde defende que a aprendizagem se trata de um processo de construção contínua ou de uma construção indefinida, quando se refere à elaboração de conhecimentos no espírito humano. Concebeu um modelo teórico que se apoia fundamentalmente sobre sua compreensão do desenvolvimento humano.

Já VYGOTSKY (2004), defende outra forma de se compreender a origem e a evolução do psiquismo humano e, como consequência, um modo diferenciado de se entender a educação. A abordagem vigotskiana, é conhecida como abordagem histórico-cultural do desenvolvimento humano. Esta vincula o desenvolvimento humano ao contexto cultural no qual o indivíduo se insere e à influência que o ambiente exerce sobre a formação psicológica do homem. Para ele, a interação social é a origem e o motor da aprendizagem e do desenvolvimento intelectual. Suas contribuições para o conhecimento dos processos mentais superiores, aprendizagem, linguagem e sistemas funcionais, envolvendo a teoria de desenvolvimento potencial, muito colaborou e ainda colabora nas atividades pedagógicas relacionadas aos alunos, com ou sem deficiência.

No mesmo sentido, FREIRE (2003) afirma que o conhecimento é produzido na interação com o mundo físico e social, com base no contato do indivíduo com a sua realidade, com os outros, incluindo aqui sua dimensão social, dialógica, inerente à própria construção do pensamento. Incorpora a visão do coletivo reconhecendo que ninguém se conscientiza separado dos outros, ninguém evolui sozinho desligado do mundo. Tudo está relacionado, está conectado e renovado continuamente.

BRUNER (1969), psicólogo cognitivista, professor em Harvard e depois em Oxford, escreveu relevantes trabalhos sobre educação e liderou o que veio a ser conhecido como "Revolução Cognitiva" na década de 1960. Foi muito reconhecido por ter dito que "é possível ensinar qualquer assunto, de uma maneira intelectualmente honesta, a qualquer criança em qualquer estágio de desenvolvimento" (1969, 73, 76), do que por qualquer outro aspecto de sua teoria, e enfatiza, que é importante levar em conta as diferentes etapas do desenvolvimento intelectual.

Destaca o processo da descoberta, através da exploração de alternativas, e o currículo em espiral. Distingue três modos de representação do mundo pelos quais passa o indivíduo: a representação ativa, a representação icônica e a representação simbólica.

Bruner percebe que muitas oportunidades de aprendizagens são desperdiçadas quando o professor torna desnecessariamente complexo aquilo que é simples. Chamou este processo de "O Poder da Apresentação", ou seja, quanto mais simples a apresentação de um conteúdo a ser aprendido, maior o poder da apresentação.

MORIN (2005) vem, há alguns anos, aprimorando a chamada teoria da complexidade e faz uma crítica ao ensino fragmentado. Defende a incorporação dos problemas do cotidiano ao currículo e a interligação dos saberes. Sustenta que estamos ofuscados pela noção reducionista de partes isoladas e separadas do todo e que o ser humano é reducionista por natureza. Para esse autor, deve-se contextualizar cada conhecimento, pois os fatos não acontecem separadamente. Isso significa ter condições de refletir, analisar, tomar consciência do que sabemos e do que ainda não temos conhecimento.

Outro teórico contemporâneo, PIERRE LÉVY (2005) aborda aspectos da aprendizagem ligados à utilização das tecnologias da educação. Afirma que o papel do estudante muda enormemente com o amplo recurso da Internet. Do raciocínio linear, sequencial, exigido por métodos expositivos convencionais, tem-se a possibilidade de se fazer uma série de interligações, inferindo-se dessa nova forma de ter acesso ao conhecimento e que a construção do raciocínio não é mais linear, mas multidimensional.

Analisando-se a contribuição desses autores para entender como a aprendizagem se processa, infere-se que a aprendizagem compreende um processo contínuo, necessitando de metodologias adequadas e diversificadas, destacando-se o papel do professor, enquanto mediador no processo ensino-aprendizagem, garantindo a manutenção de um diálogo permanente, estabelecendo conexões entre os conhecimentos adquiridos e os novos conhecimentos.

II.   Fundamentação Teórica Para o Modelo Epistemológico de Mediação Educacional

Este estudo destaca a importância de fundamentar as atividades escolares através de princípios, conceitos e ideias que possam orientar o processo da mediação educacional.

Sendo o principal objetivo da pesquisa, justamente propor elementos conceituais, teóricos e práticos, na construção de um modelo epistemológico para conceituar e implantar processos de mediação educacional para alunos com ou sem deficiência.

Trata-se de uma pesquisa bibliográfica, sistemática, que constitui todo um arcabouço teórico e metodológico, assim como, a análise dos pressupostos teóricos sobre os processos que envolvem ensino-aprendizagem, foram determinantes para extrairmos

elementos na construção do modelo epistemológico, simbolicamente representado numa perspectiva triangular, conforme ilustrado na figura 1, abaixo.

Para além dos importantes conceitos e teorias, de respeitados teóricos do ensino e aprendizagem, da psicologia, como de outras áreas educacionais, também foram decisivos os estudos realizados no Laboratório de Didática e Pedagogia Especial da *Università degli Studi di Roma "Foro Italico"*(UNIROMA4, Roma/Itália), no primeiro semestre de 2022, durante o período de mobilidade acadêmica (doutorado sanduíche).

Sob a orientação do Professor Dr. Pasquale Moliterni, coordenador do Laboratório, e com a colaboração da Professora Dra. Marta Sanches Utgé, também membro do Laboratório, foram explorados aspectos significativos relacionados às teorias da Mediação Didática, a Mediação Pedagógica e a Mediação Educacional. Através das discussões sobre os conceitos apresentados, reflexões e o autoconhecimento, o tema abordado contribuiu de maneira relevante para o alcance dos objetivos da pesquisa. Desta forma, tornaram-se também uma referência, como um dos pilares do arcabouço teórico, a compor o modelo epistemológico da mediação educacional proposto.

Figura 1: Modelo Epistemológico de Mediação Educacional numa perspectiva triangular.

Modelo Epistemilógico de Mediação Educacional
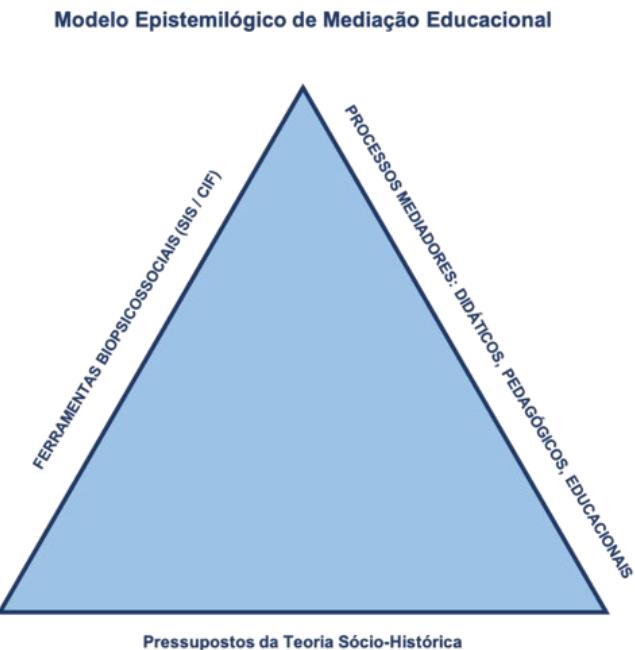
Fonte: Elaborado pela autora (2020, 2022)

Assim, o estudo está baseado em três importantes vertentes: 1ª. os pressupostos da teoria sócio-histórica, 2ª. as ferramentas biopsicossociais, com a Escala SIS (AAIDD) e a CIF (OMS), e 3ª. os processos mediadores: didáticos, pedagógicos e educacionais, consolidados através das teorias sobre a didática como ciência da mediação, as quais discutiremos em seção posterior.

a) Os Pressupostos da Teoria Sócio-Histórica

O conceito da mediação vinculado ao desenvolvimento humano, está profundamente associado à abordagem sociointeracionista de Vygotsky (1896-1924). Segundo essa abordagem, o desenvolvimento humano se dá em relação às trocas entre parceiros sociais, através de processos de interação e mediação. Vygotsky enfatizava o processo histórico-social e o papel da linguagem no desenvolvimento do indivíduo. Sua questão central é a aquisição de conhecimentos pela interação do sujeito com o meio. Para o teórico, o sujeito é interativo, pois adquire conhecimentos a partir de relações intra e interpessoais e de troca com o meio, a partir de um processo denominado *mediação*.

Uma de suas maiores contribuições para a Educação e a Psicologia consiste na sua compreensão de desenvolvimento/aprendizagem e a criação do conceito de Zona de Desenvolvimento Proximal (ZDP). Vygotsky entende que o desenvolvimento humano compreende dois níveis: o primeiro é o nível de desenvolvimento real, onde a criança consegue realizar sozinha suas atividades, referindo-se às suas funções psicológicas já construídas até aquele dado momento.

E o segundo nível de desenvolvimento é o nível de desenvolvimento potencial: conjunto de atividades que a criança não consegue realizar sozinha, mas que, com a ajuda de alguém que lhe dê algumas orientações adequadas, ela consegue resolver.

Sendo então, que o nível de desenvolvimento potencial é muito mais indicativo do desenvolvimento da criança que o nível de desenvolvimento real, pois este último refere-se a ciclos de desenvolvimento já completos, enquanto o nível de desenvolvimento potencial indica o desenvolvimento prospectivamente, e refere-se ao futuro da criança. A distância entre o nível de desenvolvimento real e o nível de desenvolvimento potencial, caracteriza o que Vygotsky denominou de Zona de Desenvolvimento Proximal (ZDP): "a distância entre o nível real de desenvolvimento, determinado pela capacidade de resolver independentemente um problema, e o nível de desenvolvimento proximal, determinado através da resolução de um problema baixo a guia de um adulto ou em colaboração de um companheiro mais capaz" (VYGOTSKI, 2009, p.133).

Desse modo, a distância entre o que a criança consegue realizar sozinha, ou seja, as funções que já amadureceram, e o que ela consegue realizar através da mediação de outra pessoa, seriam as funções que ainda estão em processo de maturação.

Assim, a obra de Vygotsky ressalta o papel da escola no desenvolvimento mental das crianças e é uma das mais estudadas pela pedagogia contemporânea.

b) As Ferramentas Biopsicossociais (SIS e CIF)

A SIS-C (*Supports Intensity Scale - Children's Version*® (SIS-C®, AAIDD, 2017) é uma ferramenta de avaliação padronizada projetada para medir a intensidade relativa das necessidades de apoio de crianças com deficiência intelectual e de desenvolvimento, entre 5 e 16 anos. A título de informação, a AAIDD é o editor, detentor dos direitos autorais e proprietário exclusivo do conjunto de ferramentas SIS, que inclui o seguinte:

– Escala de Intensidade de Suporte - Versão Adulto® (SIS-A®) (2015);
– Escala de Intensidade de Suporte - Versão Infantil® (SIS-C®) (2016);
– Escala de Intensidade de Suporte - Versão Adulto® (SIS-A®): Protocolo de Revisão Anual (2018);
– Planejamento centrado na pessoa com a escala de intensidade de suportes - versão adulta®: um guia para equipes de planejamento (2017);
– Escala de Intensidade de Suporte (SIS®) (2004) e todos os formulários de pontuação de entrevista associados; guias do usuário; currículos, manuais e materiais de treinamento; e plataformas de software eletrônico, principalmente SISOnline e SISVenture.(AAIDD, 2022, disponível em: https://www.aaidd.org/sis).

A AAIDD propôs pela primeira vez, um modelo multidimensional do funcionamento humano, no manual de 1992 (LUCKASSON *et al*., 1992) e aperfeiçoado no manual de 2002 (LUCKASSON *et al*., 2002). A estrutura teórica desse modelo possui dois elementos principais: o primeiro diz respeito às dimensões (habilidades intelectuais, comportamento adaptativo, saúde, participação e contexto) e o segundo, do suporte (apoio). Eles são definidos como recursos e estratégias que visam promover o desenvolvimento, os interesses, a educação e o bem-estar pessoal.

Segundo o modelo e estudos da AAIDD (2010), "existem evidências claras que o funcionamento humano é facilitado pela congruência entre indivíduos e seus ambientes". Entende-se assim que fornecer o suporte necessário, de acordo com as necessidades de cada indivíduo, é auxiliar em seu desenvolvimento e entender o seu contexto, analisando suas bases através de um modelo sócio ecológico. Ressalta ainda que, para o modelo sócio ecológico devem ser levados em consideração, fatores importantes como o ambiente comunitário, a escola, a cultura, o trabalho, o lazer, enfim a vida diária.

Sobre a *Escala de intensidade de Suporte* (SIS), o objetivo desta ferramenta é auxiliar na avaliação dos níveis de apoio que a criança, jovem ou adulto necessita nas suas atividades de vida diárias, nas atividades de vida em comunidades, nas atividades de aprendizagem ao longo da vida, saúde e segurança, atividades sociais, dentre outras. Desta forma, conhecer a sua composição e seções apresentadas na escala, podem ser significativamente favoráveis aos processos de escolarização, possibilitar novas visões sobre as práticas desenvolvidas, cujas tendências ainda se focam nas questões clínicas e limitantes.

É preciso avaliar o sujeito, não apenas pelas suas possibilidades intelectuais, mas também àquelas de participação na vida social. A interação com o ambiente social em todas as suas dimensões, aproxima as concepções da AAIDD à teoria sócio-histórica de Vygotsky.

Ainda, os conceitos da AAIDD destacam um modelo multidimensional centrado no apoio nas diferentes áreas de desenvolvimento do sujeito: habilidades intelectuais, comportamento adaptativo, saúde, participação e contexto.

Aliada à ferramenta SIS, outra ferramenta importante para o processo de embasamento teórico a que este estudo se propõe, é a *Classificação Internacional de Funcionalidade, Incapacidade e Saúde* (CIF, OMS, 2001), tendo em vista seus parâmetros específicos para os sistemas educacionais, que podem fornecer informações sobre a necessidade e uso de serviços. "A CIF pode ser usada em todos os contextos educacionais para dar suporte à continuidade durante o ingresso na vida escolar, e durante as transições de um nível educacional para o próximo ou para a fase subsequente de trabalho e emprego" (Manual CIF, 2013, p.77).

Em cenários educacionais, em sua versão preliminar, o Manual Prático para o uso da Classificação Internacional de Funcionalidade, Incapacidade e Saúde – CIF (OMS, 2013), nos diz o seguinte:

> A CIF é útil em contextos educacionais porque ela ajuda a superar abordagens passadas usadas na descrição ou rotulação de incapacidade que podem ter levado à segregação ou discriminação na educação. O modelo biopsicossocial subjacente da CFI não nega o impacto das deficiências na funcionalidade, na verdade ele identifica que a funcionalidade é importante para participação em uma dada idade. Através do seu componente de atividades e participação, a CIF aprimora a descrição das condições de saúde e de deficiências com informações focadas no aprendizado e desenvolvimento. (OMS, 2013, p.66)

Utilizada em vários contextos e finalidades no mundo todo, a CIF se tornou uma ferramenta para ser usada com diversos propósitos, como: estatísticas, pesquisas, clínica, saúde e sistemas educacionais, oferecendo uma linguagem padronizada e conceitual e se tornando um modelo para organização e documentação das informações. "Ela conceitualiza a funcionalidade como uma interação dinâmica entre a condição de saúde de uma pessoa, os fatores ambientais e os fatores pessoais" (OMS, 2001). Como "uma síntese biopsicossocial", reconhece o papel dos fatores ambientais na criação da incapacidade, além do papel das condições de saúde (Üstün *et al.* 2003, citado por Manual CIF, OMS, 2013, p.3).

c) Processos Mediadores: Mediação Didática, Pedagógica e Educacional

Como nos referimos anteriormente, os estudos realizados no Laboratório de Didática e Pedagogia Especial da UNIROMA4, foram determinantes para embasar a criação do modelo epistemológico de mediação educacional, na contribuição da didática, considerando que é uma ação pedagógica, em conjunto com os demais referenciais teóricos.

Estudos baseados numa nova dinâmica da didática, "uma didática autônoma e de mediação" (Damiano, 1993), e numa nova competência do professor que possa impulsionar os processos mediadores, segundo Moliterni (1997 *apud* Moliterni, 2020) ressalta: "Cada professor tem a tarefa de preparar e usar objetos de mediação apropriados, trabalhar na construção de novos materiais, dinâmicos e contextualizados, em resposta às características pessoais de cada aluno ou grupos de formação, num processo evolutivo e co-evolutivo".

Ainda, segundo Moliterni (2007 *apud* Moliterni, 2020), "Todo professor competente deve ser capaz de trabalhar nesse meio-termo que é o ensino, fruto de processos mediadores de natureza pedagógica, didática e educacional. A competência de cada professor, de qualquer tipo e para cada situação, diz respeito, de fato, à execução hábil de processos de mediação."

Sobre o processo da mediação, Moliterni (2007), nos diz:

A mediação é uma característica exclusiva da interação humana e pode ser considerada o fator determinante da autoplasticidade dos homens; pressupõe um diálogo aberto, um estilo de vida dialógico, vida consigo mesmo e com o próximo. A falta de mediação priva o indivíduo de sua capacidade de modificar-se e pode ser considerada como a principal causa das diferenças de desenvolvimento cognitivo e carências. (MOLITERNI, 2007, p. 254)

A *Mediação Pedagógica* se refere às questões de competência pedagógica, onde se evidencia na comunicação professor aluno e nas relações educacionais significativas. O saber escutar e interagir com os alunos e demais sujeitos presentes na comunidade escolar, como bem nos relata Paulo Freire (2002), são saberes necessários à prática docente, onde se inclui a exigência de saber escutar:

Somente quem escuta paciente e criticamente o outro, fala com ele, mesmo que, em certas condições, precise falar a ele. O que jamais faz quem aprende a escutar para poder falar com é falar impositivamente [...] O educador que escuta aprende a difícil lição de transformar o seu discurso, às vezes necessário, ao aluno, em uma fala com ele. (FREIRE, 2002, p. 127)

A *Mediação Pedagógica* deve ser um processo que leve em conta as transformações através da ação, naqueles que dela participam. É fundamental que o professor, enquanto mediador, esteja sensibilizado a reconhecer e compreender as transformações dos alunos, das práticas e das circunstâncias e assim possa também transformar-se no processo.

Parece ainda oportuno enfatizar a importância do professor entender e valorizar o potencial de cada um, sendo um agente inclusivo, atento a cada uma das experiências vividas por eles, encorajando, estimulando e orientando, por meio de um relacionamento interpessoal educativo, na promoção do crescimento saudável e sustentável de todos. "A mediação pedagógica promove relações educativas, ou seja, boas relações interpessoais, para a valorização de cada pessoa, nenhuma excluída". (Moliterni, 2020).

Quanto ao processo da *Mediação Didática*, levando em consideração o objetivo do ensino que é viabilizar a aprendizagem a todos os estudantes, assim como, a multiplicidade de sujeitos, saberes, espaços e tempos, que não deve ser desconsiderada na compreensão nas práticas escolares, uma nova competência dos educadores deve ser analisada no sentido de que sejam observadas todas as necessidades educativas de cada um dos alunos, auxiliando-os significativamente nos seus processos de aprendizagem e utilizando as novas teorias que envolvem a mediação, especialmente a mediação didática, com todos os seus recursos e processos de transformação para o ensino.

Segundo Moliterni (2020), sobre as competências dos professores no processo da mediação didática, nos relata que:

A tarefa especifica de cada professor é justamente levar em consideração tal processo cansativo e acompanhar e orientar cada aluno nessa jornada, com formas e métodos, mediação cuidadosa e adequada, de acordo com o processo evolutivo de cada aluno e das condições pessoais e contextuais, que podem constituir uma dificuldade de aprendizagem. E esta é a personalização do caminho de treinamento e uma experiência significativa inclusiva. (MOLITERNI, 2020, p. 14)

E ainda que:

Para ser um bom profissional, o professor deve, portanto, adquirir e continuar a desenvolver uma competência didática entendida como uma proposição de atividades de conhecimento acessíveis aos sentidos e para a mente de cada aluno, no entrelaçamento de cognição e emoções, em um caminho congruente e significativo. (MOLITERNI, 2020, p. 14)

O estudo sobre a didática como ciência dos processos mediadores, é citado por Canevaro (1999 *apud* Moliterni, 2013, p. 111) como "a dimensão teórico-prática da pesquisa didática encontra um lugar oportuno no contexto da concepção do ensino como ação de mediação", e ainda nos estudos de Damiano (2013, *apud* Moliterni, 2013, p. 111), que formula sua teoria dos *Processos Mediadores*, convencido de que a ação de ensinar se configura como um objeto de análise relativamente inexplorado. "Sua teoria de uma

concepção didática não se reduz ao ensino-aprendizagem, contribuindo assim, para fundar a didática como ciência".

Damiano (1989) define o Mediador Didático como todo "dispositivo" que torna efetiva a relação ensino-aprendizagem em todas as fases do desenvolvimento e em todos os seus aspectos: atividades realizadas, organização dos espaços, auxílios e materiais utilizados.

Nesse sentido, é possível identificar formas eficazes da mediação didática e serem utilizadas para a construção do conhecimento pelos alunos, visto que se organizam entre a realidade e a representação transformando experiências do contexto real/externo que são reelaboradas como conteúdos acessíveis ao aprendizado.

Segundo Damiano (1983, p.230), os mediadores didáticos são divididos em quatro tipos: ativos, icônicos, analógicos e simbólicos. Sendo que os mediadores *ativos* facilitam o incentivo e a motivação,

referindo-se diretamente a uma atividade, ou seja, o aprender fazendo. Os mediadores *icônicos* utilizam as representações das linguagens gráficas e espaciais, como fotografias, mapas geográficos, esquemas, diagramas ou mapas conceituais. Representam as características da realidade através das imagens, e os mediadores *analógicos* referem-se às atividades de simulação e/ou ficção, como os jogos (RPG), dramatizações, etc. E por fim os mediadores *simbólicos* que referem-se aos símbolos, sinais e códigos (termos alfanuméricos), que expressam a realidade.

Conforme descrito na *Tabela dos Mediadores Didáticos*, (Quadro 1), os tipos de mediadores podem ser concebidos "como um sistema operacional que regula a distância (descentramento cognitivo-emocional) em relação a realidade". Ou seja, se interpõem entre a realidade e o contexto didático como uma interface entre o sujeito e o objeto do conhecimento, a fim de promover a aprendizagem. (Moliterni, 2016, p. 124).

Quadro 1: Tabela Dos Mediadores Didáticos. (E. Damiano, 1983)

Fonte: Damiano, L'azione didattica, p.230, apud Moliterni, Didattica e Scienze Motorie, 2013, p.124)

Chamamos a atenção para o primeiro livro associando imagens e palavras, escrito por Comenius, em 1658, o *Orbis Sensualium Pictus*, com a finalidade de facilitar o aprendizado de conceitos por alunos com dificuldade, que não liam e não entendiam corretamente, associando palavras e imagens de forma didática. (Moliterni, 2020, p.15).

Importante também citar, mais recentemente, Jerome Bruner (2006) em seus ensaios sobre a forma e estruturação do conhecimento, escreve sobre três formas ou ações apropriadas para o domínio do conhecimento: a representação operativa (ações apropriadas visando um certo resultado); a representação icônica (conjunto de imagens ou gráficos que configura um conhecimento, sem defini-lo completamente); e a representação simbólica, (conjunto de regras ou proposições simbólicas desenhadas a partir de um sistema simbólico). Ressalta ainda que ações, imagens, gráficos ou símbolos variam em dificuldade e utilidade para diferentes faixas etárias e experiências pessoais. (BRUNER, 2006, p. 56).

Ainda sobre a *Tabela de Mediadores Didáticos* de Damiano (1983), representada no Quadro 1, Moliterni (2013) nos apresenta um novo formato de representação da tabela de Damiano, com algumas significativas adaptações. Segundo ele: "as primeiras formas de representação da realidade pelas crianças são do tipo ativo e corporal, e, progressivamente, numa ação de distanciamento da realidade, tornam-se gráfico-icônicas, analógicas e plenamente simbólicas [...]". Como vemos no Quadro 2, a diagonal que segue entre realidade e representatividade, no sentido contrário do Quadro 1, evidencia aspectos de realidade maior nos ativos e menor nos simbólicos, assim como a representação abstrata se apresenta menos presente no tipo de mediador ativo e mais presente no tipo simbólico. "A linha diagonal constitui uma espécie de plano inclinado útil para promover processos didáticos eficazes e inclusivos." (Moliterni, 2013, p. 260).

Quadro 2: Tabela Dos Mediadores Didáticos com adaptações de Moliterni P. (2013).

Fonte: Moliterni, Didattica e Scienze Motorie (2013, p. 260).

A importância na forma de representação desta tabela, como destaca Moliterni (2013), trata-se de fornecer ao professor, elementos didáticos que possam privilegiar o ensino-aprendizagem, num contexto inclusivo, promovendo uma versatilidade prática e participativa, pois vai permitir a sua utilização de acordo com as potencialidades de cada aluno, e a percepção das suas dificuldades pelo professor.

Sobre a *Mediação Educacional*, percebe-se que esta se relaciona com os aspectos organizacionais das instituições escolares. A importância da escola assumir a função de mediação, entre o aluno e as relações de aprendizado que envolvem a cultura, a valorização em propiciar o seu desenvolvimento, experiências positivas no próprio contexto educativo e social, permite a construção de um processo formativo com a participação de todos os envolvidos, e ainda favorecer o professor, através dos aspectos instrumentais e de apoio, com base nos processos da mediação pedagógica e didática, como anteriormente citados.

Finalmente, partir dos modelos apresentados nos Quadros 1 e 2, podemos relembrar a teoria de Bruner (2006), citando as suas estruturas (modos de representação) ativas, icônicas e simbólicas, ou Vygotsky (1996), com as características interacionistas que o sujeito estabelece com as pessoas que o cercam, seja na escola ou em outro ambiente, e exercem portanto um papel fundamental no desenvolvimento humano, "pois é a partir da internalização dos símbolos (signos) socialmente construídos que as funções intra psicológicas se constituem". O que vem a ressaltar a gênese social da consciência humana, defendida por Vygotsky.

III. Considerações Finais

Durante a pesquisa realizada, foram estudadas as teorias de renomados teóricos do ensino, que se mostraram fundamentais para o processo de ensino-aprendizagem. Muitas afirmam que o processo de ensino deve ser mediado, ou seja, que o professor deve atuar como um intermediário entre o conhecimento e o aluno, auxiliando-o a construir seu próprio conhecimento e a desenvolver suas habilidades cognitivas.

A pesquisa também estudou os processos mediadores através das teorias da mediação didática, que se complementam às teorias da mediação pedagógica, e a educacional enfatiza a importância da relação entre a escola e a sociedade, na compreensão de que a escola deve formar cidadãos críticos e conscientes de seu papel na sociedade. Já a mediação didática se concentra nas estratégias e técnicas que auxiliam o professor no processo de ensino-aprendizagem funcionando como uma interface entre a realidade e o contexto didático, promovendo a aprendizagem. Espera-se que essas teorias possam ser aplicadas na prática educativa, contribuindo para a melhoria da qualidade do ensino e para o desenvolvimento dos alunos.

A construção de uma escola que fomente o desenvolvimento de culturas, políticas e práticas inclusivas não resulta simplesmente da adequação às legislações vigentes. Aprofundar-se nas discussões, debates e estudos científicos, dos processos educacionais, estendendo-se aos processos de Mediação Educacional, possibilita perceber necessidades de mudança, flexibilização nas ações pedagógicas, além de avaliar continuamente o processo educativo.

Compreender a mediação educacional a partir da teoria de Vygotsky é fundamental para este universo. Segundo o teórico, a mediação não deve ser encarada como um simples ato, mas como um processo. É necessário compreender que ela é algo mais do que apenas uma interferência.

Observamos a importância, não somente dos recursos utilizados, mas todo o arcabouço sócio cultural a ser oferecido à pessoa, em cada fase do desenvolvimento por meio do processo da mediação educacional, desde o momento da entrada da criança na Educação Infantil, facilitando várias etapas em sua

caminhada por entre os ciclos, não somente os de ensino, mas refletindo em todos os demais processos e história de vida daquele indivíduo. Considerando que o seu desenvolvimento não se dá apenas por linhas biológicas, mas que o mesmo é um ser histórico e social, que se constitui em interação com o meio em que vive.

Por fim, desejamos que esse estudo possa estimular a realização de novas pesquisas, bem como contribuir para os processos educacionais dos alunos, indo além das relações de ensino e dos processos de aprendizagem vivenciados na escola. Além disso, que possibilite explorar suas diferenças e sua apropriação dos bens simbólicos disponíveis na cultura e nos conhecimentos historicamente construídos.

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The Effect of Augmented Reality on the Development of Social Skills of Children with Autism

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Summary- The use of new technologies in the process of educational intervention is undoubtedly a basic and valuable tool for teachers. Specifically, using new forms of representation of educational content and providing a teaching practice that enhances the user's visual perception of the real environment, is a key factor favoring the educational inclusion of students with special educational needs. In the present study we will investigate whether teachers believe that the use of augmented reality (AR) in children with autism affects their social skills, as well as the possibilities of augmented reality in enhancing the communication skills of children with ASD in areas speech, social interaction, pretend play, reading, enhancing visual perception, imitative ability, attention management and perception of the physical world.

THEEFFECTOFAUGMENTEDREALITYONTHEDEVELOPMENTOFSOCIALSKILLSOFCHILDRENWITHAUTISM

Strictly as per the compliance and regulations of:

The Effect of Augmented Reality on the Development of Social Skills of Children with Autism

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Summary- The use of new technologies in the process of educational intervention is undoubtedly a basic and valuable tool for teachers. Specifically, using new forms of representation of educational content and providing a teaching practice that enhances the user's visual perception of the real environment, is a key factor favoring the educational inclusion of students with special educational needs. In the present study we will investigate whether teachers believe that the use of augmented reality (AR) in children with autism affects their social skills, as well as the possibilities of augmented reality in enhancing the communication skills of children with ASD in areas speech, social interaction, pretend play, reading, enhancing visual perception, imitative ability, attention management and perception of the physical world.
Keywords: autism, educators, augmented reality (AR), social skills.

I. Introduction

In the international literature there is frequent reference to the use of augmented reality in education. Undoubtedly, through research it has been proven that the application of augmented reality in the educational process is an important tool for teachers as it brings significant benefits to the learning process. According to researchers, this method is considered important as it enables students with autism to interact directly and in real time with the help of virtual objects. According to Wu and colleagues (2013), this method is considered a separate event due to the fact that the objects on the one hand may not be directly accessible in the natural world or for reasons of danger, or due to temporal or spatial distance, or because their dimensions do not allow it, or because it may concern imaginary creations. The user through augmented reality has the ability to interact independently of the object and any difficulties that may arise in a real situation (Dragomir et al., 2018).

Also, an important characteristic of augmented reality is the fact that it creates the appropriate framework according to which the user can obtain the information he needs every time (Kolomoiets et al., 2018). This has the result that the student with autism receives the information, but also understands it more easily, with the aim that the student can better build the correct cognitive structures for the fact, phenomenon and object under study (Lee, 2012).

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According to research by Di Siero and his colleagues (2013) augmented reality has the potential to increase students' interest in approaching knowledge. In this way, their motivation and attachment to knowledge increases, they put in more effort and can achieve better learning results (Chen et al., 2016; Casas et al., 2012). The easier and more effective acquisition of knowledge through augmented reality occurs because this method has the ability to visualize complex phenomena or objects with which the user can interact with them. This results in the student approaching and understanding cognitively difficult concepts or situations in their environment in an easy and fun way (Chen et al., 2016; Bhatt et al., 2014). Thus, they can develop skills, critical thinking, cooperation and communication with others, learn to solve daily problems, develop techniques of reflection and self-guided learning process (El Seoud et al., 2019; Nazaruddin et al., 2018).

II. Augmented Reality and Autism

a) *The impact of Augmented Reality tools in the education of children with ASD*

According to research data, people with autism show deficits in key developmental areas. In a study conducted by Casas et al. (2012) implemented the augmented reality-based Kinect device for people with ASD, in which an augmented mirror with virtual objects was designed in which the user could see himself. The Kinect system is equipped with two cameras (one infrared camera and one video camera) and a standard video stream and a depth stream – images are presented at the same time. The sample consisted of five children with autism and two typically developing children aged three to four. The results of the research showed that one child could not respond to the game, while another started to play, but after a while stopped the game and continued. The other three children played and showed more skills than the other children, while a special impression was presented by one child, who played like the children of typical development.

One of the hallmarks of autism is a lack of spontaneous pretend play, coupled with an absence of social interaction and communication. Thus, Bai et al. (2013) in their research studied the application of a glass game for children with autism. Through this research they aimed to examine the effects of augmented reality in relation to pretend play by

superimposing virtual content on the physical world in AR.

The study sample consisted of twelve children, ten boys and two girls, aged 4 - 7 years. The experiment consisted of two conditions, one with the use of augmented reality and one with no use of it. The augmented reality system is designed by bringing a mirrored mirror enriched with AR augments. This system consisted of a 3x2 meter visualization screen, a projection or retro-projection system, depending on the room where it is to be installed, a computer, a Kinect device and speakers. The Kinect was equipped with two cameras, an infrared and a video camera with a resolution of 640x480 pixels. The reason the Kinect device was used is that it enables the development of not only a standard video stream but also a depth stream in the images. images captured by the Kinect were displayed mixed with virtual information, creating for users an augmented mirror where they could see what was embedded in the augmented scene. The system was designed for use by users, who could play with two different roles both as a child and as a teacher.

This system has been implemented by creating a set of subsystems that deal with different tasks. Depending on the user's activity and actions, the output system creates an augmented environment by incorporating real-world images, video, audio, and virtual elements. Research results showed that students using the AR system increased pretend play and showed more engagement and engagement compared to a non-increased condition.

In a study by Qin et al. (2014) implemented an experiential Augmented Reality system for children with autism. Specifically, there was an autism simulator that used augmented reality. The purpose of the present research is the construction of an experiential system that uses augmented reality with the aim of imitating perceptual symptoms in autism. In addition to reproducing symptoms, it can change patterns or severity with the environment to quantify symptoms. This system helps people with autism adapt to activities of daily living, such as the focus assist system.

According to Almeida da Silva et al. (2015), the method used is STAR (Speech Therapy with Augmented Reality) together with speech therapy through augmented reality, aiming to integrate augmented reality into communication interventions by combining elements of augmented and alternative communication and applied behavior analysis. This method enables children to show significant improvement in the area of speech.

The synthesis of results shows that people with autism have difficulty understanding the emotions of others. They have difficulty recognizing and understanding critical non-verbal behaviors as a result of which they ignore non-verbal movements and social cues, such as facial expressions, which affect the social interaction of individuals. However, learning non-verbal behaviors through augmented reality shows positive results. Specifically, in a study carried out by Chen et al. (2016) used a video of nonverbal facial cues in children with autism to enhance perceptions and judgments of facial emotions. Thus, they tried to train children with autism to imitate the expressions and emotions of the face shown in the video to improve their social skills. Augmented reality is also used in conjunction with Video-modeling storybook (VM) to train children to imitate non-verbal behaviors and enhance social interaction. The results of the research showed that the ARVMS intervention contributed to the understanding of expressions and emotions, increased children's visual index and their attention to non-verbal social patterns.

In a study conducted by Cihak et al. (2016) investigating the learning of basic hygiene techniques in children with autism and the assessment of augmented reality for the completion of a chain task of elementary school students with autism. The object of study of this research was to combine digital information in relation to the real world and then examine the effects of augmented reality with the aim of teaching the student a series of steps. In particular, with augmented reality, students are transported to the bathroom of a special education classroom, and also, there is a breakdown of illustrated five-step tasks as visual support. With the fourth generation iPod touch Aurasma (2014) app, there are individual toothbrushes, toothpaste and paper cups. In the research process, one student uses a picture exchange system to communicate, while the other two students use a Pragmatic Organization Dynamic Display (PODD) book to communicate.

The results of the research were positive and encouraging, showing that children with autism can be taught better with the contribution of visual media. They showed that all the students learned the process of brushing their teeth, retaining this skill nine months later. Furthermore, research has shown that students can learn the entire routine without interruption and complete the mastered steps.

In a study by Liu et al. (2017), had as its object the possibility for social interaction and communication through the Smartglasses Augmented Reality system. The purpose of the research was the ability to guide emotion recognition, face-directed gaze, eye contact, and behavioral guidance. The Brain Power System (BPS), is a digital behavioral assistant that helps collect quantitative data using smart glasses and artificial intelligence. The sample consisted of two boys with autism, aged eight and nine. The results were positive and showed that children with autism were able to improve non-verbal communication. Specifically, they showed improved eye contact and social interaction, while one student showed decreased emotional engagement and behavioral self-regulation, and the second showed improvement on both levels.

The use of smart AR sunglasses in the development of social communication is an important aid for children with autism. Specifically, in a study conducted by Sahin et al. (2018), looked at the safety as well as the lack of negative effects of the aid worn by the sample. The research involved 18 children and adults, from 4.5 to 21.5 years old, men and women, who were in a wide spectrum of autism with high levels of severity. However, to collect the research data the researchers used the Enhanced Brain version, the older Brain Power Autism System (BPAS) and Google Glass (Google, Mountain View, CA, USA). The results showed that there were no significant negative effects when using the AR glasses, while there was only one case of dizziness, one case of eye strain and one case of nasal discomfort. Of course, after using the AR glasses they showed high heat, which was not particularly worrying.

Also, another research by Lorenzo et al. (2019), showed that the application of augmented reality affects and improves the social skills of children with ASD. The research was carried out through a Quicker Vision application and the instrument used to collect the data was the Autistic Spectrum Inventory of Riviere. The sample was 10 boys and one girl. Regarding the experimental group participated in augmented reality activities, while the control group participated in the same intervention without the use of the tool, for 20 weeks with 15 minutes per session every 2 times a week. This resulted in statistically significant differences between the two groups.

Social story creation through augmented reality in children with ASD was studied by Syahputra et al. (2018), and aimed to enhance children's intrinsic motivation through storytelling to affect children's emotional change, socialization, and empathy with others. The medium used to achieve the research is 3D animation and the Leap Motion Controller. Three children with ASD took part in the research. The results of the research showed that the specific system is considered suitable for the treatment of children with ASD, the visualization of a story, the use of colors and images create a fun, attractive and interesting educational context, motivating children to participate in the educational process.

In the education of children with autism it is important to have the motivation to mobilize the interest of children with ASD but also to improve their skills to interact with the social environment. Thus, the question investigated in the study by Rega et al. (2018) on the use of augmented reality in increasing the motivation of children with ASD. For this reason, new technologies such as Google Scholar, PubMed, CiteSeerX and IEEEXplore were used. The results of the research showed that the use of augmented reality can enhance the motivation of children with autism, encourage the communication, social, language and cognitive skills of children with ASD.

The research of Escobedo et al. (2014), implemented the Mobile Object Identification System, which enabled teachers to use digital content on physical objects. The object of the research was the possibility of augmented reality in being able to increase the selective and sustained attention of children with autism during object discrimination treatments and to acquire more positive emotions. The sample of children is 12 low-functioning children aged 3-8, mean age (m) was 5.08 and standard deviation (SD) was 0.9, and 7 teachers. The results showed that 62% while using Mobis the students showed selective and sustained attention in 06:18, while before using Mobis they stayed attentive for 01:05 minutes, and after Mobis it decreased again, to 58 seconds (p = 0.0002). Also the use of Mobis showed that it affected more positive emotions among students during the treatments an increase of 24%, 2:13 minutes during, while the time before was 0:01, and 0:07 after using Mobis, p = 0.004).

III. Methodology

The present research is a descriptive review on augmented reality and its educational intervention on children on the autism spectrum. We will investigate the role of augmented reality as an effect of social support in the education of children with autism, as well as the investigation of teachers' attitudes in relation to the virtual possibilities of augmented reality and its importance in the cooperation and communicative behavior of students with autism.

a) Objectives

As we have mentioned before, the main objective of this work is to determine the intervention of augmented reality in the education of children with autism, as well as the investigation of teachers' attitudes in relation to the virtual possibilities of augmented reality and its importance in cooperation and communication behavior of students with autism.

✓ To consider increasing motivation to learn.
✓ To explore how augmented reality can help to enhance emotional and visual contact and gaming skills.
✓ To determine how augmented reality can affect the basic hygiene techniques of students with autism.
✓ To determine the conditions of social interaction from the use of augmented reality.
✓ To consider e-learning support in the educational process, as well as the development of cooperative and communicative behavior, practical perception, development of verbal communication, strengthening of cooperative and symbolic play.

Considering the above objectives, the hypotheses are as follows:

Hypothesis 1: Teachers emphasize increasing motivation to learn and enhancing emotional and visual contact and play skills.

Hypothesis 2: The support of the educational process with the use of e-learning is a factor that contributes to the development of cooperative and communicative behavior, practice of perception, development of verbal communication, strengthening of cooperative and symbolic play.

Hypothesis 3: The contribution of augmented reality does not create conditions of alienation of students with autism.

b) Sample

The sample, for the question of this research, consisted of teachers of secondary school general education in the area of Attica. 427 teachers, 286 (67%) men and 141 (33%) women with experience in special education, 147 teachers from all over took part. Finally, teachers have a bachelor's degree, a smaller part, 286 teachers, has completed a postgraduate degree, and 23 teachers has a doctorate.

1. Sample distribution according to Gender

2. Sample distribution according to studies
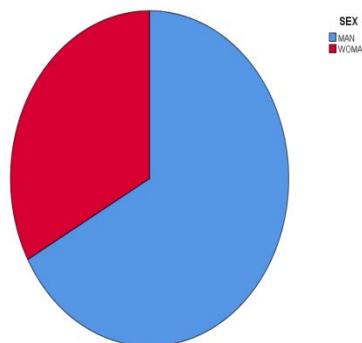
c) Instrument

For the research question we select the questionnaire with which we will collect the information that will be given to us by the respondents. Questions will be closed-ended and individuals will be asked to answer by selecting a number from the five. Completing, encoding and analyzing data will be easier. Also, with the questionnaire, subjects are given the opportunity to answer all in exactly the same frame of reference. Participants were asked to complete an anonymous questionnaire that included 12 closed-ended questions from which teachers were asked to choose one of the suggested options. The questionnaire refers to teachers' views on the use of Social Welfare Robots in children with autism. The time required to complete it was 20 minutes and it was completed at the end of the course. The questionnaire is listed at the end of the text.

The type of questions will be of the closed type and will be the scale graded from the negative point to the positive and will be asked by the subject of the survey to choose one of the five.

The method of questioning will be done by visiting the researcher in a group of people, that is, at school. So we seek to involve many people in the research in a minimum of time and at the same time. We also have the possibility of clarification and more information to solve questions that may arise during the completion of the questionnaire.

Data analysis

The analysis of the data was descriptive to see the frequency in the teachers' answers and the percentage in each answer.

IV.   RESULTS ANALYSIS

a) Descriptive study

Initially, the following tables give a picture of gender, studies, previous service in general and special school and the participation of teachers in training programs.

Table 1: Distribution of a sample based on gender and on the qualifications

GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Man	286	67,0	67,0	67,0
	Woman	141	33,0	33,0	100,0
	Total	427	100,0	100,0	

From table 1 it can be seen that the majority of the sample are men, at a rate of 67%, while women make up 33% of the sample.

Table 2: Distribution of a sample based on training in special education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5-10 year	204	47,8	47,8	47,8
	11-15 years	154	36,1	36,1	83,8
	16-20 years	25	5,9	5,9	89,7
	21-25 years	44	10,3	10,3	100,0
	Total	427	100,0	100,0	

From the above table we find that teachers with less educational experience have more years in special education, while those with more years in education have less educational experience in special education.

Table 3: Distribution of a sample based on training in general education

Years_of_Service_in_General_Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5-10 year	35	8,2	52,2	52,2
	11-15 years	32	7,5	47,8	100,0
	Total	67	15,7	100,0	
Missing	System	360	84,3		
Total		427	100,0		

Looking at the above tables, tables 2 and 3, work experience in general and special education can be seen. 47.8% have experience in the specialty for 5-10 years and 36.1% up to 15 years.

Table 4: Sample distribution based on the master's degree and doctoral details

Studies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	University	118	27,6	27,6	27,6
	Doctorate	23	5,4	5,4	33,0
	Master Degree	286	67,0	67,0	100,0
	Total	427	100,0	100,0	

From table 4 we can see that the majority of the sample holds a master's degree, at a rate of 67%, while a small percentage holds a doctorate, 5.4%. Finally, in 27.6 studies have remained at the basic degree, without any academic development.

Table 5: Distribution of a sample based of the answers given to all teachers

		N	%
1. Technological learning, using new forms of content representation and delivery education services with the strengthening of visual perception of the real environment of the user, favors the social development of children with ASD.	Totally disagree		
	I disagree		
	Neither disagree -nor agree		
	I agree	262	61,3%
	totally agree	165	38,6%
	Total	427	100%
2. Virtual games are intended to encourage, concentration and imagination through it repetitive motion and vision feedback of children with ASD.	Totally disagree		
	I disagree		
	Neither disagree -nor agree		

		I agree	113	26,4%
		totally agree	314	73,5%
		Total	427	100%
3.	The use of augmented reality improve social interaction, identifies and understands human emotions hand-eye coordination in children with ASD.	Totally disagree		
		I disagree		
		Neither disagree -nor agree		
		I agree	106	24,8%
		totally agree	321	75,2%
		Total	427	100%
4.	Augmented reality helps to integration of the physical and the digital world and mimics current strategies for the management of attention in autism.	Totally disagree		
		I disagree		
		Neither disagree -nor agree		
		I agree	285	66,7%
		totally agree	142	33,2%
		Total	427	100%
5.	The use of an ASD simulator based on augmented reality, can mimic perceptual hyper responsiveness of the symptoms of children with ASD in activities of daily living.	Totally disagree		
		I disagree		
		Neither disagree -nor agree	14	3,2%
		I agree	157	36,8%
		totally agree	256	60%
		Total	427	100%
6.	The integration of Augmented Reality in communication interventions, connecting elements of the augmented strategy and alternative communication and of applied behavior analysis shows benefits in speech-language therapy.	Totally disagree		
		I disagree		
		Neither disagree -nor agree	21	4,9%
		I agree	176	41,2%
		totally agree	272	63,7%
		Total	427	100%
7.	Students with autism tend to they learn best by using visual media.	Totally disagree		
		I disagree		
		Neither disagree -nor agree		
		I agree	324	75,8%
		totally agree	103	24,1%
		Total	427	100%
8.	Learning non-verbals behaviors through Augmented Reality improves social skills of children with ASD.	Totally disagree		
		I disagree		
		Neither disagree -nor agree		
		I agree	188	44%
		totally agree	239	56%
		Total	427	100%

9. The use of AR smart glasses in children with Autism affect the social interaction of children with ASD.	Totally disagree		
	I disagree		
	Neither disagree -nor agree		
	I agree	236	55,2%
	totally agree	191	44,8%
	Total	427	100%
10. The creation of social history through of Augmented Reality in children with Autism affects the emotional change, empathy with others and social interaction of children with ASD.	Totally disagree		
	I disagree		
	Neither disagree -nor agree		
	I agree	129	30,2%
	totally agree	298	69,8%
	Total	427	100%
11. Augmented Reality (AR) can increase the motivation of children with ASD to area of social and everyday skills.	Totally disagree		
	I disagree		
	Neither disagree -nor agree		
	I agree	246	57,6%
	totally agree	181	42,4%
	Total	427	100%
12. The application of augmented technology reality contributes to its improvement effectiveness of cognition and developmental training of children with ASD.	Totally disagree		
	I disagree		
	Neither disagree -nor agree		
	I agree	196	45,9%
	totally agree	231	54,1%
	Total	283	100%

Above in table 5, the percentages of responses for the questions of the scale given by the participants are presented. Uniformity is observed in the answers without particular deviations between the respondents. Specifically, it is observed that in question 1 "Technological learning, using new forms of content representation and delivery education services with the strengthening of visual perception of the real environment of the user, favors the social development of children with ASD" , 63.3% said they agreed, while 38.6% said they strongly agreed. In question 2 "Virtual games are intended to encourage, concentration and imagination through it repetitive motion and vision feedback of children with ASD" 73.5% state that they completely agree, while 26.4% state that they agree. According to question 3 "The use of augmented reality improve social interaction, identifies and understands human emotions hand-eye coordination in children with ASD" the largest percentage of the sample declares that

they completely agree, at a rate of 75.2%. In question 4 "Augmented reality helps to integration of the physical and the digital world and mimics current strategies for the management of attention in autism" it is observed that 66.7% of the sample agrees, while 33.2% stated that they completely agree. The use of an ASD simulator based on augmented reality can mimic the perceptual over-responsiveness of ASD children's symptoms in activities of daily living, our survey shows that 60% strongly agree. While incorporating augmented reality into communication interventions, evidence linking augmented strategy and alternative communication and applied behavior analysis shows benefits in speech therapy, 63.7% strongly agree, while 41.9% agree. In question 7 "Students with autism tend to they learn best by using visual media" the largest percentage of the sample states that they agree at a rate of 75.8%, while 24.1% state that they completely agree. Learning non-verbal behaviors through augmented reality improves

the social skills of children with ASD, as evidenced by 56% of the sample strongly agreeing and 44% agreeing. The use of AR smart glasses in children with Autism seems to affect the social interaction of children with ASD and 55.2% agree and 44.8% strongly agree. In question 10 "The creation of social history through of Augmented Reality in children with Autism affects the emotional change, empathy with others and social interaction of children with ASD" it seems that a large percentage of the sample agrees absolutely in the effect of social history on empathy and social interaction of children with ASD at a rate of 69.8%. On the other hand, it is shown that Augmented Reality (AR) can increase the motivation of children with ASD in the area of social and everyday skills, and 57.6% of the sample agrees with this. Finally, 54.1% of respondents agree that the application of augmented technological reality

contributes to improving the effectiveness of cognitive and developmental-mental education of children with ASD.

b) Analysis of variance (ANOVA)

To calculate the reliability of the questionnaire, the Cronbach Alpha coefficient was examined, which studies the degree of internal consistency in which all the elements of a cumulative scale measure the same product, i.e. whether the specific questionnaire can be used as a tool for measuring the goals for which it was created. The reliability of the scale on questions 1 to 10 was calculated by the Cronbach alpha coefficient. From the Reliability Statistics table we have that Cronbach's coefficient is satisfactory (0.927). So the 10 questions of the questionnaire compose a scale very satisfactorily.

Table 6

Reliability Statistics

Cronbach's Alphaª	Cronbach's Alpha Based on Standardized Itemsª	No. of Items
,761	,927	12

Comparing the scale of questions (12 questions) concerning, the Likert scale was used to record the opinions, with high values corresponding to disagreement and low values to agreement (this results from the arbitrary coding we gave) in relation to gender. The first table contains the averages and standard deviations of the values of the dependent variable of the two groups (men-women). In the second table the first row refers to the Levene test for equality of variances. Depending on the significance value of this

test we accept the assumption of equal variances or not (here the power of the assumption of equal variances is 0.000, less than 0.05 so we do not accept that the variances are equal. Therefore we check the significance of the t-test in first line. Also, it was observed that there is a statistical significant relationship, as shown in the tables P-value= 0.000 < 0.05, so they are significantly correlated with each other.

Table 7

Group Statistics

SEX	N	Mean	Std. Deviation	Std. Error Mean
Man	286	10,7273	,24284	,01436
Woman	141	11,0511	,12740	,01073

Table 8

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig (2_tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
TOTAL_1	Equal variances assumed	76,706	,000	14,851	425	,000	-,32379	,02180	-,36665	-,28094
	Equal variances not assumed			18,063	423,405	,000	-,32379	,01793	-,35902	-,28856

Anova

In order to check whether the mean values of a quantitative variable differ between the categories of a qualitative variable, when it has more than two categories, you use One-Way ANOVA. The Levene Test of Equality of Error Variances shows whether the variances are equal, in this case for the scale of the questions and the experience of teachers in special education, it gives the level of significance $p < 0.05$. Consequently, it is true that there is a significant difference between the dispersions. While from the ANOVA table there is a statistically significant effect between the variables, $p=0.000<0.05$.

The Levene Test of Equality of Error Variances shows whether the variances are equal, in this case for the scale of the questions and the experience of teachers in special education, it gives the level of significance $p < 0.05$. Consequently, it is true that there is a significant difference between the dispersions. While from the ANOVA table there is a statistically significant effect between the variables, $p=0.000<0.05$.

Table 9

Descriptives

TOTAL_1

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	Between-Component Variance
						Lower Bound	Upper Bound			
5-10 year		204	10,60	,152	,011	10,58	10,63	10	11	
11-15 years		154	11,06	,153	,012	11,04	11,09	11	11	
16-20 years		25	11,00	,000	,000	11,00	11,00	11	11	
21-25 years		44	11,00	,000	,000	11,00	11,00	11	11	
Total		427	10,83	,261	,013	10,81	10,86	10	11	
Model	Fixed Effects				,140	,007	10,82	10,85		
	Random Effects				,170	10,29	11,37			,077

Table 10

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
TOTAL_1	Based on Mean	22,376	3	423	,000
	Based on Median	11,506	3	423	,000
	Based on Median and with adjusted df	11,506	3	355,829	,000
	Based on trimmed mean	21,864	3	423	,000

Table 11

ANOVA

TOTAL_1

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	20,729	3	6,910	354,220	,000
Within Groups	8,251	423	,020		
Total	28,981	426			

Στον πίνακα post hoc, παρατηρείται ότι και στις 2 κατηγορίες που έχουν αναλυθεί , παρατηρείται ότι συσχετίζονται σημαντικά με p-value= 0.000<0.005 τα έτη 11-15 και 21-25 years και 16-20 years.

Table 12

Multiple Comparisons

Dependent Variable: TOTAL_1
Tukey HSD

(I) YEARS_OF_SERVICE_IN_ SPECIAL_EDUCATION	(J) YEARS_OF_SERVICE_IN_ SPECIAL_EDUCATION	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
5-10 year	11-15 years	-,459*	,015	,000	-,50	-,42
	16-20 years	-,395*	,030	,000	-,47	-,32
	21-25 years	-,395*	,023	,000	-,45	-,34
11-15 years	5-10 year	,459*	,015	,000	,42	,50
	16-20 years	,064	,030	,151	-,01	,14
	21-25 years	,064*	,024	,040	,00	,13
16-20 years	5-10 year	,395*	,030	,000	,32	,47
	11-15 years	-,064	,030	,151	-,14	,01
	21-25 years	,000	,035	1,000	-,09	,09
21-25 years	5-10 year	,395*	,023	,000	,34	,45
	11-15 years	-,064*	,024	,040	-,13	,00
	16-20 years	,000	,035	1,000	-,09	,09

*. The mean difference is significant at the 0.05 level.

In this case, for the scale of the questions and the educational level of the teachers, it gives the level of significance $p < 0.05$. Consequently, it is true that there is a significant difference between the dispersions. While from the ANOVA table there is a statistically significant effect between the variables, p=0.000<0.05.

The Levene Test of Equality of Error Variances shows if the variances are equal, in this case for the scale of the questions and the educational level of the teachers, it gives the level of significance $p < 0.05$. Consequently, it is true that there is a significant difference between the dispersions. While from the ANOVA table there is a statistically significant effect between the variables, p=0.000<0.05.

Table 13

Descriptives

TOTAL_1

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	Between-Component Variance
						Lower Bound	Upper Bound			
	UNIVERSITY	118	10,54	,134	,012	10,52	10,57	10	11	
	DOCTORATE	23	10,60	,000	,000	10,60	10,60	11	11	
	MASTER DEGREE	286	10,97	,186	,011	10,95	11,00	11	11	
	Total	427	10,83	,261	,013	10,81	10,86	10	11	
Model	Fixed Effects			,168	,008	10,82	10,85			
	Random Effects				,211	9,93	11,74			,084

Table 14

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
TOTAL_1	Based on Mean	13,517	2	424	,000
	Based on Median	12,101	2	424	,000
	Based on Median and with adjusted df	12,101	2	399,120	,000
	Based on trimmed mean	14,988	2	424	,000

Table 15

ANOVA

TOTAL_1

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	17,028	2	8,514	301,995	,000
Within Groups	11,953	424	,028		
Total	28,981	426			

In the post hoc table, it is observed that in both the 2 analyzed categories, it is observed that they are significantly correlated with p-value= 0.000<0.005 at the master degree level.

Table 16

Multiple Comparisons

Dependent Variable: TOTAL_1
Tukey HSD

(I) STUDIES	(J) STUDIES	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
University	Doctorate	-,059	,038	,269	-,15	,03
	Master Degree	-,433*	,018	,000	-,48	-,39
Doctorate	University	,059	,038	,269	-,03	,15
	Master Degree	-,374*	,036	,000	-,46	-,29
Master Degree	University	,433*	,018	,000	,39	,48
	Doctorate	,374*	,036	,000	,29	,46

. The mean difference is significant at the 0.05 level.

The first table contains the averages and standard deviations of the values of the dependent variable of the two groups (years of experience in general education). In the second table the first row refers to the Levene test for equality of variances. Depending on the significance value of this test we accept the assumption of equal variances or not (here the power of the assumption of equal variances is 0.000, less than 0.05 so we do not accept that the variances are equal. Therefore we check the significance of the t-test in first line. Also, it was observed that there is a statistical significant relationship, as shown in the tables P-value=0.000<0.05, so they are significantly correlated with each other.

Table 17

Group Statistics

Years of_Service_in_General_Education	N	Mean	Std. Deviation	Std. Error Mean
5-10 year	35	10,40	,181	,031
11-15 years	32	10,60	,000	,000

Table 18

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
TOTAL_1	Equal variances assumed	124,179	,000	6,229	65	,000	-,200	,032	-,264	-,136
	Equal variances not assumed			6,519	34,000	,000	-,200	,031	-,262	-,138

V. Conclusions

The use of new technologies has been characterized as an important aid in the educational process with enormous benefits in the education of children with special educational needs, and especially children with autism. The evolution of the educational system has a direct connection with the introduction of technology in schools. For this reason, there should be an application of important innovative methods of applying the new technologies in educational practice, giving advantages and opportunities to improve the acquisition of knowledge and the learning process (El Seoud et al., 2019; Nazaruddin et al., 2018). The use of new technologies is considered particularly important for children with ASD. Augmented reality is thus an innovative method, which through the literature review and the results of this research, is considered important as it allows viewing a physical environment that is augmented reality by projecting a virtual environment (information, persons, situations...) designed on the computer.

It is easy to use and can be used by everyone and in all academic subjects. Augmented reality can relate and improve students' abilities with their everyday life, and especially students with special educational needs. For this reason it can be used for children with autism, meeting the needs they need with the appropriate educational tools and supporting their difficulties. The benefits to children with autism are significant in the areas of social interaction, affecting their cognitive, social, emotional, physical development (Syahputra et al., 2018). In this way, the autonomy, independence, socialization and smooth integration and acceptance of these children in society at a productive and functional level are strengthened.

Autism is a developmental disorder, which is not amenable to any treatment, however, research interest is directed towards the search and investigation of ways for a more effective approach and treatment. Many therapeutic-educational approaches have been created and implemented to improve autism deficits (Kucuk et al., 2017). Of course, in order to implement each intervention method, the special characteristics of each child are taken into account.

Therefore, a different approach to how to treat children with autism is augmented reality. Thus, in this particular research, the attitudes of teachers are presented regarding the special possibilities that augmented reality offers to the social and all-round development and development of children with ASD (Bai et al., 2013). Through this possibility, children with autism can improve their social skills, integrate smoothly into society, and strengthen their daily living skills. Educators argued that the use of augmented reality enhances these children's motivation to learn and improve social, language, emotional and motor skills (Rega et al., 2018).

Technological learning, using new forms of content representation and education service provision by enhancing the user's visual perception of the real environment, favors the social development of children with ASD (Liu et al., 2017). For the development of communicative behaviors, the use of augmented reality detects and understands the hand-eye coordination of human emotions in children with ASD, improves social interaction, while learning non-verbal behaviors through Augmented Reality shows positive results for the social skills of children. of children with ASD of (Lorenzo et al., 2019). Also, the use of AR smart glasses in children with Autism appears to significantly affect the social interaction of children with ASD. Also, the research review shows that social story creation through Augmented Reality in children with Autism affects emotional change, empathy with others and social interaction of children with ASD (Syahputra et al., 2018). In this way, the social inclusion of children with ASD is achieved, while the use of colors and images create a fun, attractive and interesting educational context, motivating children to participate in the educational process.

Regarding the imitative ability of children with ASD, it seems that the use of augmented reality is gaining interest from scientists and the educational community, since virtual games aim to encourage, focus and imagine through this repetitive motion feedback and vision of children with ASD, while the use of an augmented reality-based ASD simulator can mimic the perceptual hyperresponsiveness of children with ASD symptoms in activities of daily living. Research results show that augmented reality helps integrate the physical and digital worlds and mimics current strategies for attention management in autism (Escobedo et al., 2014).

In the area of verbal development the integration of Augmented Reality into communication interventions, evidence linking augmented strategy and alternative communication and applied behavior analysis shows benefits in speech therapy, while students with autism tend to learn better using visual media (Chen et al., 2016; Almeida da Silva et al., 2015). This aims to improve the effectiveness of the cognitive and developmental education of children with ASD.

The review of research shows that there is a positive effect of augmented reality in enhancing the cooperative, communicative and social behavior of children with ASD. Of course, we can conclude that augmented reality works effectively in the process of planning, implementing and evaluating the educational intervention of children with ASD. However, the presence and contribution of the teacher in this process is important and decisive, because it is necessary to control and coordinate the entire intervention process.

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Permanent Education in Health: A Documentary Investigation on the Eastern Region of the City of São Paulo

By Eunice Almeida da Silva, Régia Cristina Oliveira, Ivana Brito, Fátima Madalena de Campos Lico, Nivaldo Carneiro Junior & Esteban Fernandez Tuesta

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Abstract- The present article aims to present the data recorded in the Permanent Education Municipal Plans (*Planos Municipais de Educação Permanente* – PLAMEP) regarding the educational activities offered to professionals working in Primary Care services under the Regional Health Coordination Office - East in the period from 2017 to 2020. The article seeks to highlight the quantity and type of areas/themes proposed; of actions offered and their periodicity. Some important issues have emerged in this survey, among them: the prevalence of more vertical methods deployed in educational actions, such as training and courses, along with a prevalent monthly periodicity of such activities; differences in the amount of educational actions proposed in the course of the period considered; a diversity of actions not circumscribed to the areas previously defined in the survey; the lack of filling in some information such as executing area and periodicity in the first years of the PLAMEP implementation; the lack of standardization and uniformity in the spreadsheets of 2017 and 2018; and an improvement in the organization of data between 2019 and 2020.

Keywords: permanent education; primary care; health professionals; documentary survey.

GJHSS-G Classification: JEL: I12

PERMANENTEDUCATIONINHEALTHADOCUMENTARYINVESTIGATIONONTHEEASTERNREGIONOFTHECITYOFSOPAULO

Strictly as per the compliance and regulations of:

Permanent Education in Health: A Documentary Investigation on the Eastern Region of the City of São Paulo

Eunice Almeida da Silva ᵃ, Régia Cristina Oliveira ᵒ, Ivana Brito ᵖ, Fátima Madalena de Campos Lico ᵚ, Nivaldo Carneiro Junior ¥ & Esteban Fernandez Tuesta §

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I. Introduction

Historically, Campo & Gigante (2016) highlight, investment in the training of health professionals has been grounded on positivist models combined with the use of conservative methodological techniques. Under such guidelines, the authors emphasize, knowledge is fragmented and reduced to technical efficiency.

Based on a model of technical rationality, the professional education activities thus biased are grounded on repetitive practices, on the separation of theory and practice, and on the mere relay of information, which result in overall uncritical professional education, with the predominance of an individualistic, mechanistic practice, the authors argue.

In the opposite direction to this kind of reproductive training, Campo & Gigante (2016, p. 747) point out that the Unified Health System (SUS), for its full development, requires a critical, sensitive and humanistic training of its health professionals, so that they can think and perform in complex and uncertain contexts, being able to apprehend the health-disease process as not exclusively circumscribed to anatomical and physiological aspects, but instead consider it in a broad manner, through the articulation between individual and society; an "integrative training of personal, social and professional dimensions".

Mendes and Sacardo (2017), also highlight the importance of the SUS` consolidation as the ground for training of health workers, from graduation to work as full professionals in the health services.

Guided by this necessary review of professional training and performance, the National Policy for Permanent Education in Health aims to train health workers, as well as care for their development, thus constituting an important strategy within SUS, Campos and Gigante highlight (2016).

The term *Permanent Education* appeared in Brazil in the 1980s, opposing the *Continuing Education* model, which is characterized by being exclusively technical and fragmented, focused on the relay of knowledge and on a traditional education bias. Unlike this model, *Permanent Education* presupposes a kind of learning that takes place in the work place itself, based on the health professional's experience (Mishima et al, 2015).

However, this has not been an easy task. Many are the challenges faced in structuring this policy, which are developed in complex contexts with different challenges to both care and management practices, as highlighted by Campos and Gigante (2015). Silva et al (2020, p. 242) also discuss this aspect, pointing out that

what persists in most services in Brazil are narrowly specified educational activities, characterized as training, often exclusively technical, without clear objectives or with the sole purpose of solving an emergency brought by the population and/or by an institutional demand.

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As such activities are carried out, they are organized in spreadsheets (the Permanent Education Municipal Plans - PLAMEPs), which is an instrument to log the educational activities offered to health professionals from different areas and backgrounds during each year, in each one of the coordination offices[2].

II. Methodological Aspects

This work, of quantitative approach[3], relied on a survey of the activities recorded in the four PLAMEPs of the Eastern Regional Health Coordination Office. The process of gathering the data[4] recorded in the PLAMEPs relied on: 1- survey of the educational activities logged in the PLAMEP by the East Regional Health Coordination Office; 2- survey of the format taken up by such activities as to: denomination of the activities launched (capacity building, training, seminars, courses, congresses, symposiums); 3- survey of the didactic-pedagogical alternatives; 4- survey of the target audience reached; 5 - aims of the educational activities; 6 - continuity or discontinuity of the proposed actions.

After the survey, the data gathered was systematized, based on a theoretical framework on continuing education in health and on documentary analysis (Cellard, 2010).

It is important to note the relevance of considering the PLAMEPs from different periods, ranging from 2017, when it was created, to 2020. The idea was to evaluate changes and continuities regarding educational activities and other items featured in the document, as can be seen in the results below, where data from 2017 and 2020 is presented.

The worksheets of the Eastern Regional Health Coordination Office were divided into 4 parts: one worksheet corresponding to 2017 (adding up to 445 actions), one corresponding to 2018 (adding up to 512 actions), another corresponding to 2019 (adding up to 356 actions), and one corresponding to 2020 (adding up to 275).

For the analysis of the results, the following categories were chosen: proponent and executing area; type of action; periodicity.

III. Results and Discussion

The results presented here refer to the 2017 to 2020 spreadsheets.

1. Graph of the years of the actions collected
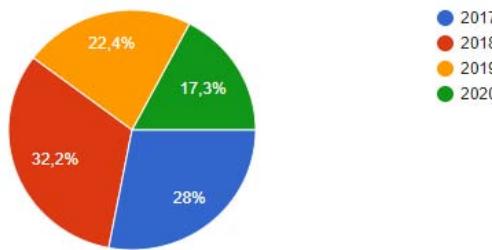
Source: Elaborated by the group, 2023.

2. Graph of the structure in charge of carrying out the actions

Source: Elaborated by the group, 2023.

Structure in Charge – East 2017 to 2020

Guaianazes….

...None of the above

Counting of structure in charge (placed in the first column). Supervision

3. Area proposing the actions

Área(s) Proponente(s) - Leste 2017 a 2020

Category	Value
Não levantado pelo PL…	137
PICS	84
Nenhuma das anteriores	812
Enfermagem	16
Saúde da Criança e do…	36
Saúde Mental	82
Saúde da Mulher	14
Urgência na Atenção…	5
Não preenchido (deixa…	45
Gestão do trabalho e e…	82
Saúde Bucal	37
Saúde Integral da Pes…	16
UVIS	138
Assistência Laboratorial	7
Saúde do Trabalhador…	7
Saúde da Pessoa Idosa	33
Saúde da População…	7
Assistência Farmacêut…	20
DST/AIDS	13
Doenças Crônicas Nã…	1
Saúde da População L…	5
Saúde do Homen	2
Saúde da Pessoa em…	1
Estratégia Saúde da F…	2

Contagem de Área(s) Proponente(s)

Source: Elaborated by the group, 2023.

Not surveyed by the PL...PICS

None of the above

Nursing

Health of the Child and of…

Mental Health

Women's Health

Urgency in Attention

Not filled in (let…

Labor Management and

Mouth Health

Full Personal Health

UVIS

Laboratorial Assistance

Workers' Health

Elderly Person's Health

Health of the Population…

Pharmaceutical Assistance

STD/AIDS

Chronic non… diseases

Health fo the Poçulaiton…

Men's Health

Health of the Person in…

Health Strategy of...

4. Graph of Executing Area

Área(s) Executora(s) - Leste 2017 a 2020

Category	Value
Não levantado pelo PL…	355
PICS	54
Nenhuma das anteriores	660
Enfermagem	12
Saúde da Criança e do…	29
Saúde Mental	75
Saúde da Mulher	16
Urgência na Atenção B…	5
Não preenchido (deixa…	66
Gestão do trabalho e e…	66
Saúde Bucal	15
Saúde Integral da Pess…	9
UVIS	140
Assistência Laboratorial	6
Saúde do Trabalhador…	2
Saúde da Pessoa Idosa	18
Saúde da População N…	8
DST/AIDS	11
Doenças Crônicas Não…	1
Saúde da População L…	4
Saúde do Homen	2
Assistência Farmacêutica	18

Contagem de Área(s) Executora(s)

Source: Elaborated by the group, 2023.

Executing Area(s) – East 2017 to 2020

Not surveyed by the PL…
PICS
None of the above
Nursing
Child and Teenage Health
Mental Health
Women's Health
Urgency in Attention
Not filled in (let…
Work Management and Health Education
Mouth Health

Full Personal Health
UVIS
Laboratorial Assistance
Workers' Health
Elderly Person's Health
Health of the Population…
STD/AIDS
Chronic non… diseases
Health of the Population…
Men's Health
Pharmaceutical Assistance

5. Graph of the type of action
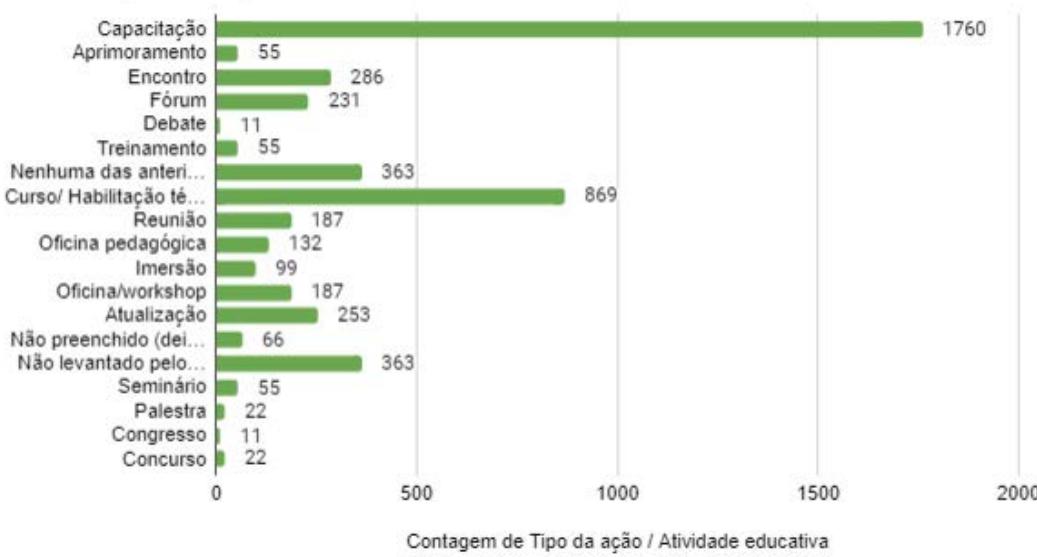
Source: Elaborated by the group, 2023.

Figure 5: Graph of the type of action/Educational Activity – East 2017 to 2020

Capacity Building
Improvement
Gathering
Forum
Debate
Training
None of the Above
Course/Technical Habilitation
Meeting
Pedagogic Workshop
Updating
Not filled in…
Not surveyed by…
Seminar
Lecture

Counting of Type of Action/Educational Activity
Congress
Entry Examination

6. Periodicity of Actions
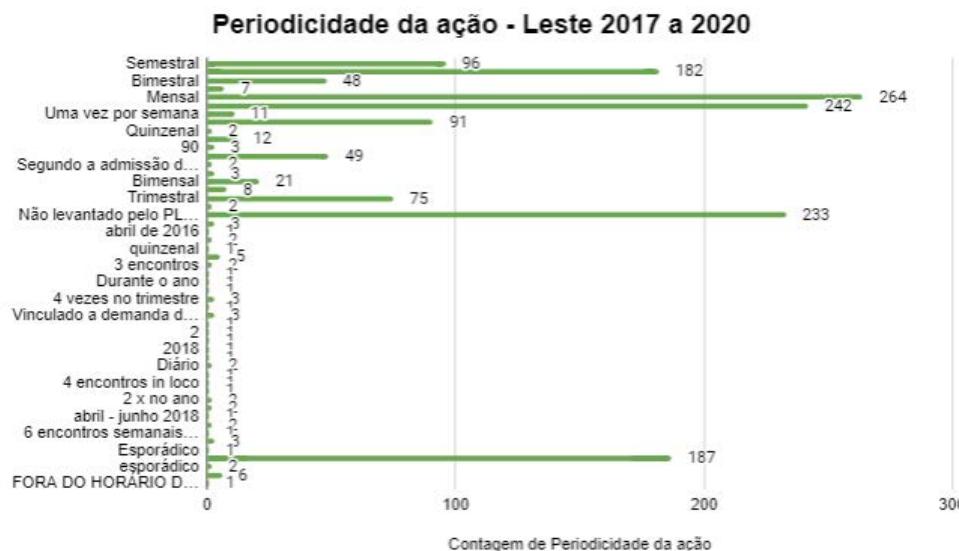
Periodicidade da ação - Leste 2017 a 2020

Semestral	Linked to demand…
Bimestral	2
Monthly	2018
Once a week	Daily
Fortnightly	4 years in loco
90	Twice in the year
According to the admission…	April-June 2018
April 2016	6 weekly meetings
Fortnightly	Sporadic
3 meetings	sporadic
Along the year	Out of Hours...
4 times in the semester	

The survey revealed a certain amount of errors in the original filling out of forms and also in the formulation, by the project team, of the descriptors used in the survey. We observed that most times there is no information about the proponent area (info not filled in) or else there is information about an area that, at first, was not included in the list developed by the project team. This shows us, from a methodological point of view, the need for fresh adjustments to the surveying tools for a better visualization and organization of the data featured in the PLAMEPs.

As Cellard (2010, p. 296) develops, the "researcher who works with documents must overcome several obstacles and be wary of numerous pitfalls before being in a position to make in-depth analysis".

Anyway, from the data collected, some important considerations can be pointed out: the areas that carry out the most educational activities in the spreadsheets were the Health Surveillance Units (*Unidades de Vigilância em Saúde* - UVIS), with 140 answers, followed by other prevalent areas such as Mental Health (75); Work and Health Education Management (66); and Child and Teenage Health (29).

Regarding the areas that put forwards the activities, we found, with the highest prevalence, the Health Surveillance Units, with 138 answers; followed by Mental Health (82); Work Management and Health Education (82); Child and Teenage Health (36) and Elderly People's Health (33), which shows the centrality of these areas in terms of the permanent training of health professionals in this region and in the period considered.

Thus, there is a larger number for the Health Surveillance Units, both as executing and proposing areas. Mental health and health work management are also highlighted in these two analyzed areas.

Regarding the type of educational action, we noticed a strong prevalence of Training (1760) and Technical Courses/Habilitation (869). Other categories that presented most answers were: Gathering (286) and Updating (253). The frequency with the highest number of answers was Monthly (264), followed by once a week (242); Sporadic (187) and Bimestral (182).

It is also important to understand the distributions in relation to the different periods, that is, the greater recurrences and the most significant changes presented in the course of the years analyzed. This analysis is in progress, as is the reorganization of the data based on new groupings of terms, which may bring in new results.

IV. Final Remarks

Permanent Education is defined as an important tool for the constant updating of health professionals, resulting in an encounter between the production of care and pedagogical production in health systems (MICCAS & BATISTA, 2014).

In the case of São Paulo City Eastern Regional Health Coordination Office, the PLAMEP data survey shows a prevalence of the offering of courses and training, which can be interpreted as routine actions, i.e., ones that frequently occur in the daily routine of health services aimed at personnel improvement. Most of the time, traditional, verticalized teaching methods are used in such improvement activities.

This state of affairs may show a difficulty in reconciling more integrative and horizontal teaching methods with the health units' operation and the participation of health professionals, making it difficult to rethink the practice in a reflective and expanded way, as advocated by the National Policy of Continuing Education in Health.

Also noteworthy is the existence of differences in relation to the number of educational actions proposed in the course of the years. The lowest number of actions, recorded in 2020, was probably the result of the Covid-19 pandemic, a period in which the roles of health professionals and indeed the entire health services' operations had to be rearranged in order to deal with infections by the virus.

On the other hand, the year with the highest number of actions recorded, 2018, may also only indicate a greater effectiveness in the completion of PLAMEPs, since it was in its second year of operation, having already undergone the adaptation period in 2017. Moreover, it is necessary to understand that the very lack of filling in some information such as the executing area or periodicity in the first years of implementation of PLAMEP offers us important data not only about the document itself but also about the dynamics of the services.

The lack of standardization and uniformity of the spreadsheets in 2017 and 2018 reveals inconsistencies in the correct completion of PLAMEPs, resulting, among other aspects, from communication difficulties between team members in charge of this task. However, the improvement in the filling in of spreadsheets in 2019 and 2020 is clear, now better organized and standardized,

indicating the corrective attitudes implemented to better describe the existing items in the documents.

Interviews are a fundamental technique for the understanding of the data surveyed and will be carried out seeking to clarify the existing gaps as well as the prevalence of certain themes. The unnamed executing areas and types of actions will be found out with the managers in charge of the development of permanent education actions in the Eastern Regional Health Coordination Office and other regions of the city of São Paulo. As Silva and Oliveira (2022, p. 7) point out, the expansion of and sophistication in the understanding of quantitative data "is only possible from the encounter between researcher and researched, through listening to the latent and manifest discourses, where not only the word, but the silence itself and the pause, give meaning to the speech".

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Translation as a Subjective and Creative Act: Choices and Constraints

By Said M Shiyab

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Abstract- This paper starts with the assumption that translation is neither a transference nor a replacement of one word or symbol in one language with a word or symbol in another. It is a matter of choice, selecting the most appropriate or equivalent form to the original. This paper argues that translators' subjectivity and creativity play a significant role in striking a balance between what is accurate and what is acceptable during the translation process.

Although translation is based on the source text, its outcome depends essentially on the translator's own realization and perception of the text. Therefore, it may be difficult to approach translation from decoding and encoding perspectives because words and phrases change over the years. However, at the heart of the translation process, there is the translator's free will, which determines the outcome and quality of the text to be translated.

Keywords: translation, translators' subjectivity, creative translation, intuition, translators' choice.

GJHSS-G Classification: DDC: Class 418

TRANSLATIONASASUBJECTIVEANDCREATIVEACTCHOICESANDCONSTRAINTS

Strictly as per the compliance and regulations of:

Translation as a Subjective and Creative Act: Choices and Constraints

Said M Shiyab

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I. Introduction

Translation scholars have frequently discussed aspects of technical and grammatical translation from Arabic into English and vice versa. However, a significant aspect of translating texts creatively and artistically has been overlooked. The term "subjective" refers to the act of changing the form, shape or appearance of the text along with the process of adding, removing and transferring content, whereas "creative" refers to the translator's ability to describe something in a new and imaginative way to produce interesting results. Both subjectivity and creativity can be accomplished through the lived experiences of translators or readers along with their own senses of the world. That being said, translators are not completely free to do whatever they want, nor should they be entirely faithful to the original text, but free to sense, appreciate and respect the cultures of the ST. Therefore, translation is believed to involve transferring thoughts behind or between words and capturing all shades of meanings that evolve around the text (Delisle, cited in Newmark 1988: 76). This is a procedure that should be regarded as the central issue of translation.

Along the same line, translation is believed to involve conveying what is implied and not what is said (Meyer (1974). This, according to Meyer, is the meaning behind meaning. However, in translating the implied meaning, i.e., the sub-text and all shades of meaning, translators must word a sentence in such a way that the

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implied meaning is equally clear in the target text. Consider the following sentence:

How can he succeed when he won't work hard?

A quick look at the English term "when" may mislead inexperienced translators to fall into the trap of translating such a term as a time expression. However, if one scrutinizes the sentence along the context in which the term "when" is used, they will realize that there is a conditional meaning behind the use of such an expression. It is logical to assume that native speakers of English may not use language in a simple and direct way, and if translators are not equipped with all means, whether theoretical or practical, they will more likely produce an inappropriate translation of the term. Sometimes, a word in a sentence can be used in a way where two or more interpretations are possible. A dictionary at this stage is not really helpful simply because translators may find that the term "when" refers to *at what time*, *on what occasion*, *at or during the time that*, *considering that*, *although*, etc. None of these English equivalents conveys the intended meaning. The same thing applies to the Arabic equivalents of the English term "when". Inexperienced translators may literally render this term as ᶜ*indama*, *mata*, wa *min thumma*, *bil rughmi min*, *fii hiin*, etc. Again, none of these expressions captures the implications behind the use of such a term. Translators here should grasp the relevant meaning of the term based on the context in which it is used. Therefore, an appropriate rendition of the term "when" would be *in lam (if)* as follows:

kayfa bi imkanihi an yanjaha in lam yakun mustaᶜiddan?

In the above sentence, "when" is translated as conditional and not a time expression. Only by going beyond the explicit meaning of the term and analyzing the context in which it is used can the conditional meaning of "when" be captured. Therefore, relying on the explicit meaning of the word is not enough. Text-producers bring their own assumptions, pre-suppositions, and general world-views to bear on their processing of texts at all levels. Individual lexical choices are also important. In such cases, translators should go beyond the explicit meaning to perceive the potential meaning of particular choices within the cultural and linguistic community of the source text (Mason 1992: 23). Translators should carefully measure the thought behind the meaning, as the thought that is carried on by the word is its essential meaning and it is this kind of

meaning that should not be tampered with. This problem is prevalent when translating cultural terms. For example, the term *tabun* which corresponds to *"a small, jar-shaped oven, sunk in the ground, open on top, used for baking"*, cannot be translated literally without referring to the culture in which the term is used. The meaning of this term can be understood only within a particular Arabic culture and that is mainly of Syria, Jordan, Palestine, etc. Therefore, understanding the socio-cultural context in which terms are utilized is fundamental in translation.

In addition, proverbs can hardly be translated literally into the target language, simply because they manifest cultural overtones that cannot be rendered adequately without going beyond their literal meanings. The expression *Adam kicked the bucket* is a term that cannot be translated literally as Darab *adam al-satla (*literally translated as *Adam hit the pail (*whether of wood or metal), as the term is used metaphorically to mean *tuwuffiya adam*, *intaqala adam ila rahmatillah*, *mata adam*, corresponding to the English expression Adam *passed away*. Also, the Arabic proverb *asafeer baTni bitzaqziq* which corresponds literally to *the birds of stomach are chirping* cannot be rendered into the target language without understanding its cultural context, simply because its literal meaning has no relevance whatsoever to the meaning manifested in it. The metaphorical meaning underlying such an expression is *I am extremely hungry*. Therefore, it is fundamental for the translator to provide an equivalent that contains the overall meaning of the expression used.

From a different angle, Arabic sentences such *hadihi al–hadiqatu jamilah* cannot be translated literally as *this a beautiful garden* simply because this sentence is not grammatically acceptable in English. Although there is no verb in the Arabic sentence, good translators must use his own experience and render the sentence as T*his is a beautiful garden*. The addition of the verb has resulted from the translator's thorough grammatical analysis of both sentences and his knowledge of both languages.

Taking the above examples into account, it can be argued that translation is not a direct transference of a word in the original text into a word in the target text. It is a careful analysis of the ST culture and the translators' choice of words. Understanding the stylistic features is also of great importance for translators. Therefore, translators are in a situation where they choose from among several more or less equally acceptable target language versions. According to Gutknecht & Rolle (1996: 2), this depends on the following factors:

1. The type of text to be translated.
2. The extent to which the Source Language text bears stylistic markings.
3. The intended target language audience.
4. The extent to which the translator can culturally comprehend the Source Language text identify himself with.
5. The translator's stylistic preference and his ability to recognize and handle stylistic register.

Now translators must consider several things when translating a text. Among the situational factors stated above are the essence, spirit, and sense of sentences which need to be carefully maintained. It follows, therefore, that within the core of the translation process, there lies a choice that, in one way or another, plays a significant role in the process of translation. Regardless of the decision made, whether it is based on careful scrutiny and reconstruction or on the outcome of the translators' trained instinct, the final decision that must be made comes down to choosing the word or expression that translators think is the closest equivalent to the target text. At the same time, translators work hard to maintain the form and function of the source text; they make every effort not to add new shades of meaning, values, norms, forms and functions that are not expressed or implied within the text. Therefore, translators work here as coordinators who are free to choose whatever but at the same time responsible for whatever they choose.

II. TRANSLATOR'S PERCEPTION

Translators' perception of a text is a crucial aspect of the translation process, as it influences how they interpret and convey the meaning of the source text into the target language. Translators' perception of the text is shaped by a range of factors, such as their linguistic and cultural background, their personal experiences and beliefs, and their knowledge of the subject matter and context of the text. For example, translators who are familiar with the cultural context of the source text may be better able to understand the nuances of the language and convey them effectively in the target language. Similarly, translators who have expertise in a particular field or subject matter may be better equipped to translate technical or specialized texts in that area. However, translators' perception of the text can also be influenced by their personal biases and assumptions, which can lead to inaccuracies or misunderstandings in the translation. Therefore, it is important for translators to maintain a high degree of objectivity and professionalism in their work, and to carefully research and verify any information or terminology that is unclear or unfamiliar (Pym 2010).

That being said, it is axiomatic that in translating literature, for example, four translators would more likely produce four different versions or translations of the same text. This is highly logical because each translator looks at the text from his own perspective. For example, in Shakespeare's play *Hamlet*, one can see how the expression *Thou art a scholar*, *speak to it, Horatio*,

uttered by Marcellus (Act 1, Scene 1), has been translated differently by the four translators: Mutran, Jabra, Jamal, and Al-Khuri. Because the word "scholar" is polysemous, each one of these four translators has translated it differently and according to his own personal talent or possible synonyms. The four translations are listed below for the sake of exposition:

(1) *anta faqih* (you are a jurisprudent) - Jabra.
(2) *anta fasih ᶜalim* (you are eloquent and knowledgeable) - Mutran
(3) *anta rajulun muthaggaf wa fasih* (you are both a cultured and eloquent man) - Jamal.
(4) *anta rajulun mutaᶜallim* (you are an educated man) - Al-Khuri

Taking into account the religious context in which the word "scholar" was used by Marcellus, and because Marcellus looks at the addressee as a man of knowledge, we understand and agree with several literary critics, who favored the Arabic rendition of the above expression as *you are a jurisprudent* simply because it is a more acceptable equivalent than all other words provided by other translators. It also gives the gist of the meaning in this context.

However, the question always arises: can the idea expressed intelligently by the writer be maintained in the translation? To answer this question, we should note that translation is a matter of interpretation, and when we write about translation, we only write about it from a translator's perspective. Translators generally see things from their own subjective evaluation and untrammeled viewpoint. For translators, words have personal perception and different kinds of recognition. Therefore, it would be hard for translators to express the words exactly in the same form and function of the target language. In such cases, translators must convey the idea according to their own perception.

When translators are confronted with a word that must be conveyed into the target language, the choices they make can make all the difference in the world. The terminology they choose may have almost the same meaning to that of the other language, paying their utmost attention to avoid contamination or not to allow translation nuances interfere and distort the meaning of the original. For the sake of clarity, translators dig deep for textual and situational resemblance. The search for resemblance and synonymity is what made some linguists and translation practitioners believe that translation is a form of synonymy (Graham 1981). Graham clearly comments on Quine's (1981) idea of synonymy saying that the natural alternative is to abandon the notion of two messages synonymous in all respect with one another and replace it with the requirement that similarity of meaning be attained in some respect, never all (Graham 1981: 10).

III. Synonymy and Translators Choices

Synonymy refers to the relationship between words or phrases that have the same or nearly the same meaning. It is a semantic relationship that exists between words or phrases that can be used interchangeably in certain contexts. No one denies that synonymy and translators' choices are directly connected. When translators encounter a word or phrase in the source language that has multiple synonyms in the target language, they must make a decision about which synonym to use in the translation. The choice of synonyms can have a significant impact on the meaning, tone, and style of the translation. Based on their professional experience, translators may choose a synonym that closely matches the intended meaning of the original word or phrase, or they may choose a synonym that better fits the intended audience or the context of the translation. Consider, for example, the English word "happy," which has several synonyms in English, such as "joyful," "content," "pleased," and "glad." When translating a text that uses the word "happy" in the source language, translators may need to choose which of these synonyms to use in the target language, based on the specific context and intended meaning of the text. Therefore, the relationship between synonymy and translators' choices is that translators may need to choose between different synonyms when translating a text from one language to another, and their choice of synonym can influence the meaning and effectiveness of the translation (Dell 'Orletta, F., Montemagni, S., & Venturi, G. (2020).

From a philosophical point of view, Quine, while discussing the indeterminacy of translation, proposes that synonymy roughly consists in approximate likeness in effect on the hearer. Quine's use of the word "synonymy" is not restricted. He points out that the word "synonymy" carries the full generality of "same in meaning", whatever that is. Quine distinguishes between two types of synonymy: broad type and narrow type. Broad synonymy can be formulated in intuitive terms. That is, two sentences command assent concomitantly and dissent concomitantly. This kind of concomitance is due strictly to word usage rather than how things happen in the world. As for the narrow type, it is synonymy of parts and not synonymy of wholes. Quine (1992: 62) states:

> Synonymy of parts is defined by appeal to analogy of roles in synonymous wholes; then synonymy in the narrow sense is defined for the wholes by appeal to synonymy of homologous parts.

Part-whole relationships always exist in synonymy. When two sentences have what is called by philosophers "sameness of confirming experience and of disconfirming experience", then we have wholly synonymous sentences (Grice and Strawson 1956: 156). However, when two sentences partially confirm

and disconfirm experience, then we have partially synonymous sentences. Here, one can argue, to this effect, that synonymy involves partial overlapping or whole overlapping. That is, the meaning of one message may partially or wholly overlap with the meaning of another, and the idea of partial and whole overlapping is something that is inevitable in translation. In other words, the meaning of one word is wholly or partially covered by the other. The idea of partial and whole overlapping is represented in Figure (1):
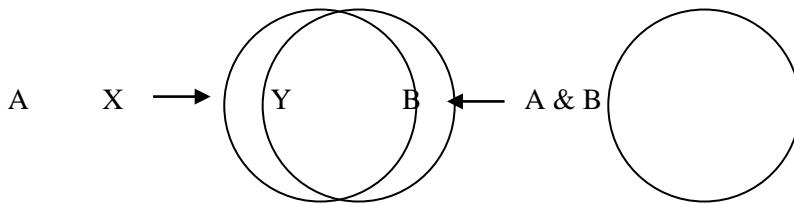

Figure 1: Representation of partial and whole overlapping.

It is axiomatic to point out that total or complete overlapping, if it exists, does not cause any problem. However, for partial overlapping, one could look at A as the original word or even text. Then, B is the target word of the target text. The relationship is that of a mirror image, i.e., one word in a text is mirrored to create the target image. Inevitably, this kind of overlapping cannot always be total, because of at least phonological differences. The most difficult part, however, is that one part is being partially or wholly covered and another part does the covering. There is a neutral part that is not covered in partial overlapping, and this is the area where translators find themselves free to move. Here, portion X in the original occupies accompanying meaning which is not encumbered in the meaning of B. Also, portion Y holds a concomitant meaning that is not included in the meaning of A. Therefore, translators, if possible, must target a total overlapping, a very complicated if not an impossible task.

It is to be noted that complete synonymy does not exist (Ross 1981: 8), and translators seek to preserve the meaning that is similar to the meaning of the original. Ross states:

> The translator seeks to convey the same meaning in a new language as is found in the original. Not only must he choose among the various respects in which similarity of meaning is to be preserved; this is less sameness in any particular respect, and is more an equivalence satisfactory to the constraints, which govern his work.

That being said, translators make their intuitive choices with differing degrees of easefulness or sophistication. Their choice actually depends on the subject- matter they are dealing with. It often happens that a person discovers that, upon looking over the printed copy of a translation, particularly when it comes off the press, they could, if given the choice and the chance again, introduce a different alternative. Hence, translators often dislike their translation of a particular subject-matter after it has been published; they feel that they have not done it well. However, when a person reads their own writing, they read it with some satisfaction; they may not change a single jot. This is the difference between translating and writing. Translating, if not done intuitively, is interpretation, whereas writing is creation of the mind. Therefore, translation is made through the imitation of the original text whereas writing is done through the creation of the individual's mind, paying their utmost attention to the original message.

IV. TRANSLATING VS. WRITING

Translation and writing are closely related, as both involve the creation of a written text that conveys a message or information to a reader. However, while both translation and writing involve the use of language, there are some important differences between the two processes. Translation involves the transfer of a written text from one language to another while retaining its meaning and style. In this process, translators must understand the content and intended meaning of the source text and then express it accurately and effectively in the target language, while also taking into account the cultural and linguistic differences between the source and target languages.

Writing, on the other hand, refers to the process of creating an original written text in a given language. In this process, the writer must come up with an idea or message, organize it logically and coherently, and then express it effectively in writing. Despite these differences, translation and writing share several common features. Both require an understanding of the target audience and the context in which the text will be read. Both also require careful attention to grammar, syntax, vocabulary, and style to ensure that the message is clear and effective. Moreover, the skills and techniques used in writing, such as careful attention to detail, research, and organization, can also be applied to translation to produce high-quality translations that accurately convey the meaning and style of the source text. All in all, writing focuses on creating the idea whereas translating focuses on choosing the closest natural equivalent to a particular lexis. Following is a manifestation of these two skills:
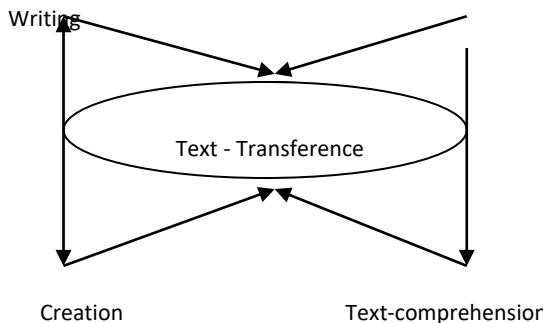
Figure 2: Writing – Translating Representation

In this regard, translators must be modest; they should not be too creative, nor should they be too literal. Being *too* creative may result in distorting the beauty and intricacy of the original text. Being literal may result in ambiguating the text. Therefore, the translator faces a dilemma and the solution to such information immoderation is to be accurate in such a way that the two texts are closely approximated.

V. TRANSLATION IS PERSONAL

Translation can be personal in some ways, as the translator's personal background, experiences, and knowledge can influence the way they interpret and convey the meaning of a text. However, it is also important for the translator to maintain a level of objectivity and remain faithful to the intended meaning of the source text, rather than imposing their own personal biases or opinions onto the translation. At the same time, translators' personal characteristics and experiences can influence the translation process in several ways. For example, translators who are familiar with the culture and language of the source text may be better able to understand the intended meaning of the text and convey it accurately in the target language. Similarly, translators who have expertise in a particular subject area may be better equipped to translate technical or specialized texts in that field. In addition, translators' personal style and preferences can also influence the way they approach a translation. For example, some translators may prefer to produce translations that are more literal and faithful to the original text, while others may prioritize the readability and naturalness of the target language (Cronin 2006).

Overall, while personal factors can influence the translation process to some extent, it is important for translators to maintain a high degree of objectivity and professionalism in order to produce accurate and effective translations.

As translators seek to choose their closest natural equivalent, they look backward and forward. They may see that words have changed and therefore they act upon this. They may also discover that words have drifted, disappeared over the years, and there is no reason to believe that they will not continue to do so. Such intuition implies that the translator has a sense of what is called "the other meaning" in relation to the text to be processed. They should experience the text in their own way, feeling words as mobiles, sensing all possible avenues. It is through their own sensitive and artistic talent that they are able to convey this into the target language. Whenever there is some kind of strangeness in the text, they are in a better position to change it into likeness. After all, they are the ones who look backward and forward into language for the purpose of understanding, making changes, maintaining text-functions, etc. In this regard, one finds it relevant to refer to Bakhtin's term 'verbal art' (cited in Diocaretz 1985: 25). This term is used to refer to the concept of 'moving in language', and in this sense, translating would be a movement in the words used to make language along the context in which words or sentences are used. Bakhtin states:

> The word is not a thing, but rather the eternally mobile, eternally changing medium of dialogical intercourse. It never coincides with a single consciousness or a single voice. The life of the word is in its transferal from one mouth to another, one context to another, one social collective to another, one generation to another. In the process, the word does not forget where it has been and can never wholly free itself from the dominion of the contexts of which it has been a part.

From a different perspective, some believe that translation is an imitation (Steiner 1975). One often finds in translating literature, for example, that Horace, who, in Odes iv. ii, details the problems of rivaling Pindar, and proceeds to apply his percepts in Odes iv. iv, a brilliant Pindar pastiche on an essentially Roman theme. Horace's work was an imitation of another, but it was an art that consisted of bending the technique of another author to suit his own subject and language.

Furthermore, translation can be viewed as an artistic activity (Kelly 1979: 44). Kelly argues that the translator attempts to create his own personal relationship with the text-producer. He follows this in grasping the inner significance of the text he studies. As for the relationship between the translator and the text, translators should know how to use their minds, not only

in a rational way, but also in an intuitive and creative way (Pagnoulle 1993: 89). With regard to the relationship between translators and the text, Pagnoulle argues that in order to translate appropriately, translators should know how to use their minds, not only in a rational way, but also in an intuitive and creative way.

From a philosophical perspective, translation is the reader's interpretation (Gadamer 1975: 10). The concept Gadamer is referring to here is what is called the "hermeneutic circle". This concept refers to knowledge as the lived-experience. Lived-experience is what gives meaning to language and thought. A compelling factor in support of translation as a personal lived-experience is the continual renewal of translating traditional texts. If the goal of translators were to capture the intentions of the text-producer, one translation of the Illiad would be sufficient proof. Instead, one finds new and different translations for almost every poetic or literary work.

VI. Conclusion

This paper has argued that at the center of the translation process, there lies individual choices and the general world-view perceived by translators. Words have personal perception and different recognition, and through their intuition, free will and personal experience, translators can determine the way in which either of the two texts are culturally and linguistically approximated. The free will, however, must be enjoyed by capable translators rather than by mediocre tones. In this sense, Jin's distinction between these two types of translators makes sense as "the new freedom of the capable translators thrives only in so far as they use it to tap the rich resources of the target text (TL) worthy for the production of the original (Jin 1997).

Furthermore, translators' subjectivity and creativity allow translators to make choices based on their personal understanding and interpretation of the source text. They must make choices about how to convey the meaning, tone, and style of the original text in the target language, and these choices can be influenced by a range of factors such as the translator's cultural background, personal preferences, and creative impulses. This subjective element of translation allows for a diverse range of translations that reflect the unique perspectives and styles of individual translators.

On the other hand, there are also constraints to translation that limit the translator's choices and creativity. These constraints, according to Monday (2016), can include linguistic and cultural differences between the source and target languages, the genre and intended audience of the text, and the expectations of the client or publisher. Translators must navigate these constraints and make choices that balance fidelity to the original text with readability and cultural appropriateness in the target language. Translators may also face external constraints such as time limitations, limited resources, and legal or ethical considerations. These constraints can impact translators' choices and creative freedom and may require them to prioritize certain aspects of the translation over others.

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The Creation of the Accessibility and Inclusion Core at Federal University of the State of Rio de Janeiro: Analysis from the Policy Cycle

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Abstract- This article aims, from the approach of the Cycle of Policies, by Stephen J. Ball and collaborators, to present an analysis of the creation of the Accessibility and Inclusion Core (NAI) in a Brazilian federal university. The contact with this particular experience makes it clear that there is undoubtedly progress, but at the same time demonstrates the existence of a set of problems that prevented and/or prevent the structuring of an effectively accessible and inclusive university. Some of these issues were discussed in this work, although others, just highlighted, deserve the attention of new research. Whatever, we believe that this initial reflection is justified and relevant because it helps to make visible some of the most important aspects of the debate regarding the inclusion of students with disabilities in Brazilian higher education.

Keywords: inclusion. accessibility. policy cycle. university.

GJHSS-G Classification: LCC: TT770

THECREATIONOFTHEACCESSIBILITYANDINCLUSIONCOREATFEDERALUNIVERSITYOFTHESTATEOFRIODEJANIROANALYSISFROMTHEPOLICYCYCLE

Strictly as per the compliance and regulations of:

The Creation of the Accessibility and Inclusion Core at Federal University of the State of Rio de Janeiro: Analysis from the Policy Cycle

A Criação do Núcleo de Acessibilidade e Inclusão em uma Universidade Federal: Análise a Partir do Ciclo de Políticas

Andreza de Oliveira de Carvalho [α] & Paulo Pires de Queiroz [σ]

Resumo- Este artigo pretende, a partir da abordagem do Ciclo de Políticas, de Stephen J. Ball e colaboradores, apresentar uma análise da criação do Núcleo de Acessibilidade e Inclusão (NAI) em uma universidade federal brasileira. O contato com essa experiência em particular, deixa explícito que há, sem dúvida, progressos em curso, mas demonstra, ao mesmo tempo, a existência de um conjunto de questões que impediram e/ou impedem a estruturação de uma universidade efetivamente acessível e inclusiva. Algumas dessas questões foram discutidas neste trabalho, ainda que outras, apenas assinaladas, mereçam a atenção de novas pesquisas. Seja como for, apesar dos limites do recorte aqui adotado, acreditamos que esse esforço inicial de reflexão se justifica e é relevante porque ajuda a visibilizar alguns dos aspectos mais importantes do debate a respeito da inclusão de alunos com deficiência no ensino superior brasileiro.

Palavras-chave: inclusão. acessibilidade. ciclo de políticas. ensino superior.

Abstract- This article aims, from the approach of the Cycle of Policies, by Stephen J. Ball and collaborators, to present an analysis of the creation of the Accessibility and Inclusion Core (NAI) in a Brazilian federal university. The contact with this particular experience makes it clear that there is undoubtedly progress, but at the same time demonstrates the existence of a set of problems that prevented and/or prevent the structuring of an effectively accessible and inclusive university. Some of these issues were discussed in this work, although others, just highlighted, deserve the attention of new research. Whatever, we believe that this initial reflection is justified and relevant because it helps to make visible some of the most important aspects of the debate regarding the inclusion of students with disabilities in Brazilian higher education.

Keywords: inclusion. accessibility. policy cycle. university.

I. Introdução

No Brasil, a partir dos anos 90, tem-se uma crescente mudança nas políticas públicas educacionais que se referem à escolarização de pessoas com deficiência. Em decorrência desse movimento, sobretudo a partir do início do século XXI, o acesso de estudantes com deficiência à educação superior foi e segue sendo gradativamente normatizado. Há decretos, portarias e leis que permeiam esse processo, além de programas governamentais, como o INCLUIR, que buscam legitimar e orientar a implementação do que é previsto legalmente.

O programa INCLUIR, de 2005, trouxe em seu bojo orientações que tinham como objetivo garantir o acesso pleno das pessoas com deficiências ao ensino superior. Uma dessas orientações era a criação e a consolidação de núcleos de acessibilidade no âmbito das Instituições Federais de Ensino Superior (IFES). Esses núcleos seriam responsáveis pela garantia da inclusão de pessoas com deficiência à vida acadêmica, eliminando barreiras pedagógicas, arquitetônicas e na comunicação e informação, assim como promovendo o cumprimento dos requisitos legais de acessibilidade.

Ainda sobre a criação dos núcleos de acessibilidade nas instituições públicas de ensino superior, o Decreto 7.611/2011 normatiza o que era uma indicação do programa INCLUIR. O decreto determina a necessidade da estruturação de núcleos de acessibilidade nas IFES e ratifica que o objetivo deles deve ser a garantia da participação e do desenvolvimento acadêmico e social de estudantes com deficiência

Não podemos negar que as normatizações oficiais e programas governamentais são avanços importantes na questão do processo de inclusão de pessoas com deficiência à universidade. Todavia, apenas a regulamentação não é suficiente. As leis existem e impulsionam mudanças, mas implementá-las demanda construir rupturas com práticas tradicionais para se criar alternativas e possibilidades que garantam a equidade de oportunidade para os estudantes com deficiência.

Diante disso, nos interessa saber, como problema de pesquisa, se há um descompasso entre aquilo que se consolidou em documentos legais que tratam da criação dos núcleos de acessibilidade nas IFES e o que até agora foi realizado em termos práticos nas universidades. Como, no Brasil, existem muitas

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universidades, optamos por fazer um estudo de caso, uma vez que entendemos que esse tipo de método nos serve na medida em que se supõe ser possível o conhecimento de um fenômeno a partir do estudo minucioso de um único caso

Sendo assim, o objetivo deste artigo é analisar a criação do Núcleo de Acessibilidade e Inclusão (NAI) da Universidade Federal do Estado do Rio de Janeiro (UNIRIO), recorrendo a dois principais contextos definidos no Ciclo de Políticas[1] (o contexto da produção do texto e o contexto da prática). Essa análise se ocupará, principalmente, em identificar se há um descompasso entre aquilo que está proposto em textos normativos nacionais que tratam da política de criação do NAI nas IFES e o que efetivamente foi construído dentro de uma universidade federal brasileira.

Por fim, cumpre esclarecer que essa delimitação, que enfatiza e demarca dois contextos do Ciclo de Políticas, é uma estratégia analítica diante do recorte deste trabalho, uma vez que os contextos descritos são, a rigor, indissociáveis, dinâmicos e interdependentes. No mais, é importante ressaltar que este trabalho está na base de uma pesquisa que se justifica por contribuir para a análise e compreensão da realidade da inclusão de pessoas com deficiência no ensino superior brasileiro, cooperando para a melhoria da inclusão desse público.

II. Materiais e Métodos

Este artigo é um recorte de uma pesquisa de doutorado em andamento. A pesquisa foi aprovada pelo comitê de ética em pesquisa da Universidade Federal Fluminense (UFF), na qual o doutoramento está sendo realizado.

A partir do objetivo traçado para este artigo, a primeira decisão metodológica foi realizar uma pesquisa qualitativa. Nesse tipo de pesquisa, a preocupação está na compreensão e na explicação das relações sociais. Isso posto, pode-se dizer que a pesquisa qualitativa é utilizada na tentativa de encontrar sentido, tanto na compreensão dos fenômenos sociais, quanto na interpretação dos significados que as pessoas atribuem a eles e, por isso, então, se adequa ao objetivo traçado para nossa pesquisa. De acordo com Chizzotti (2007), o termo qualitativo pode abrigar

diferentes métodos de pesquisa tais como: entrevista, observação participante, testemunho, análise de discurso, estudo de caso e outros que qualificam uma pesquisa com diferentes orientações filosóficas e epistemológicas.

Neste artigo, optou-se pelo estudo de caso. A partir das elaborações apresentadas por Yin (2010) sobre o estudo de caso, entendemos que esse tipo de método nos serve na medida em que se supõe ser possível o conhecimento de um fenômeno a partir do estudo minucioso de um único caso. Além disso, por ser um método específico de pesquisa de campo, permite investigações dos fenômenos exatamente como eles ocorrem. A escolha do estudo de caso nos permitirá mergulhar no campo para identificar, caracterizar e entender o processo de criação do NAI na UNIRIO. Podemos dizer, então, que o estudo de caso foi nosso instrumental de coleta de dados desse aspecto em particular.

Nesse sentido, cabe esclarecer que os dados foram coletados em duas etapas. A primeira, foi a partir da análise documental de textos político-normativos nacionais que tratam da inclusão educacional das pessoas com deficiência e de documentos institucionais como portarias, ordens de serviço, regimentos e manuais que tratam de direcionamentos para o atendimento de alunos com deficiência na UNIRIO. O objetivo foi conhecer e descrever as estratégias e os procedimentos institucionais - âmbito micro - e compará-los com as políticas brasileiras já normatizadas - âmbito macro. Como procedimento para a análise documental, apoiamo-nos nas proposições de Cellard (2012). Para esse autor, uma abordagem global de documentos se faz em duas etapas: i) a análise preliminar, na qual se deve identificar cinco dimensões do documento (o contexto, o(s) autor(es), a autenticidade e confiabilidade, a natureza e os conceitos-chave e a lógica interna); e ii) a análise de fato, em que, com a reunião de todas as partes da análise preliminar, são feitas leituras minuciosas tendo em vista os interesses da pesquisa. Para a análise preliminar dos documentos institucionais, utilizamos a proposição de Cellard (2012) e nos atentamos para as cinco dimensões por ele indicadas. Cada uma das dimensões indicou itens que devem ser identificados na análise de todo e qualquer documento, o que, portanto, contribui para que também se configure como uma análise organizacional dos documentos que serão estudados. Para a etapa da análise de fato, recorremos aos fundamentos teóricos do Ciclo de Políticas (BALL et al, 1992).

A segunda etapa da coleta de dados, se deu através de entrevista semiestruturada realizada com dois servidores da UNIRIO que participam da gestão do NAI. Minayo (2008) define as entrevistas semiestruturadas como uma conversa entre dois ou mais interlocutores, iniciada pelo entrevistador e com o

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[1] O Ciclo de Políticas é composto por cinco contextos, dinâmicos e interdependentes: i) o contexto de influência (momento das disputas sociais por igualdade de condições, acesso e não discriminação, que ecoam no cenário político e culminam na produção do texto político, negociado na forma da lei); ii) o contexto da produção do texto (momento da elaboração dos documentos político-normativos, que são reflexos de um contexto histórico-social); iii) o contexto da prática (que correspondente à apropriação e tradução do texto político no campo da prática, ou seja, um momento no qual a política é interpretada e recriada); iv) o contexto dos resultados/efeitos (no qual são avaliados os impactos da política frente às desigualdades existentes); e v) o contexto da estratégia política (onde se manifestam as iniciativas para lidar com as desigualdades detectadas)

objetivo de estabelecer informações importantes para um objeto de pesquisa e abordagens de temas também importantes. O pesquisador deve seguir um roteiro para facilitar sua abordagem e possibilitar abordar todas as hipóteses e pressupostos.

Desse modo, o roteiro das entrevistas foi elaborado pelos autores, submetido e aprovado no comitê de ética em pesquisa da universidade na qual a pesquisa de doutorado, que deu origem a este artigo, está vinculada. Com base na técnica da entrevista semiestruturada, organizamos a primeira parte com perguntas que permitissem a caracterização dos participantes, de acordo com gênero, formação acadêmica e atuação profissional.

Em seguida, estabelecemos um roteiro que continha tópicos gerais que buscamos conhecer: i) a visão dos entrevistados sobre a educação inclusiva; ii) um panomara histórico das ações de acessibilidade e inclusão na universidade; iii) as ações do NAI e as dificuldades encontradas na gestão do NAI e; iv) o compromisso social que a universidade assume com a inclusão. Desejávamos conhecer as impressões de cada participante e estávamos atentos a suas vivências, impressões e contribuições a serem expressas na entrevista.

Durante toda a entrevista, buscamos incentivar que os participantes falassem livremente sobre assuntos e/ou experiências que iam surgindo como desdobramentos do tema apontado nas questões. Ampliando, assim, as possibilidades de diálogos e de respostas de acordo com cada experiência vivenciada. O encontro foi agendados por e-mail, conforme a disponibilidade temporal e espacial dos participantes, ocorrendo nas dependências da UNIRIO.

Neste processo de pesquisa, cumprimos os protocolos éticos de apresentação do Termo de Consentimento Livre e Esclarecido, que também foi aprovado pelo comitê de ética em pesquisa. A entrevista durou aproximadamente 50 minutos e foi gravada em um celular com aplicativo livre para gravação de voz. Foi usado, também, caneta e caderno de registros, mantendo o olhar atento a cada movimento corporal dos entrevistados e cada pausa ou silêncio. A entrevista foi transcrita e analisada de acordo com as concepções do Ciclo de Políticas (Ball et.al, 1992). Os resultados estão sistematizados nas seções a seguir.

III. A Criação do Nai da Unirio: Análise e Reflexões

Primeiramente, apesar do contexto de influência do Ciclo de Políticas não ser o foco de investigação neste recorte de pesquisa, é preciso conhecer um pouco da sua relação com os demais contextos. Isso porque, o contexto de influência é aquele no qual se elucidam as relações entre as macro

e micropolíticas, onde se determina, por exemplo, as conexões entre as políticas nacionais e a atuação de organismos internacionais, à luz de temas considerados globais. No entanto, é crucial enfatizar que as orientações de tais organismos são reinterpretadas no âmbito de cada país, isso porque, como observa Mainardes (2006), "a globalização promove a migração de políticas, mas essa migração não é uma mera transposição e transferência, pois as políticas são recontextualizadas dentro de contextos nacionais específicos" (p. 52).

Considerando esses movimentos e redes que promovem a circulação de políticas, destacamos quatro documentos internacionais que fomentaram, de maneira decisiva, o debate sobre a Educação Especial inclusiva no Brasil. São eles: i) Declaração de Salamanca (1994); ii) Declaração Mundial Sobre Educação Superior no Século XXI: visão e ação (1998); iii) Convenção sobre os Direitos das Pessoas com Deficiência e seu protocolo facultativo (2006); e iv) Declaração de Incheon (2015).

O Brasil é um dos países signatários da Declaração de Salamanca, que trata dos princípios, políticas e práticas na área das necessidades educativas especiais. Nesse documento, que pode ser considerado um marco mundial da educação inclusiva, a Organização das Nações Unidas para a Educação, a Ciência e a Cultura (UNESCO) registrou o termo sociedade inclusiva pela primeira vez. Nele, é estabelecido que "todas as crianças devem aprender juntas, sempre que possível, independentemente de quaisquer dificuldades ou diferenças que elas possam ter" (UNESCO, 1994, p. 5). Outro aspecto importante a ser destacado do documento é que o público da educação inclusiva não se limita aos estudantes da Educação Especial, mas sim a todos aqueles que, por algum motivo, foram excluídos ou marginalizados do processo de escolarização.

Em relação à educação de nível superior, a Declaração Mundial Sobre Educação Superior no Século XXI: visão e ação, fruto de uma conferência realizada pela UNESCO, na cidade de Paris, em 1998, foi um importante marco no encaminhamento de ações para a garantia da igualdade de acesso e conclusão dos estudos, sem qualquer discriminação, nas instituições de ensino superior. A ênfase desse documento indica que o acesso à educação superior de pessoas com deficiência deve ser ativamente realizado, porque são indivíduos com experiências e talentos, individuais ou coletivos, que são de grande valia para o desenvolvimento das sociedades.

Outro documento central na difusão de uma Educação Especial inclusiva foi a Convenção sobre os Direitos das Pessoas com Deficiência e seu Protocolo Facultativo, resultado da Assembleia Geral da Organização das Nações Unidas (ONU), ocorrida em dezembro de 2006. De acordo com Lopes (2009), essa

convenção funciona como uma proteção aos direitos humanos das pessoas com deficiência, por ser um tratado que compromete os países signatários, determinando suas obrigações em relação a elas. Outro aspecto indicado por Lopes (2009) é que tratados de direitos humanos, tais como esse, têm função educativa e podem auxiliar as organizações que trabalham com direitos humanos, influenciando legislações, práticas locais e a opinião pública. No Brasil, em 2009, a Convenção e seu Protocolo Facultativo foi promulgada através do Decreto n° 6.949.

Mais recentemente, em 2015, um Fórum Mundial, realizado em Incheon, Coréia do Sul, resultou na Declaração de Incheon para a Educação 2030. Esse documento fortalece os princípios da inclusão nos espaços de ensino e aponta, como objetivo, promover, até 2030, uma educação de qualidade inclusiva e equitativa, com vistas a uma educação ao longo da vida para todos.

Note-se que, evidentemente, os documentos acima mencionados são, eles mesmos, textos. Mas textos que expressam todo tipo de disputas e ações de diversos atores, instituições e, o mais importante, de indivíduos e comunidades de indivíduos com deficiência, que lutaram e disputaram espaço para atribuir sentido, para traduzir em conceitos e discursos tudo aquilo que diz respeito a suas experiências humanas e demandas por justiça social e inclusão. Isso, por si só, já constitui um contexto de influência e, na sequência, a circulação dos documentos que resultaram dessas disputas torna-se, ela também, uma expressão desse contexto. Tudo isso repercutindo, de um modo ou de outro, no campo específico das políticas públicas brasileiras que tratam da inclusão do público da Educação Especial, interessando, aqui, particularmente, o que se refere ao nível da Educação Superior. Enfim, vejamos, a seguir, como esse contexto de influência foi recontextualizado.

a) O contexto da produção do texto na política de criação do NAI na UNIRIO

Como sugere Mainardes (2006), há uma "relação simbiótica" entre o contexto de influência, tratado anteriormente, e o contexto da produção do texto. Para o autor, enquanto o primeiro se manifesta nos "bastidores", é no contexto da produção do texto que se busca expressar a política de forma que o grande público tenha acesso a sua materialidade. Trata-se, portanto, do contexto em que os discursos são convertidos em textos propriamente ditos, o que também é marcado por todo tipo de lutas e disputas, além de negociações, acordos e alianças.

Outro aspecto importante, que deve ser igualmente ressaltado, é que "textos não são, necessariamente, internamente coerentes e claros, e podem também ser contraditórios. Eles podem usar os termos-chave de modo diverso" (MANINARDES, 2006, p. 52). Isto é, o texto político, como expressão da "política como texto", não é, desse modo, neutro e objetivo; longe disso, ele é a materialização de interesses distintos em constante tensão.

Em conformidade com esses apontamentos, elegemos os textos político-normativos que entendemos como aqueles que influenciam diretamente na criação de núcleos de acessibilidade e inclusão nas universidades federais brasileiras, assim como textos institucionais da UNIRIO que tratam diretamente da criação do NAI. As leis, decretos e documentos institucionais escolhidos estão descritos e analisados, preliminarmente, através da proposta de análise documental de Cellard (2012), no Quadro 01.

Quadro 01: Análise documental de textos político-normativos que tratam da Educação Especial em interface com a Educação Superior

Documento	Contexto	Autor	Autenticidade/ Confiabilidade	Natureza	Lógica interna
Política Nacional de Educação Especial na Perspectiva da Educação Inclusiva (PNEEPEI, 2008).	Diretrizes da Política Nacional de Educação Especial na Perspectiva da Educação Inclusiva	Ministério da Educação/ Secretaria de Educação Especial	Autêntico e confiável	Prescritiva. Estruturado semelhante a textos acadêmicos	Documento divido em oito partes, que vão desde o contexto histórico da educação especial no Brasil até o delineamento das Diretrizes da PNEEPEI

Programa Incluir – Acessibilidade na Educação Superior	Documento orientador do programa, elaborado em 2013.	SECADI/ SESU – MEC	Autêntico e confiável	Prescritiva. Estruturado semelhante a textos acadêmicos	Documento divido em oito partes, que vão desde o contexto histórico do programa até os indicadores da acessibilidade no ensino superior.
Decreto nº 7.611, de 17 de novembro de 2011	Dispõe sobre a educação especial, o atendimento educacional especializado e dá outras providências.	Presidência da República	Autêntico e confiável	Normativa. Estruturado conforme as regras de elaboração de normas e atos legais. (Lei complementar nº95 de 1998)	Dividido em 11 artigos.
Lei Federal nº 13.146, de 6 de julho de 2015	Institui a Lei Brasileira de Inclusão da Pessoa com Deficiência (Estatuto da Pessoa com Deficiência)	Presidência da República	Autêntico e confiável	Normativa. Estruturado conforme as regras de elaboração de normas e atos legais. (Lei complementar nº95 de 1998)	Dividida em dois livros (parte geral e parte especial), cada um com IV títulos. Ao total, são 127 artigos.
Plano de acessibilidade da UNIRIO – 2017	Documento orientador do Plano de acessibilidade da UNIRIO	COPACE e reitoria	Autêntico e confiável	Prescritiva. Estruturado semelhante a textos acadêmicos	Documento divido em doze partes, que vão desde o contexto histórico da acessibilidade no Brasil e na UNIRIO até os indicadores para o desenvolvimento de ações de acessibilidade na universidade.
Ordem de Serviço PROGRAD/ PROPGI nº 01, de 22 de agosto de 2019.	Estabelece diretrizes e orientações para a Política de Educação Inclusiva e Acessibilidade para os cursos de graduação e pós-graduação.	Pró-reitoria de graduação e Pró-reitoria de pós-graduação, Pesquisa e Inovação	Autêntico e confiável	Normativa. Estruturado conforme as regras de elaboração de normas e atos legais. (Lei complementar nº95 de 1998)	Dividido em 06 artigos.

Portaria n° 660, de 29 de setembro de 2020	Criação do Núcleo de Acessibilidade Inclusão	Reitoria	Autêntico e confiável	Normativa. Estruturado conforme as regras de elaboração de normas e atos legais. (Lei complementar n°95 de 1998)	Dividida em dois artigos que dois artigos

Fonte: Elaborado pelos autores a partir dos dispositivos legais elencados no quadro.

Em 2008, com a aprovação da Política Nacional de Educação Especial na Perspectiva da Educação Inclusiva (PNEEPEI), fica evidente que a Educação Especial é uma modalidade que deve perpassar todas as etapas de ensino e não ser substitutiva e/ou paralela à escolarização regular. A política de 2008, apesar de sua relevância no desenvolvimento de políticas para a Educação Especial, é um documento sem o caráter formal no ordenamento jurídico, não sendo publicado em forma de decreto, por exemplo.

A importância da PNEEPEI está no compromisso pactuado, internacionalmente, com um modelo de ensino não segregado, tendo influência, além de outros documentos, da Declaração de Salamanca e da Convenção sobre os Direitos da Pessoa com Deficiência. Um aspecto central dessa política é que o Atendimento Educacional Especializado (AEE) passou a ter uma organização específica, prevendo disponibilidade de profissionais especializados na área e organização de tempos, espaços e recursos necessários ao processo de aprendizagem de cada estudante.

No que tange, especificamente, a ações de acessibilidade e inclusão no Ensino Superior, cabe destacar a centralidade do Programa INCLUIR, que, a partir de 2005, foi executado por meio da parceria entre a Secretaria de Educação Superior (SESu) e a Secretaria de Educação Continuada, Alfabetização, Diversidade e Inclusão (Secadi), ambas do Ministério de Educação. Em 2019, ocorreram mudanças na estrutura e funções de algumas secretarias do Ministério da Educação. Dentre elas, a Secadi, que passou a se chamar Secretaria de Modalidades Especializadas de Educação (Semesp) Integram a Semesp as diretorias de Educação Especial, de Políticas de Educação Bilíngue de Surdos, e de Modalidades Especializadas em Educação e Tradições Culturais Brasileiras.

Pois bem, o programa INCLUIR disponibilizava recursos a partir da inscrição das universidades em editais específicos. Por intermédio do auxílio prestado pelo Programa Incluir, as universidades podiam, então, criar e consolidar núcleos de acessibilidade. Contudo, desde 2010, a seleção do Incluir deixou de ocorrer e a dotação orçamentária é disponibilizada de acordo com o número de matrículas de alunos e alunas com deficiência.

Podemos afirmar que o programa INCLUIR está diretamente ligado às repercussões e influências da Declaração Mundial Sobre Educação Superior no Século XXI: visão e ação (1998). Isso porque a indicação da criação de núcleos de acessibilidade feita no Incluir é um dos caminhos para assegurar o que é proposto pela Declaração às instituições de nível superior, que é a oferta de material e soluções educacionais que sejam capazes de contribuir para a superação de obstáculos com os quais os estudantes se defrontam, tanto para o acesso quanto para a continuidade dos estudos.

Em 2021, houve a publicação de uma portaria cuja função foi instituir um grupo de trabalho com o objetivo de realizar avaliação de processos, levantamento de informações, discussão sobre alocação de recursos e definição de novas diretrizes para a continuidade do Programa Incluir. Essa portaria e a coordenação do grupo de trabalho estão sob responsabilidade da Secretaria de Modalidades Especializadas de Educação (Semesp). Até a presente data, não há publicização dos dados levantados pelo grupo de estudos e nem as diretrizes que serão definidas para a continuidade do programa.

Ainda sobre a criação dos NAI nas instituições públicas de ensino superior, o Decreto 7.611/2011 normatiza o que era uma indicação do Programa Incluir. O decreto determina a necessidade de estruturação de núcleos de acessibilidade nas Instituições Federais de Educação Superior, que tenham como objetivo eliminar barreiras físicas, de comunicação e de informação que restringem a participação e o desenvolvimento acadêmico e social de estudantes com deficiência. No texto de abertura desse decreto, é explicitado que sua elaboração está fundamentada tendo em vista o artigo 24 da Convenção sobre os Direitos das Pessoas com Deficiência e seu Protocolo Facultativo. Tal artigo salienta que "os Estados Partes assegurarão que as pessoas com deficiência possam ter acesso ao ensino superior em geral, treinamento profissional de acordo com sua vocação, educação para adultos e formação

continuada, sem discriminação e em igualdade de condições".

Outro marco decisivo para a garantia dos direitos de acesso e permanência de alunos e alunas da educação especial nas instituições de ensino brasileiras foi a promulgação da Lei Brasileira de Inclusão da Pessoa com Deficiência (LBI), a Lei n.º 13.146/2015. Também sob influência das diretrizes da Convenção sobre os Direitos das Pessoas com Deficiência e seu Protocolo Facultativo, a LBI visa "assegurar e a promover, em condições de igualdade, o exercício dos direitos e das liberdades fundamentais por pessoa com deficiência, visando à sua inclusão social e cidadania" (BRASIL, 2015, p. 1). Em relação ao ensino superior, a LBI assinala medidas que visam garantir a equidade nos processos seletivos de acesso e de permanência de estudantes da educação especial nos cursos de graduação do país.

Em relação aos textos normativos da UNIRIO, destacamos o plano de acessibilidade, de 2017, que visou garantir a acessibilidade a toda comunidade universitária. Esse plano foi desenvolvido pela Comissão Permanente de Acessibilidade (COPACE), que durou de 2016 a 2020 e era composta por uma equipe multidisciplinar, com membros de diferentes áreas de atuação e presidida pelo Vice- Reitor da instituição. O seu objetivo era consolidar as ações desenvolvidas pela comunidade universitária e prestar suporte às atividades que envolvam a acessibilidade na universidade.

O plano contempla pontos como educação, inclusão e acessibilidade no ensino superior, com seus respectivos marcos orientadores, a análise da situação institucional e um plano de ações. Seu objetivo geral é articular, fomentar e consolidar uma política de acessibilidade e inclusão na UNIRIO provendo a adequação frente às barreiras pedagógicas, arquitetônicas, urbanísticas, de transporte, informação e comunicação, a fim de promover a acessibilidade e permanência de pessoas com deficiência na comunidade universitária. Percebemos, claramente, que esse objetivo está alinhado ao que é proposto no tópico XIII do art. 28 da LBI, que incube ao poder público assegurar acesso à educação superior em igualdade de oportunidades e condições com as demais pessoas.

De maneira específica, sobre a criação de um NAI na UNIRIO, apenas no final de 2020, houve uma portaria de criação. Aqui, é importante salientar o intervalo de tempo entre as determinações nacionais dos textos político-normativos para uma educação especial inclusiva e a produção de textos institucionais que orientam as ações previstas nos textos legais. Isso porque a criação de um núcleo de acessibilidade nas universidades é indicada, desde 2005, pelo Programa Incluir, e determinada, em 2011, pelo decreto nº7.611, que estabelece a necessidade de estruturação de núcleos de acessibilidade nas Instituições Federais de Educação Superior.

Portanto, ao fazer a análise do contexto da produção do texto, podemos concluir o seguinte: i) existem, de fato, significativas correspondências entre o contexto mais abrangente das influências e o contexto propriamente dito da produção dos textos políticos, voltados, nesse caso, à promoção da inclusão, interessando, aqui, os que concernem ao ensino superior. Correspondências que não se deram, repita-se, sem conflitos, tensões, negociações e alianças, envolvendo diversos atores, em múltiplas escalas. Isso porque esses textos recontextualizam e traduzem grande parte dos conceitos e diretrizes que emanam das arenas e dos textos identificados, anteriormente, como aqueles advindos, justamente, do contexto de influências.; e ii) a criação do NAI é uma resposta direta, principalmente, ao Programa INCLUIR, de 2005, à LBI/2015 e ao decreto nº 7.611/2011. Contudo, há um descompasso temporal entre o âmbito da macropolítica e o da micropolítica. Os motivos para a ocorrência desse descompasso serão elucidados no tópico a seguir, uma vez que, buscou-se, através das entrevistas com os gestores, verificar como ocorre, na prática, as indicações que estão nos textos normativos da UNIRIO. Esse é, sem dúvida, um dos principais desafios dos pesquisadores que se interessam pelo tema.

b) *O contexto da prática na política de criação do NAI da UNIRIO*

O contexto da prática é aquele em que a política está sujeita à interpretação e recriação. Esses processos podem produzir efeitos e consequências que acarretam mudanças e transformações significativas na política original. Isso quer dizer, como assinala Mainardes (2006), que as respostas aos textos políticos "têm consequências reais" e essas "consequências são vivenciadas dentro do terceiro contexto, o contexto da prática" (p. 53). E, nas palavras de Bowe et al. (1992), a questão fundamental, nesse caso, "é que a política não é simplesmente recebida e implementada dentro dessa arena, mas sim sujeita a interpretação e depois 'recriada'" (p. 22, tradução nossa).

Nesse sentido, neste tópico, nos atentaremos ao contexto da prática – da ação política – a partir do depoimento da gestão do NAI da UNIRIO. A entrevista ocorreu de modo presencial, no mês de março de 2022. Delimitamos como gestão, os coordenadores do NAI, que aqui denominamos como "entrevistado A" e "entrevistado B". A entrevista ocorreu com os dois gestores, concomitantemente, pois foi um pedido feito por eles. Como avaliamos que isso não comprometeria o objetivo da entrevista, assim o fizemos.

Com base na técnica da entrevista semiestruturada, a entrevista foi conduzida por um roteiro composto por blocos temáticos, cada um deles contando com um número variável de tópicos de

debate e perguntas norteadoras. Tivemos o cuidado de não retirar do entrevistado uma maior liberdade de construir sua resposta. Outros pontos que surgissem ao longo das falas poderiam ser explorados, mas sem perder de vista o interesse inicial da pesquisa.

Na primeira parte da entrevista, ao perguntar sobre a formação dos gestores do NAI, foi relatado que um é professor da UNIRIO e atua como diretor de um setor da Pró- reitoria de graduação (PROGRAD). A gestão do NAI é concomitante a sua função de diretor. A função de vice coordenação é exercida por servidor do quadro técnico da universidade, cujo cargo é denominado Técnico em Assuntos Educacionais (TAE). Quanto à formação/trajetórias profissionais que os levaram a estarem à frente do NAI e o conhecimento que eles têm em relação a inclusão, acessibilidade e educação especial, destacamos os seguintes trechos:

Entrevistado A: Meu conhecimento é muito em linhas gerais. Minha função no Núcleo é mais de articulação. Eu, agora, consegui uma vaga num curso para a educação para a pessoa com autismo. E eu consegui a vaga, vai começar em abril.

Entrevistado B: Eu tenho um pouquinho de conhecimento por estudar. Meu filho é autista. A gente já fazia ações de atendimento aos alunos com deficiência pelo Programa de Tutoria Especial. A tutoria chego a dizer que foi o contrário do NAI, né, a demanda. Foram surgindo os alunos, pipocando os alunos e aí, como é que a gente faz?

Analisando esses trechos e comparando-os com o contexto da produção do texto nacional e institucional, chegamos à seguinte indicação: diferente do que apontam os textos legislativos, os profissionais que estão à frente do setor da universidade que é responsável por atender os alunos público da Educação Especial não têm formação especializada. Nenhum dos dois têm formação específica na área da educação especial ou inclusão, mas, em algum momento e, de algum modo, se envolveram com as questões de inclusão e acessibilidade na universidade. Suas funções no NAI correm por fora de uma formação inicial e/ou continuada, pelo contrário, estão relacionadas com suas práticas dentro da UNIRIO.

Ainda nessa parte da entrevista, na fala do entrevistado B, podemos perceber que a presença desses estudantes no espaço universitário, suas visões, expectativas e necessidades podem impactar e transformar, em diferentes medidas e com alguma inércia, a própria universidade, seus setores, seus espaços, seus discursos, suas ações e seu papel como instituição.

Na segunda parte da entrevista, as perguntas se direcionaram para que pudéssemos compreender: i) a visão dos entrevistados sobre a educação inclusiva; ii) ter um panorama histórico das ações de acessibilidade e inclusão na universidade; iii) as ações do NAI e as dificuldades encontradas na gestão do NAI e; iv) o compromisso social que a universidade assume

com a inclusão. Sendo assim, para o recorte deste artigo, destacamos as falas de indicam como se deu o processo de criação do NAI, seus objetivos e desafios. As partes que destacamos são:

Entrevistado A: Chegou um momento que eu acho que a atitude é uma barreira ainda, mas aí eu acho que é cultura da UNIRIO, as coisas ainda são feitas muito de forma artesanal. O Núcleo precisa ser estabelecido, precisa de um espaço físico que ainda não tem, precisa ser formalizado de maneira sólida, com pessoas que se dediquem a ele, acho que falta isso. Pegar, então, olha, vamos ter esse espaço aqui, vamos ter essas pessoas especialistas, se não tem, vamos fazer concursos pra isso.

Entrevistado B: É muito característica da acessibilidade. Iniciar muito a partir de um voluntariado. De uma vontade das pessoas. Ainda acontece.

Entrevistado B: Há resistência, principalmente, quando você vem com uma demanda sempre muito preocupada com que o estudante saísse no topo, né. Tinha muito esse questionamento de como é que o estudante que tem cegueira, que tem X, que tem determinada coisa, ele ia fazer tal curso? Mas nunca se pensavam naquela possibilidade de adaptar o currículo, de rever, né.

Analisando esses trechos, pode-se depreender que, embora haja um conhecimento legal e científico dos caminhos que se deve percorrer com vistas ao avanço no processo de inclusão, a fragilidade das políticas de permanência e inclusão, através do voluntarismo, pode comprometer de forma significativa ações afirmativas já consolidadas, como por exemplo, a política de reserva de vagas para o acesso ao ensino superior. Principalmente, quando compreendemos que a inclusão não acontece só quando se amplia o acesso para o público com deficiência, mas sim quando se possibilita, por meio da oferta de recursos humanos e tecnológicos, que esses alunos concluam o ensino superior com êxito e preparados para a vida profissional.

Neste mesmo ponto, a partir segunda fala do entrevistado B, salientamos. que há na universidade, uma cultura que encaminha a formação de um sistema de ensino de qualidade não voltado para as necessidades gerais dos alunos, mas, exclusivamente para as acadêmicas. Essa visão, muitas vezes, cria a barreira atitudinal, aqui podendo ser relida também como uma barreira pedagógica – afinal de contas, a barreira pedagógica ocorre devido a uma barreira atitudinal do docente. Esse, com certeza, é um ponto de destaque na constituição de obstáculos à efetiva expansão de ações inclusivas para alunos com deficiência no ensino superior.

Outro trecho que merece atenção, tendo em vista o objetivo deste artigo, diz respeito às ações já implementadas e as pretendidas pelo NAI.

Entrevistado A: *O que foi feito além da criação e da tenativa de organizar e botar para funcionar o NAI? Na verdade, o que acontece, é que o INCLUIR é para verba de custeio e como o Núcleo em princípio não tem nem uma sala, a gente*

não tinha no que usar, mas a gente descobriu que pode pagar bolsa, então, pra ano que vem a gente vai criar um programa de facilitadores de aprendizagem pra pagar bolsa pra alunos, né, apoiarem colegas e a gente vai usar essa verba do INCLUIR pra pagar essas bolsas. É o que, por exemplo, a universidade x faz. Ela usa 100% da verba do INCLUIR pra isso.

Sobre essa fala, o que percebemos é que o NAI ainda está em processo muito inicial de estruturação. Os gestores ainda estão organizando, no papel apenas, as ações que pretendem fazer e tentando, antes disso, encontrar um espaço físico disponível na universidade que possa ser destinado ao NAI. Outro ponto da fala que é importante é sobre o programa de facilitadores de aprendizagem. Apesar de se apresentar com diferentes nomenclaturas de acordo com a instituição, esse tipo de programa é um modelo de ação praticada em algumas universidades federais, já que possibilita o pagamento das bolsas com os recursos do INCLUIR. Entretanto, são ações que acabam sendo tentativas de oferecer aos alunos com deficiência os recursos humanos especializados aos quais eles têm direito conforme os dispositivos previstos na LBI de 2015, e que, portanto, as universidades deveriam dispor.

Outra questão considerável é a respeito da rigidez das normas sobre o uso das verbas disponibilizadas pelo Programa INCLUIR. Como visto na fala do entrevistado A, transcrita acima, o gestor precisa adaptar as demandas desse público ao rol de pagamentos que se identifiquem como despesa de custeio, ou seja, que não resulte em aumento de patrimônio, com a aquisição, por exemplo, de equipamentos de tecnologia assistiva e, muitas vezes, isso se torna um limitador para o planejamento das ações que visem maior autonomia para o estudante com deficiência.

Outro ponto é em relação às verbas das universidades, mesmo não tendo sido destacado na entrevista, vale a pena mencionar que a Emenda Constitucional (EC) 95, que incluiu o teto de gastos na Constituição, provocou a queda dos recursos orçamentários destinados ao setor da educação. Especialistas reconhecem que o orçamento da pasta passou a apresentar queda contínua a partir de 2018. Essa queda orçamentária impossibilita, além de outras coisas, a contratação de pessoal especializado para atuar no processo de inclusão de estudantes com deficiência, o que se mostra determinante para a morosidade da atuação efetiva do NAI dentro da universidade.

Por fim, quando considerados os três contextos do Ciclo de Políticas, sobretudo o contexto da prática, é possível concluir que essa abordagem rompe, de fato, com as perspectivas estadocêntricas. Sem perder de vista a dimensão estrutural e a ação estatal, se assume, ao mesmo tempo, "que os professores e demais profissionais exercem um papel ativo no processo de interpretação e reinterpretação das políticas educacionais" (MAINARDES, 2006, p. 53). Isso fica evidente quando vimos o caso da criação do NAI da UNIRIO, pois mesmo com o descompasso entre a política de repasse de verbas para as universidades e as políticas que orientam ações de acessibilidade e inclusão, como, por exemplo, a aquisição de materiais adaptados e de tecnologia assistiva, contratação de pessoal especializado e reformas acessíveis, os gestores do NAI indicam a intenção da elaboração de um programa de facilitadores de aprendizagem com a verba do INCLUIR Tal ação, mesmo não sendo diretamente apontada em nenhum texto político-normativo, é uma possibilidade que os gestores elaboraram diante das orientações normativas e a realidade prática em que atuam.

Por último, salientamos que a criação do NAI não é a única ação necessária, mas é sim um importante caminho para a construção de mudanças que a universidade precisa encarar na busca de ser um espaço educacional inclusivo. Contudo, o processo de criação do NAI na UNIRIO deixou claro que existe alguns descompassos entre aquilo que é determinado em leis e decretos e aquilo que foi e está sendo realizado pela universidade. Esses descompassos ocorrem, entre outros fatores, a partir do que aqui foi identificado, tais como: i) a falta de profissional especializado na condução de um setor universitário que deve ser o responsável pela criação de ações de promoção da inclusão para estudantes com deficiência; ii) a presença do estudante é o que promove as ações que a universidade constrói. Mesmo tendo indicação para a criação de um núcleo de acessibilidade, desde 2005, foi apenas em 2021 que ele foi efetivamente criado e isso, ocorre, porque há uma maior demanda por ações inclusivas feita pelos próprios alunos com deficiência; iii) a barreira atitudinal ainda é muito presente na universidade e, por isso, é preciso a promoção de culturas que acolham, apreciem e acomodem a diversidade, pois sendo a universidade um microcosmo da sociedade, é preciso o trabalho com habilidades sociais que estejam baseadas nos princípios da igualdade e da justiça; e iv) a questão do tipo de verba do programa INCLUIR, assim como a diminuição do repasse de verbas dos governo federal para as universidades, principalmente, entre 2018 e 2022, são impasses que impedem a promoção de ações inclusivas que buscam eliminar barreiras arquitetônicas, pedagógicas e na comunicação e informação, por exemplo.

IV. Conclusão

Este trabalho foi um exercício de análise da política de criação do NAI em uma universidade federal brasileira, a partir da abordagem do Ciclo de Políticas,

proposta por Stephen J. Ball e colaboradores. Diante do recorte necessário, a investigação foi desenvolvida mediante a análise e a articulação de dois contextos: o contexto da produção do texto e o contexto da prática.

Na apreciação do contexto da produção do texto, foram analisados alguns textos político-normativos nacionais e documentos institucionais. Nesse ponto, observou-se que os textos políticos refletem um contexto histórico-social e, dessa maneira, não são neutros e objetivos; mas a materialização de interesses distintos, em constante tensão. Além disso, se constatou que a comunidade brasileira de pessoas com deficiência, transtornos globais de aprendizagem e superdotação ou altas habilidades já foi mais ou menos contemplada com leis, decretos e portarias que garantem o acesso à universidade

No contexto da prática, entretanto, ficou claro que a simples concessão do acesso e a existência de textos políticos que indicam estratégias de permanência e participação do estudante não correspondem a uma completa mudança de cenário. Há, sem dúvida, um conjunto de questões que geram um descompasso entre aquilo que é previsto nos textos político-normativos e o que corre na prática. Questões essas que impediram ou impedem, portanto, a estruturação de uma universidade acessível e inclusiva, algumas já discutidas neste trabalho, e outras que merecem novas pesquisas.

Em vista disso, a proposta deste artigo foi contribuir para a exposição/visibilização dessas questões, como um passo para prosseguir na construção da inclusão de pessoas com deficiência no ensino superior brasileiro. Ademais, espera- se que os elementos e questões apresentados subsidiem os debates na comunidade acadêmica, para que se possa avançar não somente nas produções científicas que tratem do escopo deste estudo, mas também na elaboração de práticas educacionais inclusivas para o público da educação especial no ensino superior. Tudo isso reforçando a urgente necessidade de garantir não só o acesso, mas, igualmente, a permanência, com qualidade, de estudantes com deficiência nas universidades brasileiras.

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World Language Medical Interpretation Courses in Nursing: Reasons for Incorporating, Diversifying and Implementing Medical Terminology Courses

By E. Javier Calleja

Abstract- Background: The inclusion of world language medical language interpretation into nursing education can be vital for nursing student's development, future job satisfaction and patient care. This research addressed the importance of adding medical language interpretation courses to nursing and other healthcare professions, why students and healthcare workers decided to enroll, complete and or exit these courses, and what kind of resources would be beneficial to help students achieve success.

Method: An online survey was administered to 110 nursing students in one southeastern university and 50 healthcare providers in a southeastern healthcare facility.

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Keywords: medical spanish, applied linguistics, spanish service-learning, medical interpretation, spanish heritage speakers.

GJHSS-G Classification: DDC: Class 370

WORLDLANGUAGEMEDICALINTERPRETATIONCOURSESINNURSINGREASONSFORINCORPORATINGDIVERSIFYINGANDIMPLEMENTINGMEDICALTERMINOLOGYCOURSES

Strictly as per the compliance and regulations of:

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Results: Sixty-two participants complete the survey. Participants indicated that they decided to enroll in these courses to properly care for all patient, be able to speak to patients directly and better the health a prevent health condition of their patients. In addition, they attributed their withdrawal from these courses the lack of tutoring and extra practice outside the classroom.

Conclusion: Foreign language courses such as medical language interpretation into nursing education can be vital for nursing student's development, future job satisfaction and patient care. The findings of this research were used to develop to redesign a language course: *Medical Interpretation During World Pandemic.*

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I. INTRODUCTION

The inclusion of foreign language courses such as medical language interpretation into nursing education can be vital for nursing student's development, future job satisfaction and patient care. According to Colina (2006), interpretations courses are student centered and its primary aim is to meet all students at their current language skill level. The National Board of Certification for Medical Interpreters has been serving as guidance and standards for such courses since 1986 (Neubert, 2000). Medical language interpretation courses are a foundation for students to become conversational in a medical setting, to gain practice independence and better communicate and understand the needs of patients and families; it is a way to gain a broader perspective of the communities they serve, work and live in (Richards, 2008; Calleja & Quach 2021). World languages courses can offer opportunities for nurses to challenge themselves and help them become new emerging leader, leaders that are prepared for honors programs and graduate programs through the life experiences and academic challenges that medical interpretation courses bring about (Kiraly, 2000; Patillo, 2015; Lewis et al., 1997). In fact, language interpretation courses prepares students to further develop their ability to analyze complex linguistic connections that they can latter utilize across disciplines such as those presented in honors courses while conducting professional research agenda (Calleja, 2018; William & Snider, 1992). In addition, medical interpretation nursing students are capable of not relaying on third parties to communicate on their behalf (Rayburn, 2017). The aim of this study is to answer why we need medical language interpretation courses in nursing, how is it beneficial to the nurses, patients and hospitals, and why caring for all stakeholders begins by properly caring for nurses and their education programs.

II. LITERATURE REVIEW

Medical language interpretation courses are a path for nurses to participate in exceptional and demanding cross-curricular courses that often times result in the participation of researches that are interdisciplinary in nature (Calleja, 2019). These courses, which expose nurses to patients of all regions of the world, are highly valued by graduate programs and institutions. In addition, these types of course commonly are stated as one of the top reasons as to why nurses peruse graduate courses and enjoy a healthier relationship with their professions (Altman et al., 2016; Calleja, 2014; Dos Santos, 2021). The National Board of Certification for Medical Interpreters (NBCMI, n.d.) has set standards that guide students and institutions on the certification process of students in six languages. There is not a lot of published scholarly work about nurses and their experiences in medical interpretation courses, but the published scholarly work demonstrates challenges and benefits of nurse's participation in such courses (Gile, 2009).

III. CHALLENGES OF MEDICAL LANGUAGE INTERPRETATION IN NURSING PROGRAMS

The implementation of medical language interpretation curses in nursing programs bring about

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new facets that challenges the retention and possible recruitment of nursing students. The new and different curricula presents challenges such as securing enough bilingual faculty to tech these classes, proximity to health care center with a high volume of non-English speaking population and financial resources to secure high-tech equipment to stay up to date with fast evolving technology (Colina, 2003). In addition, there are common challenges for both faculty and students, one of them being the lack of time and opportunities to practice, specifically in areas with a less diverse population. Medical language interpretation curses in nursing would have to be taken along with all clinical courses and general education courses (Angelelli, 2008). Despite the fact, medical language interpretation do not required anything special in comparison with the already structure and demanding nursing courses. Students of nursing worry that studying a foreign language while attending nursing school will impede their progress due to stress and possible lower grades (Gile, 2009; Halcomb et al., 2018; Squires, 2018).

IV. Benefits of Medical Language Interpretation in Nursing Programs

Although medical interpretation courses are challenging in nature, nurses that participate in these courses gain experiences and benefits that are exclusively related to world language and a diverse patient population, thus achieving diversity, equity and inclusion in our medical system. Throughout medical language interpretation courses, nurses become accustomed with how to care for patients' needs from other part of the world (Tuohy, 2008), practice safe guideline measures as well as conduct scholarly endeavors. Physicians and nurses at the University of California San Francisco have confirmed that even with limited or low proficiency in a foreign language taking medical interpretation courses helps them acquired communication skills proven vital to their careers (Diamond et al., 2012). Medical language interpretation courses in nursing promotes critical thinking, assertiveness, bring a worldwide view into any nursing team, foster a world class health care professional as well as develops a greater sense of judgment and job satisfaction (Bischoff et al., 2003; Calvillo et al., 2009; Fatahi et al., 2010; Orland-Barak & Wilhelem, 2005; Rayburn, 2017). Nurses who earn a medical interpretation minor with their Bachelor of Science in Nursing will have maximized their knowledge in their field and have increased worldwide professional career opportunities (Wu et al., 2021). In fact, nurses who were receiving their medical interpretation minor or were participating in professional foreign language courses had higher rate of participation in international work experience (Boschoff & Hudelson, 2010).

World language departments have the sole responsibility of developing, designing and coordinating medical interpretation programs with the different colleges and health care facilities in order to prepare nurses as a trained medical interpreter (Calleja, 2019; Tuot et al., 2012). The participation of nurses in these programs, that are programs research based in nature and often time part of honors curricula, will give nursing students a set of skill and experiences that will position them above their class pool, thus making them a greater asset to any team and healthcare facility (Chan et al., 2010; Lewis et al., 1997). The nature of practicing research in language courses, combined with the practicum aspect of medical interpretation courses, gives nurses a path to analyzed, practice and expand critical communication skills with patients at the same time allowing them to complete work for their core curricula (Wu et al., 2021). Research and practicum that takes place within the medical interpretation courses has proven to be a critical asset in roles such as critical care nurses, practitioners nurses and clinical nurses, students of all areas in health care can applied experiences from theses type of curricula towards future careers (Wu et al., 2021).

Nurses must be helped throughout the language learning process by a faculty expert in language acquisition to facilitate their level of language development. According to Diamond et al. (2012), the significance of the role that the language acquisition expert plays is vital. Although a faculty expert help student learn medial terminology and medical expressions, having a language acquisition expert also introduces nurses to the roles of a mentor and future instructor (Calleja, 2019; Lewis et al., 1997; Salavati et al., 2019). Partnership throughout nursing and world language classes, such as medical interpretation courses, can help students with their process towards graduation in identifying that they are not alone and how valuable their jobs are, thus helping them achieve a nursing degree with a medical interpretation certification.

Literature demonstrates that nurses that graduated with a language medical interpretation certification recognize professional advantages, such as more patient care exposure, research exposure and exposure to a diverse patient population. Notwithstanding advantages, nurses and other health care providers also recognize challenged in choosing to pursue a certification in medical language interpretation along with their healthcare degrees, such as lack of time to practice the language outside the classroom or healthcare facility. There are challenges that prevents the understanding of what stimulates nurses and healthcare providers to pursue medical interpretation programs and what kind of resources helps them stay committed throughout the duration of their education. To address these challenges, it is imperative to gain knowledge from nurses and health care workers

themselves into why they enroll in medical language interpretation programs, their motives from withdrawal, and what elements may have assisted their perseverance in such programs.

V. Method

Nursing students enrolled in a language medical interpretation program at one southeastern university of the United Sates and healthcare workers in a southeastern hospital of the United Sates were requested to participate in an electronic survey concerning why students enroll in these programs, why they withdraw from these programs, and what kind of improvement could be made to facilitate the expansion of these kind of programs. The survey taken by nursing students, nurses and other healthcare providers was developed based on literature and examined by experts. There was no additional validity or reliability established and approvals were not needed and no personal data was collected.

The survey included 110 students enrolled in the language medical interpretation minor from spring 2020 to spring 2022 and 50 healthcare providers employed at a health care facility during January 2020 until January 2022. The students were selected due to have been part of the language medical interpretation program at some point during their nursing degrees and the healthcare providers were selected by an internal hospital survey due to have been part of language medical language courses during their careers. The research team included a doctor and a register critical care nurse, two professional with more than a decade in health care, research and education experience with ample and vast knowledge in assessment and survey design. The survey was circulated by internal email, campus mail, it was administered via Qualtrics Core XM software, and the survey was sent to 110 students and 50 healthcare workers. Forty-seven students and fifteen health care workers completed the survey; answering the survey meant to provide consent for results only to be share. Emails were sent as reminders on January 7, 2022 and February 11, 2022. All date from the surveys was analyzed in aggregate after being deidentified.

VI. Results

Sixty-two participants complete the survey, which prompted a level of response yielding at 38%. The participants who answered the survey consisted of 23 first year nursing students (37.1%), 9 second year nursing students (14.5%), 7 third year nursing students (11.3%), 8 fourth year nursing students (12.9%), 5 three years nurses (8.1%), 4 five years nurses (6.5%), 2 ten years nurses (3.2%), 3 three years doctors (4.8%), and one five years doctor (1.6%). Participants' ages ranged from 18 to 41 years old, averaging 22.5 years. Forty-eight of the participant that answered the survey chose

to remain and pursue medical language interpretation courses (77%), while 14 participants abandoned their language courses (23%).

Participants were asked to select from a variety of multiple options the reason they identify was the main factor in their decision to enroll in medical language courses. The options presented in the survey included being able to speak to patients directly, broader understanding of the community, being able to properly care for all patients and families, leadership opportunities, learn about different patient population, opportunities to practice nursing overseas, pre-admission into graduate programs, future job satisfaction, self-development/self-care; participants were given the freedom to write out alternative answers. The primary reasons as to why participants enroll in medical language interpretation curses were being able to properly care for all patients and families (n= 49, 79%) and being able to speak to patients directly (n= 51, 82.3%). The least reason as to why participant were less likely to enroll in medical language interpretation courses was for opportunities to practice nursing overseas (n=5, 8%). All the other options presented to the participants were selected in the 40% to 50% range.

Participants answered whether they had withdrawn from their medical language interpretation courses. Fourteen participants answered that they had discontinues their enrollment in these courses, while forty-eight decided to stay enroll or completed their studies in medical language interpretation. The 48 participants that were enrolled or completed language courses answered a series of questions to recognize what their hopes and aims were from medical language interpretation programs. The choices given in the survey were: being able to speak to patients directly, being able to fully understand patient medical condition, being able to educate the patient and prevent future health condition, avoid miscommunication, gain cultural understanding of the community at large and practice an inclusive, equitable and diverse medical practice. The most commonly selected answer was being able to speak to the patient directly (n=29, 60.4%). The second most commonly selected answer (n=23, 47.9%) was being able to educate the patient and prevent future health condition. The least selected answers were avoid miscommunication (n=15, 31.3%) and gain cultural understanding of the community at large and practice an inclusive, equitable and diverse medical practice (n=9, 18.8%).

All participants were informed that there is a current effort to build a case for adding medical language interpretation courses in foreign language as part of nursing programs in order to help nurses with their future career satisfaction, care, and communication with their patients. Participants were asked about their preferred method of instruction for these courses.

Participants answered in a 64.5% that in-person (traditional in class seating form of instruction) is their preferred method, hybrid mode was selected in a 29% (in person classes with the option to be access live instruction via web-instruction), and online courses was chosen in a 6.5% (asynchronous, instruction via a web system through videos, and online programs).

The 62 survey participants were asked to complete a Likert-type question to identify resources that should or could benefit the selection and completion of medical language interpretation courses in nursing and other health care professions. Resources that the participants could choose were: Combining clinical hours with practicum hours of medical language interpretation course, samples of retired midterm and final exam for guidance, uniform courses across all sections, nearby sites to practice listening and oral proficiency, language tutors with ample availability, prominent resources outside textbook, access to materials that are technology friendly, and in class time to practice the language. All the participants (100%) agreed or strongly agreed that clinical hours should be combine with practicum hours of medical language interpretation courses. Fifty-eight participants (93.5%) expressed that they agreed or strongly agreed on uniform courses across all sections, and 52 participants (83.9%) indicated that having nearby sites to practice listening and oral proficiency was very important.

All 62 participants were ask to answer a series of short-answer questions. The three questions that received the most amount of feedback in terms of depth, length and articulation of thought and ideas were the following: what they thought about the role of textbooks, the availability of language tutors, and access to technology friendly materials within their language courses. Healthcare workers (nurses and doctors) expressed the importance of availability to live tutors (web and in person) at different times of the day. Nursing students expressed how imperative it is to have technology friendly materials and adequate resources outside the textbook. There were no reported resources mentioned besides those that were given to participant in the survey.

VII. Discussion

This research addressed the importance of adding medical language interpretation courses to nursing and other healthcare professions, why students and healthcare workers decided to enroll, complete and or exit these courses, and what kind of resources would be beneficial to have in order make these courses part of nursing and other healthcare curriculums. In this research participants pointed out that they enrolled in medical language courses to be able to educate the patient and prevent future health condition and also to be able to speak to the patient directly. These reasons, specifically being able to speak to the patient directly, educate the patient, and prevent future health condition, are associated with the previously published reason why interpreters are needed in the healthcare setting (Angelelli (2008).

Participants in this survey were less likely to enroll in medical language interpretation courses just for seeking opportunities to practice nursing overseas, which proves different from other research findings (Angelelli, 2008; Boschoff & Hudelson, 2010; Tuohy, 2008; Wu et al., 2021). This result may be due, in part, to vast and diverse population of the area in which the research was conducted. In this research, participants were most likely to complete and continue their world language education due to the immense value placed on communication, safety and community building, which is aligned with other studies results (Angelelli, 2008; Calleja, 2019; Chan et al., 2010; Diamond et al., 2012; Lewis et al., 1997; Wu et al., 2021).

While these findings reflect current nursing students from one university of southeastern United States and healthcare workers of one hospital located in Southeastern United States, these findings also should benefit future nursing students and students from other healthcare areas. The findings of this research were used to develop to redesign a language course: *Medical Interpretation During World Pandemic.* This course is the product of a compilation of all feedback and data collected throughout this research that the students could use to further their language and interpretation skills. The resources this course bring to student are: live tutors in order to help students succeed and develop the language, a weekly plan to course work and practice language outside the classroom, access to online tools for language practice and a standard based curriculum approach as explained in Calleja (2019).

There are areas of opportunities to grow in this research. One area of opportunity is the participant sample, as it is only nursing students and healthcare workers from one university and one hospital of the southeastern of the United Sates, which in terms could be seeing as self-limiting. This research, at a glance, is the first effort in our motivation to provide a solid foundation for the inclusion of medical language interpretation course into nursing curriculum and understanding what motivates students to choose and continue with foreign language courses while attending nursing school and other healthcare mayors and minors. Further study needs to take place in order to better assess and understand what makes students persist or desist in language courses when these are combined with their nursing and other healthcare professions so that new and innovative tools can be developed and tasted. It will be then when we can empower our findings and continue to forge a path towards a state and future national model of inclusion,

diversity and equity of medical language courses in nursing and healthcare professions at large.

VIII. Conclusion

The inclusion of foreign language courses such as medical language interpretation into nursing education can be vital for nursing student's development, future job satisfaction and patient care. This research addressed the importance of adding medical language interpretation courses to nursing and other healthcare professions, why students and healthcare workers decided to enroll, complete and or exit these courses, and what kind of resources would be beneficial to have in order make these courses part of nursing and other healthcare curriculums. The findings of this research were used to develop to redesign a language course: *Medical Interpretation During World Pandemic.* Future work will be focused on assessment, coordination of tutoring and use of the language inside and outside the classroom. Furthermore, the results of this research will help students and professors have open dialogue about obstacles and what resources can be utilized in order to overcome those obstacles while learning medical language interpretation in nursing and any other healthcare career.

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Digital Gaming, Ethics and Teacher Education

By Vanderlei J. Zacchi

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Abstract- The aim of this paper is mainly to develop connections among three areas: teacher education, ethics and digital game studies. The common thread among these three areas in this study is the idea of unpredictability. It is well known that a great number of digital games work around situations of decision making. Most of these situations imply moral and/or ethical consequences. Also, although decision making is highly dependent on (real and virtual) past experience, game players are usually exposed to unpredictable situations, turning the decision making process more complex. Likewise, teachers are often faced with unexpected situations in the classroom that go beyond their area of expertise. These situations also involve decision making, sometimes with ethical implications.

Keywords: digital games, teacher education, ethics, moral choices.

GJHSS-G Classification: ACM: K.3.1

DIGITALGAMINGETHICSANDTEACHEREDUCATION

Strictly as per the compliance and regulations of:

Digital Gaming, Ethics and Teacher Education

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I. Introduction

The aim of this paper is mainly to develop connections among three areas: teacher education, ethics and digital game studies. Based on a recently developed research conducted in a public federal university in Brazil, with would-be English language teachers, I present three possible courses of action which teachers can take when faced with unexpected situations: i) ignore them and stick to the plan; ii) lecture students about the issue raised by the situation; iii) integrate these issues into classroom practice. Obviously, a combination of them is also possible, but each one of these choices implies different consequences, having an impact not only in the classroom, but also in the lives of the students. This is where digital gaming may be of specific value for teacher education, since impromptu situations in the classroom tend to involve instant decisions, not previously provided for in the lesson plan. The interconnection among the three areas of investigation in the above mentioned research project had a prominent role in examining how these undergraduate students and would-be teachers connect the decision making process in digital games with real life and classroom situations, especially when involving ethical issues. The results presented and discussed here may be particularly useful in leading teachers/players to become more aware of the values and experiences that inform their views of the world and of reality.

I will start with a brief discussion about ethical decision making in digital games. Afterwards I will present a few works dealing with teacher education that are relevant for the issue at hand. Finally I will bring some data from the above mentioned investigation, followed by a brief discussion of the results.

II. Ethics and Digital Game Studies

In this section, before presenting some approaches related to ethics in digital gaming, I will bring about some issues commonly addressed in the specialized literature of digital games. Two of those are relevant for my discussion: i) the debate around narratology vs. ludology; ii) and the relationship between the "magic circle" (HUIZINGA, 1971) and digital games. Regarding the first issue, do digital games fit the criteria of traditional narratives (MURRAY, 1997) or do they belong to a totally new and different category (AARSETH, 2004)? This is a question that has been raising a good deal of discussion. According to Murray (1997, p. 142), every game "is a kind of abstract storytelling that resembles the world of ordinary experience but compresses it to intensify interest." For Ryan (RYAN, 2004, p. 333), both games and narratives are inspired by life, which is why they share a few similarities. However, narrative would relate to life as representation – with an eye to the past – while games would relate to life as simulation – with an eye to the future. Aarseth, on the other hand, believes that digital games need to be freed from "narrativism" (2004: 362) in order to build an alternative theory proper to their field of study. For him, what moves players is not the narrative, because playfulness can only be guaranteed by overcoming obstacles. The author refers more specifically to adventure games, whose purpose is to enable players to accomplish these goals. "It is this, and not the narrative, that is the dominant structure", emphasizes him (AARSETH, 2004, p. 368), because once a goal is achieved it becomes past, and the player goes on to pursue another goal. And this is why he believes that this type of game should not be classified as story. A "more useful terminology" would be "quest games" (p. 375).

Broadly speaking, these two approaches can be described as narratology and ludology. While the former resorts to "existing literary and humanities methods of understanding texts" for studying games, the latter argues that "a computer game is not a conventional text at all but an activity more akin to play or sport" (DOVEY; KENNEDY, 2006, p. 22).

As I noted elsewhere (ZACCHI, 2017), one may question, however, the real need to create a new category for narrative in digital games when there is already an entire existing theory, which is not static.

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Narrativity is a category that is in constant transformation, regardless of the object to which it is applied, let alone a highly dynamic medium such as the digital game. Murray's (1997, p. 53) account about her experience with the game *Planetfall* is quite illustrative of the importance of the narrative in the game. At a certain moment Floyd, one of the characters of the game, sacrifices himself for the player. According to her, "At this point, the game ceases to be a puzzle, a challenge, and becomes an evocative theatrical experience. The escape from the planet continues, but without Floyd's company the player feels lonely and dismayed." Murray draws attention to the dramatic load of the episode: the challenges will continue to be completed, but the experience for the player will no longer be the same. For the author, therefore, digital games are a new medium for storytelling, since "new traditions of storytelling" (p. 28) follow from previous ones; they are continuous and feed off each other in both form and content. Simkins and Steinkuehler (2008, p. 338) state that readers are constantly "coconstructing" and actively repurposing texts. Nevertheless, they also believe that the narratology vs. ludology debate has been "overblown", placing in sharp contrast "approaches that are not necessarily incompatible".

In *Detroit* (BUHL, 2018), a more recent game, whether it is true that you have to overcome challenges or not, it is quite clear that the narrative plays a much more relevant role in the development of the gameplay. Whereas the choices that the player makes are very important for the plot, having strong influence in the outcome of the narrative, the achievement of quests is something quite simple. All you have to do is follow the game's instructions about what controls to use, so that you can keep the narrative going. In this case, it is very difficult to agree with Aarseth (2004) in that this is the dominant structure of the game. In fact the game gives you the opportunity to replay the chapter in case you are not happy with the outcome of the story and the possible impacts it will have over the narrative. It is a choice, however, that does not interfere in the progression of the gameplay, since whether you completely solve the puzzle or not the game will still go on. For this kind of games, then, narrative and gameplay go hand in hand. The player may choose to replay a chapter either to improve his or her stats or to have an outcome more akin to his or her identity (ZACCHI, 2018). This approach is in line with Dovey and Kennedy's (2006, p. 86) proposal of methodological hybridity to expand and develop a more inclusive understanding of digital games, involving both the structuralist analysis "so dear to ludologists" and a cultural approach through representation, narrative and intertextuality.

Another important aspect in digital games is that of agency. Differently from printed text and cinema, and similarly to hypertext, digital gaming in general allows the user to make choices that will most often influence the narrative. This means that different players can take different paths, or the same player can take different paths each time he or she plays the same game, as I mentioned in the previous paragraph. Murray (1997, p. 128), however, claims that agency goes beyond mere participation or activity. It requires autonomy and a wide range of possible choices. Aarseth (2004, p. 366) believes that choices are an integral part of any game. However, in early adventure games, according to him, one had the impression that the dominant plot was discovered by the player, but in fact it was present from the beginning. What characterized them, therefore, was the rediscovery of the only possible path. Again, in *Detroit* (BUHL, 2018), as mentioned above, the narrative changes according to the choices made by the player, but the gameplay is quite predictable.

Regarding agency, Schott (2006, p. 134) points out that playing is not very different from other human activities. Agency, according to him, implies more than simply responding to a stimulus. It also implies exploring and manipulating the environment and trying to exert influence over it. Just as in real life, therefore, the act of playing involves regulated activities in environments that constrain behaviour. But while players may seek to conform to these constraints, they may also attempt to transgress them and exert some kind of control. For Schott (p.139), agency therefore presupposes an intentionality, so that players may act with a view to generating certain future events. However, nothing guarantees that these outcomes will be achieved. Thus, players' actions and intentions (just as in real life) can lead to unplanned, or even unwanted, outcomes.

As I noted elsewhere (ZACCHI, p. 2020), the idea behind the statement "This is just a game" has been considerably challenged (MAGNANI, 2014a; FLANAGAN; NISSENBAUM, 2016). On the level of game design, Flanagan and Nissenbaum (2016, p. 164) argue that the justification translated into the phrase "this is just a game" minimizes the act of game creation and denies its power to reflect and shape culture. Also, although decisions made during the gameplay do not have concrete consequences in real life, they often contain implications that can intertwine with attitudes taken in real life, affecting the player's identities in some way (ZACCHI, 2018). This view goes against what Huizinga (1971) called the "magic circle", the second issue mentioned at the beginning of this section. For him, by intensely absorbing the player, the game moment is detached from his or her everyday life and does not interfere with it. Crawford and Rutter (2006, p. 159) counter this view and claim that players are not "transported to another place," but are physically and socially situated in a very real world, which "will shape their game (and those of other players), which in turn will have consequences in the real world."

Dovey and Kennedy (2006, p. 29) argue that the magic circle defines a separate space for play, and for them the space occupied by digital games is not a utopian space. It can be experienced differently on the basis of several factors, such as age, geography, gender, ethnicity or class. For them, this view privileges an understanding of the relationships between play and cultural contexts rather than strictly structural accounts of digital gaming.

For Consalvo (2009, p. 411), the idea of the magic circle also presupposes a structuralist definition of game. So she advocates for a view of the game as a contextual, dynamic activity. In that case, meaning can only be made by the engagement of players with the game. In this process, they bring some outside knowledge into their gaming situations. And that is, she continues, "where the game occurs and where we must find its meaning" (p. 415). In conclusion, she rules out the possibility of games being magic circles, "where the ordinary rules of life do not apply" (p. 416). For her these rules apply, but "in relation to multiple contexts, across varying cultures, and into different groups, legal situations, and homes."

As put forward by Dovey and Kennedy (2006, p. 23 – emphasis added), "games are not static media texts – they are *activities*". Such a statement places additional emphasis on the ethical dimension of digital games, going beyond the aesthetic role of interpretation, traditionally ascribed to other forms of narrative, such as literature and cinema. As I noted elsewhere (ZACCHI, 2020), a performative ethics – defined in the act of playing itself, but in dialogue with ways of acting in the world – would be more suitable for the experience with digital games. The game is a contextual, meaning-making process (CONSALVO, 2009, p. 413). Therefore, meaning is constructed in play. The idea of a performative ethics could be a relevant contribution to the dualistic view of ethics as either normative or descriptive. Since most of these games involve communities of players, usually online, the decisions made during the game may reflect worldviews and ways of acting that take place in these communities. At the same time, they contribute for the construction of these modes and views, which implies, again, a strong cultural component. As Sicart (2009, p. 112) states, "There is a responsibility for the way players construct the ethical environment of the community of players, for the way players relate to each other, and for the kinds of practice they allow or disallow in the gaming experience." In such cases, decisions cannot be seen as actions that will take place only in the universe of the game, but they may have implications for life in society and for the redefinition of subjectivities.

When categorizing theories within philosophy of ethics according to their commitments, Simkins and Steinkuehler (2008, p. 334) make use of a framework composed of two axes: normative/descriptive axis and dogmatic/critical axis. In their opinion, "Descriptive, critical ethics is the most (if not only) appropriate framework for education in ethical reasoning in a democratic society" (p. 336). However, the idea of an ethical reasoning suggests that most ethical attitudes have their place of origin in the mind, as a result of rational thinking. This idea limits moral choices to a rational, mind-based process. Also, the normative/descriptive axis may not be enough to account for decision making in specific situations, more specifically for the teacher in the classroom. This is why a performative approach may be more comprehensive in this case.

Even so, Simkins and Steinkuehler take further steps to overcome such dualities. They place great emphasis on experience and action for developing critical ethical skills: "we find that developing skills of critical ethical reasoning requires active participation in difficult decisions as they arise in context" (p. 347). Difficult decisions in context are quite pervasive for the teacher in the classroom. Finally, they also add an extra feature to the narratology-ludology pattern: affect, turning it into a triad. The addition of affect to the act of playing, and therefore to the act of making (moral) decisions during game play, can drift it away from a solely mental process and enrich the critical dimension. According to them (p. 351), affect "emphasizes the experiential quality of the game, highlighting the personal connection players can have toward an RPG. […] In some cases, they even want to relate the game to their own lives".

For Sicart (2009, p. 160), ethical decisions in the game must imply consequences and "reward subsystems" linked to those decisions. Otherwise, the player will react to the dilemmas not from a moral instance, but from "her player logic" to achieve the necessary goals in the game (or to accomplish quests, according to Aarseth (2004)). Therefore, choices will only make some ethical sense if they bring consequences that make players reflect on their actions, even in cases where there is no choice to make but force players to reflect on their attitude and how it is or is not in tune with their social values. Thus, that does not apply to morally reprehensible attitudes that are already implicit in the rules and mechanics of the game. And it is not to do with the values conveyed by the game as a result of the intentions and interests of the creators. Even so, Sicart proposes some categorizations for games that contain ethical content in their creation process (SICART, 2009, p. 214-217). The first one divides games into open and closed ones. The open ones take into account the values of the player and his or her community, which can be used to develop a relationship with the game world. The closed ones create an ethical experience that does not allow the player to access his or her values beyond the boundaries of the game. This second category is

subdivided again into two others: subtracting ethics and mirroring ethics (2009, p. 215). Subtracting ethics creates a moral experience but leaves the ethical reflection to the player. Mirroring ethics, on the other hand, while presupposing the player as a moral being, forces the player to put himself or herself in a position that may make him or her uncomfortable, limiting his or her options for ethical decision making. This reinforces the following statement by Pointon (2015, p. 12): if the player cannot change the narrative of the game, then every choice leads to the same ending. Soon, he or she is left with only the possibility to "obey!", or give up on completing the game.

Kalantzis and Cope's open and closed rhetorics (2020) resemble in some way Sicart's (2009) definitions of open and closed ethical games. Kalantzis and Cope's focus is on the meaning making process in the production and interpretation of texts. So, while closed rhetoric "Sets out to limit the scope for meaning of interpreters" (2020, p. 202), open rhetoric "Anticipates the possibility of differences in interpretation, making space for alternatives" (p. 203). In their multifunctional categorization, rhetoric is under interest and not agency, which might be more suitable for analyzing digital games.

As for Simkins and Steinkuehler's proposal (2008, p. 349), one of the criteria which the authors pose for fostering ethical decision making is social context. The games under this category allow players "not only to experience their own character's role in a given social world but also to engage with other members of it." And they also "provide an in-game cultural framework for interpretation in some way" (p. 350). The game used in this research, *Life is strange* (see below), can be said to fall mainly in the categories of open games (SICART, 2009), open rhetoric (KALANTZIS; COPE, 2020) and social context (SIMKINS; STEINKUEHLER, 2008).

III. Digital Games and the Classroom: Expecting the Unexpected

There is an extensive literature about digital games and learning (GEE, 2004; ZACCHI, 2017; SQUIRE, 2006; MAGNANI, 2014b; SIMKINS; STEINKUEHLER, 2008), but not so much about digital games and teacher education. My concern here is about the use of commercial games and not educational (or the so called serious) ones.

As I have already noted (ZACCHI, 2020), from the player's point of view in particular, there are several instances where ethics can be invoked when it comes to digital games. The first one is the choice of genre itself. Many players already know beforehand if a game is violent or not or if it presupposes certain "condemnable" attitudes in real life. The games in the *GTA* series have become famous for their "gratuitous violence" content. Those who choose to play them usually know what they

will find. But the fact that a person chooses a game of dubious ethical content does not imply that he or she is in favor of this content. After all, an ethical attitude does not apply to the choice of a game or a genre, but to how to play it.

The sense of ethics in this work can refer both to the adherence or not to a set of collectively negotiated behaviors and rules and to a way of acting in the world. Although the emphasis has fallen on the first sense, it is relevant to think about how the reflections derived from the actions in the game can point to new ways of acting in the world, creating, consequently, conditions for the construction of new subjectivities. This vision of ethics implies a performative approach, distancing itself from merely descriptive or normative conceptions of behavior, as I mentioned above.

In a previous project, I put forward the idea that foreign language teachers nowadays are exposed to a number of factors that can challenge not only their authority, but also the very knowledge about the subjects that they are supposed to teach (ZACCHI, 2015). If in previous times teachers were recognized as the holders of knowledge par excellence – and by means of which they would exert their authority – nowadays they are dependent on the context of the classroom as a starting point from which to design the contents of their classes. The teacher is thus forced to deal with the unknown, the uncertain, the unexpected.

I put forward the necessity to change the culture of teaching so as to reflect the shifting identities that are in play nowadays. In order to better prepare citizens for present-day societies, we have to match the school world and the lifeworlds of the students. And since teachers cannot predict what those lifeworlds are or will be, they should be prepared for the different. Students' sociocultural backgrounds should be taken into account, regarding their place of origin, religion, ethnicity, gender, social class, among others. Therefore, it is heterogeneity rather than homogeneity that education should aim at in order to prepare people "for the unpredictability of engagement with lifeworld differences" so that they can recognize and negotiate those differences effectively (COPE; KALANTZIS, 2000, p. 130).

In conclusion, I argued that the context is also constantly changing, in part due to the myriad of online and offline networks in which learners take part nowadays. As a result, both contexts and identities keep shifting. We should aim then at a flexible and unknown student. The emphasis, in this case, is placed on performance rather than on competence. Difference could then be seen as a starting point, rather than as an obstacle (ZACCHI; NASCIMENTO, 2019). That can also be the cause of a great deal of uncertainty, since difference presupposes conflict and builds on performatively, on a daily basis. Preparing teachers for such a situation is one of the greatest challenges in

teacher education, since according to Biesta "Education, in short, […] must prepare for the incalculable" (2009, p. 35).

According to Santana and Zacchi (2022), in digital gaming some situations or attitudes may result in events that are beyond the player's control, requiring most of the time a quick action to solve or at least get out of that situation. This unpredictability shows that at any moment the player can be surprised with some event, in a completely unexpected environment, where anything, eventually, can happen.

This unpredictability is undoubtedly one of the many attributes of society taken into games, as "we live in a rhizomatic world, of interculturalities, juxtapositions and different complexities" (MENEZES DE SOUZA, 2011, p. 292). These complexities are present in all spheres that we know and that make up the social environment, including the classroom.

Seeing this link built between the complexities of the real world and their interconnection in games, it is also fitting to reflect on the relationship between the classroom and this real world that is being discussed here, knowing that, besides being players, the informants of this research are also future English language teachers (see below). Initially, it is necessary to consider that today's teachers need to deal with new ways of constructing knowledge and meanings, which also include digital games and other digital spaces.

New ways of learning emerge daily, which can change how individuals think and act, directly impacting the classroom, where "the teacher must deal with the media that the student is used to using outside the classroom, the internet especially, [and] video games" (MENEZES DE SOUZA, 2011, p. 279-280). Based on these assumptions, Menezes de Souza (2011, p. 279) refers to today's world as "a globalized world, a world of complexities, which forces us to act in a different way in our classrooms", i.e. to act more ethically and responsibly as educators. He highlights, however, that the practices adopted, especially in the scope of English language, even after numerous studies on new learning methods, are still shaped without taking into account this dialogue between society and the classroom, which results in a decontextualized teaching.

In line with this idea of instability in the classroom, Monte Mór's (2018, p. 273-274) approach to teacher education is based on what she calls a design-redesign process, which involves both theory and practice. The theoretical and practical choices imply mixing the conventional – as suggested by the academic program – with what escapes the standard – the varied texts that trigger strangeness, non-linearity, that confront different points of view, that provoke reflections on centralities and margins, colonialities, naturalizations, homogeneities and heterogeneities. Hence the design-redesign is done according to the contents of the teacher education programs, but from a

critical perspective. In reading activities, she calls the attention to the role of the participants – students or teachers – as meaning makers, which gives them the opportunity to reconstruct meanings, to rewrite or produce printed, digital or audiovisual texts; to adapt didactic units from books; to redesign didactic-pedagogical plans; to elaborate collectively.

Nascimento (2021, p. 81) adds to the proposal of a critical teacher education by pointing out the complexity involved in it. Therefore, she advocates for the necessity to adopt theories that help to understand, explain and act in view of the connections among teacher education, teaching and the world around us. For her, digital literacies are among those theories, and digital media have great potential for developing a critical stance (p. 90) in education. In the context of an increasing process of social digitization, she calls our attention to the development of new ways of knowledge construction, which happen mainly through digital media and can also affect teacher education.

IV. The Research

Bearing all these issues in mind, I decided to start a project involving digital gaming, ethical choices and English language teacher education. The main objective was to investigate how future English teachers connect game ethics with real life ethics and English teaching. As a first premise, we wanted to understand how these would-be teachers could benefit from making impromptu decisions in games and apply them in their practice.

Initially, a group was created on the Steam platform (store.steampowered.com), where it is possible, besides having access to a variety of games, to participate in discussions, forums and other activities. We then invited informants/students from an English Language and Literature course at a federal public university who might be interested in taking part in the research. In the end, 9 male students and 5 female students volunteered, with age ranging from 18 to 32 years. All of them were familiar with digital gaming. The research team consisted of myself (as coordinator) and 3 undergraduate junior researchers.

The first stage of data collection consisted of filling out a questionnaire, which aimed to identify the participants' relationships with digital games. Then, the discussions were started through the Steam platform, whose topics brought the guiding questions of the research in more detail. The interaction process took place as follows: the researchers created topics on the main themes of the research and posted questions, and the participants answered these questions and gave suggestions. In total, throughout the year of 2020, six topics were created, ranging from 1 to 23 posts on each topic. Finally, six of the students completed the first two stages of the game *Life is Strange* (BAGHADOUST,
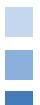
2015), which is heavily focused on decision-making situations. The gameplays were recorded using the Windows 10 gaming software Xbox Game Bar to verify the players' choices and how they faced the ethical dilemmas they were confronted with during the game experience.

Life is Strange is a single player game. The game was released in episode format, which can be played separately, although they are interconnected in their narratives. In it, the player assumes the identity of Max, an introspective photography student at a renowned school in the city of Arcadia Bay. Max had recently returned after five years away from her hometown. Now, seeking to further her studies in photography under the guidance of Professor Mark Jefferson, she must deal with several choices presented to her during the game. It is up to her to interpret and judge them, and she is forced to make decisions in order to move the narrative forward, acting as a kind of mediator between the player, the game, and the decisions made.

Max discovers that she has a superpower to go back in time. This feature gives the player the option to reverse actions, which can happen in several different situations and are important to the progress of the narrative. As far as essential choices are concerned, whenever the player is confronted with one of them, a warning appears on the screen stating that "This action will have consequences". If the player is not satisfied with the result, he or she can use (most of the time) the power of the protagonist to go back in time and make a new choice, also changing the course of the narrative.

For the below analysis, I will make use of data generated from the first and second steps of data gathering: questionnaires and group discussions. I will also mainly focus on data regarding teacher education, taking into account that the research was aimed at pre-service English teachers. For the sake of contextualization, I will also provide some discussions about ethics and digital gaming.

Starting with the questionnaires, composed of both closed and open questions, the final one was specifically designed to assess how these would-be teachers might connect in-game attitudes with classrooms decisions:

Is it possible that the decisions made in a game can influence teaching practices and decision-making in the classroom? How do you – as a player and (future) teacher – see yourself in this process?

Most of the answers were rather vague, not addressing the classroom directly, but focusing on general qualifications necessary for being a teacher. Some of them were quite strict. Cris simply answered, "Yes.", whereas Adrian stated: "I can't imagine a game that has the power to influence teaching."

Adrian's statement points to a relevant issue in relation to digital games and teaching. There is a common sense prevalent among undergraduate students that applying games to teaching means instrumentally taking them to the classroom. Our proposal with the project, which reflected in the above question, was to think of ways to bring the rationale behind decision making in games to the language classroom, and not necessarily making actual use of a specific digital game.

More in tune with this proposal, a few answers from the participants suggested ways to apply the knowledge obtained in games in the teaching practice. They were still very vague, although this is understandable in the initial stages of ethnographic research. Some examples are:

> […] by transposing the refusal to give up on winning the game into real life. (B.S.)

> Sometimes a team member is new to the game, […so] you need to have the responsibility, empathy and patience to help and teach this person. (klevertoncad)

> […] help fix a certain subject that is not being understood by everyone (larichows)

> […] strategy and brain games [to] get the teacher out of a complicated situation, especially with children, it can be anything from an icebreaker activity to an escape valve. (clev0425)

B.S. limits his answer to an attitude the player could take to real life, whereas larichows treats the experience with digital gaming as merely instrumental when applying it to the classroom. klevertoncad compares the task of instructing newbies in digital games to that of teaching. In fact, this comparison is only implicit, for he does not explicitly mention teaching or the classroom. Finally, clev0425 simply sees digital games as accessories for classroom control.

Then there is only one that touches the issue of ethics:

> The ideal in my opinion would be to ban the most violent games according to age group, reinforcing issues such as ethics and differentiation by showing the differences between the two types of environment: the real and the virtual for the child. (Duda)

But it is also vague in terms of the use of digital games in teaching, adopting a rather prescriptive stance towards digital gaming itself.

The above tendency did not seem to diminish after we moved to the group discussions on Steam. In the discussion forum entitled "Teacher Education", we started by asking about how to deal with unpredictability in the classroom, taking into account that, even when being familiar with certain game genres, we still have to make impromptu decisions when facing unpredictable situations. One of the participants came up with an interesting answer:

> [...] After all, we are dealing with humans, anything can happen during the lesson, unforeseen events, opportunities to go deeper into other discussions working on critique... I believe that there is no universal approach or strategy that

will work in all classes. We as teachers have to be prepared to deal with this in class, because unlike games we don't have a checkpoint or a restart in the classroom haha (Taru Sensei, 27 May 2020).

This may have been the comment that most explicitly connected game play with the task of teaching without reducing it to an instrumental process. By stating that "anything can happen during the lesson, unforeseen events, opportunities to go deeper into other discussions working on critique", Taru brings to the fore the possibility of putting into practice a performative ethics. However, other comments kept the instrumental tone and vague proposals. In the following statement, adopting a digital gaming approach to classroom, with no further elaboration, would be enough to guarantee some degree of innovation:

I believe that the teacher has to be always updated. Through games, the teacher can end up attracting the attention of a large part of the class, letting go of the standard conventional classes. (Mortte, 1 July 2020)

So, our next step was to try to also connect their life experiences with the whole ensemble:

Guys, in some comments on the discussions here on Steam it was clear that you relate real life with the gaming world, which is very interesting! So, as future teachers, how do you think about using this relationship in the classroom? And what specifically from games could be used in the classroom?

The teacher could choose a game related to the lesson's theme, tell a little about the characters and the objectives of the game, choose a specific scene from the game and show it on the overhead projector, without showing the complete unfolding of the scene, generating a certain suspense. From there the teacher asks for students' opinions and starts a kind of debate about what the character could do, the environment, etc. The game scene and the debate would be like a preparation to start a new subject, and at the end of the class the teacher releases the continuation of the scene or a new scene to leave the students thinking for the next class. (klevertoncad, 7 July 2020)

We can learn several things about various areas of knowledge with the games, in addition the games stimulate us and make us feel various emotions with the various situations that they create. I think that using these situations to teach enriches the process, making it more meaningful for those who identify themselves with the games, their worlds and their narratives. (JhinVilL, 7 July 2020)

The persistence about beating a stage of some game will be brought to the classroom along with me. Also, just like in strategy games, I will try every possible way to teach until everything is well established about the content – sometimes even encouraging the playing of some of the biggest games that helped me learn, in this case English – like Pokémon Sapphire for the GBA. (B.S., July 7, 2020)

Once again, the comments presented vague proposals or skipped the main issue to some extent. Since the research team had requested "specific" examples of the use of digital games in teaching,

klevertoncad gave a more detailed account of what he might do on such occasion. Even so, I consider his comment to fall within the category of a descriptive ethics, mainly aiming at describing processes and trying to establish what's right and what's wrong. On the other hand, JhinVil was rather vague about his proposal, although it is also a good example of what Simkins and Steinkuehler (2008) call affect in digital gaming. B.S. proposed to borrow from games a feature that looks positivist when applied to education, i.e. the idea that classroom contents can be taught in a thoroughly successful way. Besides, he also resorts to an instrumental use of games for learning a subject (English).

Finally, we insisted on the idea of impromptu decisions in the game and in the classroom:

As a player, you are surprised by some situation that threatens to take away your control during the game, how would you resolve this condition? In a similar classroom scenario, how would you handle this situation?

Only three participants posted their comments for this, but all of them tended to present solutions based on the imposition of discipline, whether connected with video game situations or not. Such an attitude is in line with the characteristics of a normative ethics. It can also be classified as closed rhetorics (KALANTZIS; COPE, 2020) and seems to reflect what happens in closed ethical games, according to Sicart (2009).

Interestingly, one of the most situated comments came from a different discussion, not directly related to teacher education. When we asked, in the discussion forum Ethics and the Player's Behavior, *What kind of conduct do you consider wrong/unacceptable for a player in the game environment?* Taru Sensei commented:

[…the game] was full of players with this behaviour of wanting to get in the way of weaker players just because they can. It made me reflect a lot about what Paulo Freire said about the dream of the oppressed being that of becoming the oppressor. Many players have this behaviour because it's an environment where they can be the oppressors just because they are protected by another "identity" in the game. (12 May 2020)

Although this comment is not directly connected with the (English) classroom, it rests well in the educational field, since Taru seeks to apply one of Paulo Freire's most notable principles, that of the oppressed's desire to become the oppressor through access to power.

I would like to conclude this analysis by bringing up some data about the players' experiences with *Life is Strange.* Mathie (24 June 2020) mentioned that "playing this game having anxiety, or even depression, must be really hard, because you really feel like you've killed someone if you make a bad decision". JhinVilL (24 June 2020) emphasizes this link with real life: "we can even

draw parallels with real situations that have happened to acquaintances and people close to us". However, on another occasion, he stated:

Precisely because it is a virtual environment we feel "safe" to do things we could not or would never do in real life, the limit of this is the game itself and what we can do in it. In Life is Strange, for example, it's very easy to make decisions that we wouldn't make in real life just to "see what happens". After all, it's just a game. (7 July 2020)

There seems to be some kind of contradiction in his words. Although, at first, he manages to see a link between the game's narrative and real life, he later dismisses that possibility by resorting to the well known this-is-just-a-game rationale.

Taru Sensei, on the other hand, resorted to another game, from the same genre, to illustrate how these games can have an impact on players' lives:

[In] another game I played recently, Detroit: Become Human, I felt the moral and ethical weight of every decision I made [...] My gameplay was very immersive and I remember caring a lot about Alice's mental and physical health. Even though she was an NPC in a game, I cared for her as if she were my real daughter. I ended up not finishing the game [...] and I don't feel like playing it again. (Taru Sensei, 12 May 2020)

These final comments give us a good idea about how the experience with this kind of genre may involve affect (SIMKINS; STEINKUEHLER, 2008).

V. CONCLUSION

I started this paper by proposing an interconnection among ethics, digital games and teacher education to examine how undergraduate students and would-be English language teachers connect the decision making process in digital games with real life and classroom situations, especially when involving ethical issues. The point of departure was the idea that – similarly to what happens in digital gaming – impromptu situations in the classroom tend to involve instant decisions, not previously provided for in the lesson plan.

With regard to the three environments mentioned above (game, real life, classroom), it can be seen that the participants in this research did not have many problems in making the connections between the first two, especially when it comes to making moral and/or ethical decisions. However, when it comes to the classroom, the difficulties are quite apparent. Part of the difficulty may lie in the teacher education process itself, which tends to privilege working with fixed and planned structures, alien to the dynamism of the real classroom (MENEZES DE SOUZA, 2011; ZACCHI, 2015).

Another possible source of problems is an old acquaintance. Working with digital games in the classroom can be seen as just another way of using non-verbal texts to support work on linguistic elements, e.g. grammar, vocabulary, verbal skills. Similar approaches have been used in the past with other non-verbal resources such as songs, videos and cartoons. However, nowadays this problem is augmented by the myriad of digital resources available in young people's everyday lives.

Taking into account the three types of ethics presented at the beginning of this paper, I would like to propose their application in the context of the classroom, mainly in relation to the performance of teachers and based on a scenario in which complex dilemmas arise during their practice. In this way, normative ethics refers to a posture that tries to impose on students what is right and what is wrong, in a monological discourse that does not allow for contestation. Descriptive ethics also has as its principle the choice between right and wrong, not in an imposing sense, but only in an explanatory one. Performative ethics, finally, arises when the dilemma, making its appearance in the classroom, is taken by the teacher as a starting point for discussions and/or activities around the possible themes related to it. The teacher, in this case, takes the opportunity to make the students reflect critically on the issue and make their own decisions. While the first and the second ones can be defined as closed rhetoric, the latter fits well within open rhetoric (KALANTZIS; COPE, 2020).

Before ending, I would like to make a quick comparison between two participants, Taru Sensei and B.S. The first one stood out for having managed to cross, even if timidly, the borders mentioned in the above paragraphs by perceiving possible points of contact between the digital game environment and the classroom, but not as a mere application of techniques. This positioning is perceptible in comments such as "unlike games we don't have a checkpoint or a restart in the classroom", and when he compares the behaviour of some players to "what Paulo Freire said about the dream of the oppressed being that of becoming the oppressor".

B.S., on the other hand, tended to bring to the discussion preconceived ideas about what he considers to be the roles of teachers in general. In a sense, they were decontextualized regarding the possible uses of digital games as classroom resources. In statements like "transposing the refusal to give up on winning the game into real life", "The persistence about beating a stage of some game will be brought to the classroom along with me" and "it is not only the student who is there to learn, in fact each and every person is always learning until the day they die", one gets the impression that he is speaking more out of his own conviction than as a result of a critical evaluation developed in his educational process and which could also be applied in several other situations.

What these data suggest in terms of teacher education is the need to invest mainly in two fronts: a) prepare future teachers to work with digital media and

multimodal texts so as not to make them mere supports for linguistic contents; b) give less emphasis on a competence-based education, privileging the fluidity and dynamics of the different classroom contexts. This implies an approach which takes into account performative processes, constructed in the everyday life of the classroom, with all its unpredictability. Decision-making, in this case, goes far beyond a normative and a descriptive ethics, making room for a more performative one. Bringing back the possible courses of action which I presented in the introduction, ignoring unexpected situations or merely lecturing students about the issues raised by them will not be enough for fostering critical reflection. For performative ethics to take place in the classroom, the teacher will have to integrate these issues into classroom practice in a number of different ways, and not by just proposing open discussions about them.

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Effects of Medium of Instruction (Yoruba Language) on Secondary School Students' Performance in Mathematics

By Ayodeji Modupe Ayodele, Ojo Amos Adewale & Daramola Kayode Raphael

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Abstract- Mathematics is one of the core subjects in secondary education and a good performance in the subject is a key to gaining admission into higher institution of learning. In any mathematical educational setting, the role of language cannot be deemphasized as it is a major tool that often determines the learning outcome of learners in the subject. To this end the medium of instruction in mathematics classroom should be one that the learners can easily decipher. This study therefore, investigated the effects of mother tongue as supplementary medium of instruction on junior secondary school students' performance in Mathematics in Ekiti State, Nigeria. The purpose was to examine the effectiveness of mother tongue as a supplementary medium of instruction. The study adopted a three group pre-test post-test quasi experimental research design. The sample for the study consisted of 194 junior secondary school one students selected from three secondary schools in Ekiti State through multistage sampling procedure. One research instrument tagged Mathematics Performance Test was used for data collection in the study.

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Effects of Medium of Instruction (Yoruba Language) on Secondary School Students' Performance in Mathematics

Ayodeji Modupe Ayodele [α], Ojo Amos Adewale [σ] & Daramola Kayode Raphael [ρ]

Abstract- Mathematics is one of the core subjects in secondary education and a good performance in the subject is a key to gaining admission into higher institution of learning. In any mathematical educational setting, the role of language cannot be deemphasized as it is a major tool that often determines the learning outcome of learners in the subject. To this end the medium of instruction in mathematics classroom should be one that the learners can easily decipher. This study therefore, investigated the effects of mother tongue as supplementary medium of instruction on junior secondary school students' performance in Mathematics in Ekiti State, Nigeria. The purpose was to examine the effectiveness of mother tongue as a supplementary medium of instruction. The study adopted a three group pre-test post-test quasi experimental research design. The sample for the study consisted of 194 junior secondary school one students selected from three secondary schools in Ekiti State through multistage sampling procedure. One research instrument tagged Mathematics Performance Test was used for data collection in the study. MPT had a reliability coefficient of 0.82. Data collected were analyzed using mean, standard deviation, t-test, ANOVA and ANCOVA. Results of the study showed that those exposed to mother tongue as supplementary medium of instruction performed better than those not so exposed. Based on the findings it was concluded that mother tongue as supplementary medium of instruction is an effective medium of instruction for mathematics. It was therefore recommended that teachers should be more dynamic in their choice of instructional medium during classroom interactions rather than sticking to the conventional medium of instruction which may not be productive to the learner.

Keywords: performance, mother tongue, instructional medium, mathematics.

I. Introduction

In the teaching and learning of Mathematics, language is important for effectiveness of the teaching and learning process. It is the major tool which mediates interactions between teachers and learners and also between the learners. Studies have shown that in teaching and learning of Mathematics, the issue of language cannot be overlooked. For instance, Popoola (2013) suggested that teachers may be able to calculate and arrive at the right answers when solving problems given to their students, but may end up creating more issues as a result of their inability to fully explain the technical terms and show their meaning in terms of daily use and application. In a study, Durkin in Ayodeji (2017) made the claim that language is the foundation of mathematics education, that language determines its progress and setbacks, and that language is frequently used to evaluate its achievements. Studies such as Bermejo et al. (2021) and Nkode et al (2018) also support this assertion. This portends the fact that the performance of students in Mathematics cannot be dissociated from the medium of instruction. This is probably why Setati (2005) advocated the need for further studies on the relationship between language and the teaching and learning of Mathematics.

Thus, it may be necessary to instruct pupils/students in the language they understand and which they can decipher easily. The mother tongue/language of the environment may therefore, be the best language for this purpose as against the use of a learner's second language as it is obtainable or practiced in most African countries.

The Federal Government of Nigeria (FRN, 2013) in her National Policy on Education, expressly stated that the language of instruction for the first four years of schooling for every Nigerian child will be the mother tongue of the child, but despite the existence of this policy on paper, the implementation is not enforced comprehensively. It is disheartening to know that as at today, except in some areas in the northern part of the country, the language of the environment or mother tongue is labeled as vernacular in the schools and pupils/students are being made to pay fine in some schools for speaking their mother tongue. This shows that basic mathematical concepts that should have been introduced at this level of education in the child's mother tongue were introduced using the child's second language which probably he/she is just learning. This may inhibit the performance of learners in Mathematics. Over the years the poor and fluctuating performance of students in Mathematics has been a source of concern to stake holders and despite several strategies mounted up in schools, dwindling performances are still recorded yearly. This has necessitated the need to find other

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means through which the performance of students can be improved in the subject. This study is therefore focused on medium of instruction as a factor that can improve or impair the performance of students in Mathematics.

Like most African countries, Nigeria has a language policy on Education which is poorly implemented or not implemented at all in some areas of the country. Being a multilingual nation the policy adopted the three main languages: Igbo, Yoruba and Hausa languages as medium of instruction in the first four years of schooling for every child in the country. However it has been observed by various researchers such as Ayodeji (2017) and Adenegan, Raji and Adenegan (2014) at different times that this policy is literarily on paper. The weakness in the implementation of this policy has therefore caused a dearth of availability of instructional materials in these mother tongues as most textbooks are prepared in English language which appears to be the favoured language of instruction in the classroom. There is however, an avalanche of research on the use of mother tongue in the country as an important factor to improve the performance of students in various subjects. Notable among these researches is the experiment code named Ife Six Year Primary Project at the end of the research project it was established, that mother tongue can be used effectively as a medium of instruction in the classroom. Fafunwa, Macauley and Funso-Sokoya (1989) observed that children who participated in the project who turned to technical pursuit proved more resourceful later than their counterparts from other schools. In recent times researchers such as Osungbemiro, et al, (2013) and Awopetu (2016) also corroborates the findings of Fafunwa(1975). While researches have been carried out on the use of mother tongue as the only medium of instruction in primary schools in the country, little had been done on the use of mother tongue as a supplementary medium of instruction in the teaching and learning process.

The use of Yoruba language in the teaching of Mathematics has been advocated by notable researchers such as Fafunwa (1975) and Oluwole (2014). Worthy of note is the fact that the Yoruba counting system take cognisance of the four basic arithmetical operations, namely; division, multiplication, addition and subtraction (*pinpin, isodipupo, aropo, & ayokuro*). Adenegan, *et al* (2014) affirmed this in their submissions that, it can easily be deduced that in the Yoruba counting of higher numbers, addition, subtraction, multiplication and division take their places in the nomenclature. They then opined that if the curriculum planners can incorporate indigenous language teaching into Mathematics curriculum, there will be remarkable improvement in the teaching and learning of Mathematics.

The viability of Yoruba as a medium of instruction has been proved over and over by researchers who had at one time or the other carried out researches in this area of study. The experiment carried out by Fafunwa between 1971 and 1983 is one of such researches that have proved the viability of the Yoruba language. The six-year project according to Abidogun (2012) was aimed at giving the child an all-round education that should cut across the three domains of learning (cognitive, affective and psychomotor). For those six years, English language was taught as a subject while the language of the classroom was the Yoruba Language, Ejieh (2004), noted that steps taken to achieve the implementation of the programme included the designing of curriculum and relevant teaching aids. Indigenous language, as opined by Oluwole (2014), should be the only means of passing instructions in Nigerian primary and secondary schools. He further enjoined the Federal Government of Nigeria to place Yoruba language on the same pedestal as English language and French which are made compulsory subjects in our schools.

However, as viable as Yoruba language as medium of instruction is, there are challenges that may be inimical to its viability. Such challenges include lack of written resources needed to teach the subject as well as inability to find a linguistic equivalent of some mathematical terms in the indigenous language. Thus, it is the opinion of the researcher that the use of mother tongue can be supplementary to the lingua franca that is, it can be used in explaining terms in such a way that the learner would be carried along in the lesson, thus effectively introducing the learners' mother tongue in the teaching and learning of Mathematics and also serving as a panacea to the observation that the teaching of Mathematics in basically Yoruba language may be hampered due to the lack of resources needed to teach effectively. The researcher has also observed that the insistence of policy makers on the use of English language as medium of instruction in Mathematics classes seem not to have better the lot of the Nigerian learner of Mathematics.

The purpose of the study is to investigate the effects of using mother tongue as supplementary medium of instruction on students' performance in Mathematics. It examined the effect of mother tongue as a supplementary medium of instruction on students' performance in Mathematics Tests. To guide the study, one research question was raised.

a) *Research Question*

Will there be any difference in the performance of students when mother tongue is used as a supplementary medium of instruction in Mathematics?

b) Research Hypotheses

i. There is no significant difference in the performance in the performance mean scores of students in Mathematics in the experimental and control groups before the treatment.

ii. There is no significant difference in the performance mean scores of students in Mathematics in the experimental and control groups before and after the treatment.

iii. There is no significant difference in the performance mean scores of students exposed to Mother tongue as supplementary medium of instruction and those not so exposed.

II. Methodology

The population for this study consisted of 16,741 Junior Secondary School Class I (JSS 1) students in all the 187 public secondary Schools in Ekiti State of Nigeria as at the time of the study (Source: Ekiti State Ministry of Education, Science and Technology).

The sample for the study consisted of 194 Junior Secondary School One (JSS1) students selected from three schools in Ekiti State through multistage sampling technique. The first stage was the use of simple random sampling technique to select three local government areas (LGA) from the 16 LGAs in Ekiti State. The second stage was the use of purposive sampling technique to select one secondary school from each of the selected local government areas. The last stage was the selection of intact classes from each of the schools selected for the study.

A self constructed research instrument was used for the study tagged Mathematics Performance Test (MPT). It consists of two sections A and B. Section A comprises demographic variables such as name of school, class, age, sex and identification number, while section B consists of 40-item objective questions based on the topics in the school syllabus as at the time of the experiment. The instrument was prepared in two languages. (English and Yoruba). To validate the instrument for the study, it was subjected to face, content and construct validity by experts in the field of

Test and Measurements, seasoned Mathematics teachers and Yoruba teachers. The instrument was modified accordingly based on their criticisms and suggestions. The modified version of the instrument was used for data collection. The reliability of the instrument was ascertained using test re-test method of testing reliability. The instruments were administered on 20 Junior Secondary School Class One Students from a secondary school different from the schools selected for the study. The instruments were administered at an interval of two weeks. The set of scores obtained for the instrument were subjected to Pearson's Product Moment Correlation analysis. A reliability coefficient of 0.82 was obtained; this coefficient was considered relatively high enough to be used for the study.

The Experiment covered a period of ten weeks and the experimental procedure was in three stages; pre-treatment stage, treatment stage and post treatment stage. There were two (2) experimental groups and One (1) control group. Experimental group 1 were taught using mother tongue only as the medium of instruction while Experimental group 2 were taught using the mother tongue as supplementary medium of instruction. The control group was taught using the conventional medium of instruction which was English language.

Data collected were analyzed using descriptive statistics such as mean and standard deviation to answer the research question raised, while inferential statistics such as ANOVA and ANCOVA were used to test the research hypotheses.

III. Results

The research question raised was subjected to descriptive analysis.

Question: Will there be any difference in the performance of students when mother tongue is used as supplementary medium of instruction in Mathematics?

In order to answer the question the performance mean scores of students in the experimental and control groups were obtained and compared before and after the experiment. The result is presented in table 1.

Table 1: Students Performance in Mathematics based on the medium of Instruction

Medium of Instruction	N	Pre-Test		Post-test		Mean difference
		Mean	SD	Mean	SD	
Mother Tongue only	50	18.46	5.74	23.34	4.52	4.88
Mother Tongue as supplementary medium	61	18.48	5.44	27.18	4.55	8.7
Conventional Method	83	18.72	3.57	19.61	3.62	0.89

The table revealed that students exposed to mother tongue only medium of instruction had a pre-test performance mean score of 18.46 with standard deviation of 5.74 and a post-test performance mean score of 23.34 with standard deviation of 4.52, with a

mean difference of 4.9. Also, students taught with mother tongue as supplementary medium of instruction had a pre-test performance mean score of 18.48 with standard deviation of 5.44 and a post-test performance mean score of 27.18 with standard deviation of 4.55.

The mean difference of the group was found to be 8.7. Again, students exposed to the conventional medium of teaching had a pre-test mean score of 18.72 and a post-test mean score of 19.61 with a mean difference of 0.89. This implies that using different media of instructions had positive effect on the performance of students in Mathematics. However, the group exposed to mother tongue as supplementary medium of instruction performed best.

Hypothesis 1: There is no significant difference in the performance mean scores of students in Mathematics in the experimental and control groups before the treatment.

To test the hypothesis, the performance mean scores of students in the Pre-test Mathematics Performance test were compared for statistical significance at 0.05level of significance. The result is presented in table 2.

Table 2: Analysis of Variance of the pre-test performance mean scores of students in the experimental and control groups

Source of Variance	Sum of Squares	df	Mean Square	F	Sig
Between Groups	3.081	2	1.540	.066	.936
Within Groups	4434.260	191	23.216		
Total	4437.340	193			

Table 2 shows that $F_{(2,191)} = 0.066$, $p > 0.05$. The null hypothesis is not rejected. This implies that there was no significant difference in the performance of the students in the various groups before the treatment. In other words, the groups were homogeneous at the beginning of the experiment.

Hypothesis 2: There is no significant difference in the performance mean scores of students in Mathematics in the experimental and control groups before and after the treatment.

Mathematics Performance test in the three groups were compared using Analysis of Covariance (ANCOVA) at 0.05 level of significance. The result is presented in Table 3.

Table 3: Analysis of Covariance of the performance mean score of students by treatment

Source	Sum of Squares	Df	Mean Square	F	Sig
Corrected Model	4215.257	3	1405.086	236.814	0.000
Pre-test (Covariate)	2192.574	1	2192.574	369.538	0.000
Groups	2119.949	2	1059.975	*178.649	0.000
Error	1127.325	190	5.933		
Total	107555.000	194			
Corrected Total	5342.582	193			
R Squared = .789 (Adjusted R Squared = .786)					

*p<0.05

Table 3, shows that $F_{(2,190)} = 178.649$, $p < 0.05$. The null hypothesis was therefore rejected. This implies that there was a significant difference between the performance of students in the experimental and the control group. Multiple Classification Analysis was used to determine the effect of the treatment on students' performance in the groups. The result is shown in Table 3.

Table 4: Multiple Classification Analysis (MCA) of Students' performance in Mathematics by treatment.

Grand Mean = 22.95					
Variable + Category	N	Unadjusted Deviation	Eta	Adjusted Deviation	Beta
Control	83	-3.34		-3.44	
Mother Tongue Only	50	0.39	.62	0.47	.63
Mother Tongue as Supplementary medium	61	4.23		4.30	
R				0.888	
R²				0.789	

Table 4 revealed that students exposed to mother tongue as supplementary medium of instruction had the highest adjusted mean score of 27.25 (22.95 +4.30). This is followed by those exposed to mother

tongue medium of instruction only with an adjusted mean score of 23.42 (22.95 + 0.47), while those in the control group had the least adjusted mean score of 19.51(22.95 + (-3.44)). The treatment accounted for 62% (Eta^2 = 0.62) of the observed variance in students' performance and the remaining 38% could be due to errors and other variables.

Hypothesis 3: There is no significant difference in the performance mean scores of students exposed to

Mother tongue as supplementary medium of instruction and those not so exposed.

The performance mean scores of students in the post-test Mathematics Performance test in the three groups were compared using Analysis of Variance (ANOVA) at 0.05 level of significance. The result is presented in Table 4.

Table 5: Analysis of Variance of the post-test performance mean scores of students in the experimental and control groups

	Sum of Squares	Df	Mean Square	F	Sig
Between Groups	2022.683	2	1011.342	*58.184	.000
Within Groups	3319.899	191	17.382		
Total	5342.582	193			

*P < 0.05

Table 5 shows that, $F_{(2,191)}$ =58.184, P<0.05. Therefore, the null hypothesis was rejected. This implies that there was significant difference in the performance of students exposed to mother tongue as

supplementary medium of instruction and those not so exposed. To determine the source of difference among the groups, Scheffe Post-Hoc Analysis was carried out as shown in Table 6.

Table 6: Scheffe Post-Hoc Analysis of students' post-test performance mean scores by treatment.

Treatment	Control	Mother Tongue only	Mother Tongue as supplementary medium	N	Mean
Control		*	*	83	19.61
Mother Tongue only			*	50	23.34
Mother Tongue as Supplementary Medium				61	27.18

Table 6 revealed that, there was significant difference in the performance of students exposed to mother tongue only and those exposed to mother tongue as supplementary medium of instruction. Similarly there was significant difference between the performance of students in the mother tongue only, mother tongue as supplementary medium and the control groups at 0.05 level of significance.

IV. Discussion

The results obtained from the analysis revealed that the groups were homogeneous before intervention. It was further revealed from the result that there exists a positive difference in the post-test performance mean score of students exposed to treatment. The result revealed that students exposed to mother tongue as supplementary medium of instruction had the highest mean difference. This indicates that the performance of students exposed to mother tongue as supplementary medium of instruction improved best.

It was revealed from the results, that the performance mean score of students in the experimental group improved after exposure to treatment. This findings corroborates the findings of Fafunwa (1992) that students taught Mathematics in Yoruba performed

significantly better than their counterparts. It was also in line with the findings of Oginni and Owolabi (2013) and Jovem (2014) who concluded that there was significant difference in the performance of students exposed to the use of mother tongue in Mathematics.

Further analysis, however, revealed that there was significant difference in the performance of students exposed to mother tongue only and those exposed to mother tongue and English language, in favour of those exposed to mother tongue as supplementary medium of instruction. This group performed better than their counterparts in the control group and mother tongue only group. This was similar to the submission of Awofala, Awofala, Nneji and Fatade (2012) who submitted that it was not enough to teach science, technology and Mathematics throughout in English. However, the finding contradicts the findings of Abdu (2011) who concluded that students exposed to mother tongue medium of instruction only performed better than those exposed to mixed languages(Hausa and English). The reason for the difference in the findings of the two studies may be due to the fact that both studies were carried out in different ethnic localities (Yoruba and Hausa).

V. Conclusion and Recommendation

The study examined the effects of mother tongue as supplementary medium of instruction on junior secondary schools students' performance in mathematics. The results revealed that mother tongue as supplementary medium of instruction improved the performance of students in mathematics to a large extent. Based on the findings of the study, it was concluded that both "mother tongue only" and "mother tongue as supplementary medium" of instructions were effective media of instruction for the teaching of Mathematics. However, the use of mother tongue as supplementary medium of instruction improved the performance of students in Mathematics to a large extent and thus was adjudge the best. It was therefore recommended that Mathematics teacher should be more flexible and proactive in their choice of medium of instruction during classroom interactions rather than sticking to media of instruction that will not be productive to learners. Mathematics teachers should also make use of mother tongue as supplementary medium of instruction in Mathematics classroom to enhance the performance of their students in the subject.

VI. Suggestion for Further Studies

This study examined the effect of Yoruba (mother tongue) as supplementary medium of instruction on junior secondary school students' learning outcomes in Mathematics. The study should be carried out in other Nigerian local languages in the country.

The study could also include other variables (like school location and others) that are not considered in this study.

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Reflections About Decolonial Pedagogy as an Epistemic Rupture for the Teaching of Racial Ethnic Relations

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Abstract- The need to break with the monoculture of an epistemology of knowledge produced and transmitted within the Brazilian educational environment requires the urgency of an epistemic rupture that is dominant and has colonial bases. Based on this, this article proposes a change in practices based on an epistemic rupture with decoloniality as the educational principle to be addressed and incorporated in Brazilian education to overcome inequalities, elucidating the need for and importance of this paradigm for the teaching of race-ethnic relations for the valorization of African history and culture. For this, this article at first deduces how the coloniality/modernity was established to invalidate all knowledge not belonging to Europe, advancing to the importance of educational policies aimed at education for ethno-racial relations exposing a criticism of the production of knowledge in the university, leading to the notes towards the construction of a decolonial pedagogy based on transgression, freedom, and criticality.

Keywords: coloniality/modernity; epistemology; decoloniality; education; freedom.

GJHSS-G Classification: FOR: 1303

Strictly as per the compliance and regulations of:

Reflections About Decolonial Pedagogy as an Epistemic Rupture for the Teaching of Racial Ethnic Relations

Raimundo Sousa Magalhães [α] & Josenildo Campos Brussio [σ]

Resumo- A necessidade de romper com a monocultura de uma epistemologia do saber produzido e transmitido dentro do ambiente educacional brasileiro exige a urgência de uma ruptura epistêmica que é dominante e tem bases coloniais. Referente a isso, o presente artigo propõe uma reflexão sobre a Educação a partir de uma ruptura epistêmica, tendo como base a decolonialidade como princípio educacional a ser abordado e incorporado na educação brasileira para a superação das desigualdades, elucidando a necessidade e importância desse paradigma para o ensino das relações étnico-raciais e a valorização da história e cultura africana. Para isso, aduz-se, a princípio, como a colonialidade/ modernidade se estabeleceu para invalidar todos os conhecimentos não pertencentes à Europa. Em contrapartida, a Decolonialidade propõe a importância de políticas educacionais voltadas à educação para as relações étnico-raciais, expondo uma crítica à produção de conhecimentos na universidade, em direção à construção de uma pedagogia decolonial baseada na transgressão, liberdade e criticidade epistemológica. Para a concretização do trabalho, realizamos a pesquisa bibliográfica de caráter analítico-descritivo, dispondo de artigos científicos, periódicos e livros de ilustres pensadores como: Gonzales (1984); Mignolo (2017a, 2017b); Torres (2007); Grosfoguel (2008); hooks (2013); Freire (1987, 1999, 2022a, 2022b) entre outros. Para esse fim, concluímos que a perspectiva decolonial é verdadeiramente uma opção global para uma ruptura epistêmica ao propor pela prática em ações educativas, a valorização e anunciação do continente e povo africano como essencial para construção de uma pedagogia de reconhecimento e emancipação dos povos.

Palavras-chave: colonialidade/modernidade; epistemologia; decolonialidade; educação; liberdade.

Abstract- The need to break with the monoculture of an epistemology of knowledge produced and transmitted within the Brazilian educational environment requires the urgency of an epistemic rupture that is dominant and has colonial bases. Based on this, this article proposes a change in practices based on an epistemic rupture with decoloniality as the educational principle to be addressed and incorporated in Brazilian education to overcome inequalities, elucidating the need for and importance of this paradigm for the teaching of race-ethnic relations for the valorization of African history and culture. For this, this article at first deduces how the coloniality / modernity was established to invalidate all knowledge not belonging to Europe, advancing to the importance of educational policies aimed at education for ethno-racial relations exposing a criticism of the production of knowledge in the university, leading to the notes towards the construction of a decolonial pedagogy based on transgression, freedom, and criticality. In order to carry out this work, we carried out bibliographical research of an analytical-descriptive nature, using scientific articles, journals, and books by distinguished thinkers such as Gonzales (1984); Mignolo (2017a, 2017b); Torres (2007); Grosfoguel (2008); Hooks (2013); Freire (1987, 1999, 2022a, 2022b), and others. To this end, we conclude that the decolonial perspective is truly a global option for an epistemic rupture by proposing through practice in educational actions the valorization and annunciation of the African continent and people as essential for the construction of a pedagogy of recognition and emancipation of peoples.

Keywords: coloniality/modernity; epistemology; decoloniality; education; freedom.

I. Introduction

According to Ballestrin (2013) a group of scholars composed of Latin Americans such as Walter Mignolo (2017a, 2017b); Aníbal Quijano (2009); Catherine Walsh (2013); Nelson Maldonado-Torres (2007); Boaventura de Sousa Santos (2009); Ramón Grosfoguel (2008), among others, were responsible for studies in various and related areas of social sciences in Latin American and US universities. They made an epistemological shift and a very important movement for the critical renewal of intellectual centres at the beginning of the 21st century, mainly in Andean universities, known as the Modernity/Coloniality group. This group was structured through debates, seminars, dialogues and publications to think about the structure that established the oppression and decimation of entire civilizations in the name of power.

In this sense, the emergence of decoloniality stems from these ideas and emerges as a counterpart to the colonial pretensions that were established within society, above all, to subaltern civilizations and oppressed by the European colonizer. Thus, decoloniality is a denunciation option that established theories, concepts, practices and categories in the development of an epistemology of overcoming, because, at the beginning of the 21st century, the need arises to have conceptualizations and paradigms to think about the postcolonial structure in the Latin America and the Caribbean.

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In this way, the decolonial paradigm emerges as an option to decolonize what has been colonized (Mignolo, 2017b). To think from this idea is to establish an effort capable of understanding, through the analysis of subordinate subjects, the place of production and reproduction of knowledge that was denied for centuries. The goal of decoloniality is not to highlight existing epistemologies, but to be the overcoming option, which clarifies, thinks and acts for a future of global appreciation in which a single option of speeches and responses can no longer be accepted as an affirmation of peoples' domination.

The logic of coloniality/modernity must be overcome by the decolonial movement of resistance to the fallacy of capitalist progress, reallocating discourses and making black people subjects of theoretical and practical production that announce directions to overcome this cruel perspective of erasure and suppression of epistemologies locations (Mignolo, 2017a). Decoloniality proposes to educators, students and the school the place of debates for an epistemic validation and reaffirmation of rights when it makes the oppressed aware as agents of construction of history.

As a result of this, one must seek decolonization, seeking this is essential, as it never goes unnoticed. When this process is in practice, it reaches the being entirely, modifying them into privileged and new beings, such as a language and a new humanity, to decolonize is to create a new man (Fanon, 1968).

In this way, the present work starts from the following question: How to promote an epistemological rupture in education through a decolonial pedagogy for the teaching of ethnic-racial relations? Since the epistemological construction of the African continent has colonial roots of epistemic nullity based on prejudice, not opening space for criticality and for the practice of a liberating pedagogy.

Based on this and for understanding, the first section of this text approaches Europe as an enunciative locus of an epistemology considered universal, one and superior to all others existing in the world, especially the African one, evidencing the historical disaster of the discourse of modernity as extermination and concealment of African epistemes, especially in the Americas.

In the following section, a brief reflection is carried out on the advances of educational public policies in Brazil in relation to the teaching of ethnic-racial relations in basic education, in particular, the implementation of Law 10.639/03 (amended by Law 11.645/08). We also highlight the need for advances in research for the epistemic rupture with a focus on the university, making it possible to reflect on the challenges posed in contemporary times.

Finally, the last section brings approaches to the need to build a decolonial pedagogical practice for teaching ethnic-racial relations, proposing an epistemic rupture in education based on this new paradigm, based on two decolonial pedagogical proposals: the proposal of bell hooks (2013) and Paulo Freire's proposal (2022b).

II. Eurocentrism and the Hidden Side of Modernity

Any man in his cognitive fullness in contemporary times is capable of conceiving at first an adjective to a black person if asked. Unfortunately, most adjectives would refer to negative ideas, of inferiority, subordination, because they are always the "other", and therefore, they are the "irrational, magical, illogical, uncivilized, primitive, backward, illegitimate, undisciplined, childish, parochial, passive, apathetic, imitative and black" (Ani, 1994, p. 287 - 288).

With that, it would cause the researcher a certain strangeness if such an adjective were conceived in a positive and more humane way to the black, since, in the Brazilian society built through the exploitation, commercialization and genocide of the black people, a nefarious history of prejudice was produced and citizen denial, for centuries.

Such an observation is a perverse imagery construction that falls on the black population due to the burden of melanin (this one, yes, biology explains). The author Lélia Gonzales (1984) shows that black people are in the garbage can of Brazilian society, and that racism is part of a "natural" condition. On this occasion, for her, with her ironic criticism, a being conceived as irresponsible, with low cognitive abilities, it is natural to remain on the margins of society, and consequently a marginal person is persecuted by the police for not liking to work, thus, if he "does not work, he's a rascal and if he's a rascal, he's a thief. So, he has to be arrested, naturally" (Gonzalez, 1984, p. 226).

Lélia Gonzales' thought is a reinforcement of a Brazilian historiographical knowledge founded by whites and for whites. The Brazilian economic, cultural, political and social structure was usurped for the benefit of a dominating and minority elite of European origin, which implemented anachronistic thinking that is vigorous today in relation to black people, like this:

Black women, naturally, are cooks, cleaners, servants, bus changers or prostitutes. It is enough for us to read the newspaper, listen to the radio and watch television. They don't want anything. So there's more to it than being favelados. Racism? In Brazil? Who said it? That's an American thing. Here there is no difference because everyone is Brazilian above all, thank God. Blacks here are treated well, they have the same rights as we do. So much so that, when he makes an effort, he rises in life like anyone else. I know one who is a doctor; extremely polite, cultured, elegant and with such fine features... He doesn't even look black (Gonzalez, 1984, p. 226).

In relation to this, the black population and the African universe are objectified, not having spaces for

creations and recreations, they are recognized for everything that Europeans abhor and do not want to be, that is, the European image of Africans forms a set of worthless things, attributed negative characteristics that without these produced ideas could never help to maintain a "positive" image of what it means to be European (Ani, 1994).

In this way, for the European to achieve his title of "positive" image, it was not necessary much effort before societies, since the atrocious and dehumanizing performance of the colonization of African peoples produced in itself a nullity (denialism) and cruel devastation of all non-European epistemologies. Being able to understand that:

> European patriarchy and European notions of sexuality, epistemology and spirituality were exported to the rest of the world through colonial expansion and transformed into the hegemonic criteria that were to racialize, classify and pathologize the rest of the world's population according to a hierarchy of superior and inferior races (Santos, 2009, p. 392).

For this to happen, the notion of modernity was linked to coloniality, and the notion of the modern emerges to operate from strictly abyssal lines that divide what is part of the human world, and those that are part of the underworld, thus, for the notion of modernity those who are on the other side of the line, will not be a human in its entirety (Santos, 2009).

According to Mignolo (2017a) the concept of modernity is a universalizing narrative of Western civilization. The creation of this concept is a fiction that justifies all the epistemic, cultural, political, social, economic dissolution of subaltern civilizations in the face of Eurocentrism.

So, the fallacy of coloniality/modernity was a condition sine qua in which not only formed Europe, but which established its own permanence and maintenance from the perspective of power within societies, these power patterns, which were diluted in the observances of what the "others" would be, not restricting itself only to social, economic and cultural control, also involving itself in the control of the state and other institutions, having its apogee in the control of the production of knowledge (Bernardino-Costa and Grosfoguel, 2016).

Modernity, being a product of the enunciation of the colonization of peoples by the European, made subordinate knowledge excluded, mitigated, silenced, omitted and ignored, adding all cultural prejudices forming latent structures of current inequalities. Therefore, modernity according to the scholar Maldonado Torres:

> It would be said that modernity implies the colonization of time by the European, that is, the creation of historical stages that led to the advent of modernity on European soil [..] the concept of modernity is to hide, in an ingenious way, the importance that spatiality has for the production of this

discourse [...] those who adopt the discourse of modernity tend to adopt a universalist perspective that eliminates the importance of geopolitical location (Torres, 2008 p. 84).

In this regard, it is urgent to break with an epistemology that does not consider the plurality of knowledge coming from the rest of the world, especially from the African continent, where Western sciences managed for centuries to produce myths about an invalid knowledge, which was hidden from enunciations and announcements of epistemic places from geopolitics structured in the bowels of colonial power (Mignolo, 2017a).

In this way, the insurgent epistemologies for overcoming the European narratives on the African continent must redefine the rhetoric, creating emancipations from the subaltern itself, that is, from the side of the oppressed, so that in this way knowledge must depart towards a struggle in toward epistemic liberation (Mignolo, 2017b).

With this conjuncture, the black epistemes over the centuries were wasted, which is still reflected today, as the quotes above from the black sociologist Lélia Gonzales have shown. It is necessary to value the epistemological, cultural and political diversity of the African continent, estimating the importance of local and contextual experiences for the creation of a new global paradigm that is decoloniality as a perspective for overcoming the Western understanding of what it means to be modern and overcome stereotypes, and prejudices against blacks, mainly, to be disseminated in education.

III. Twenty Years of Law 10,639/2003: How are We?

In March 2003, Law 10.639/2003 was sanctioned by the President of the Federative Republic of Brazil, Luís Inácio *Lula* da Silva. This normative instrument instituted, in Brazil, the obligatory and transversal teaching of Afro-Brazilian History and Culture in public and private schools.

Consequently, in June 2004, Law 10.639/03 was regulated by the National Council of Education (CNE), representing a gigantic step towards the formation of a public policy of affirmative actions of historical reparation to the black community, to Afro-Brazilians and to the black movement committed to seeking solutions to repair the damage caused by the slave regime (Brasil, 2004).

In view of this, the National Council of Education (CNE-BRASIL) established in resolution No. 1, of June 17, 2004:

> Art. 1 This resolution institutes National Curriculum Guidelines for the Education of Ethnic-Racial Relations and for the Teaching of Afro-Brazilian and African History and Culture, to be observed by educational institutions, which operate at the levels of modalities of Brazilian Education, in

especially by institutions that develop programs for initial and continuing teacher education.

Art. 2nd The National Curriculum Guidelines for the Education of Ethnic-Racial Relations and for the Teaching of Afro-Brazilian and African History and Culture consist of guidelines, principles and fundamentals for the planning, execution and evaluation of Education, and have as their goal, to promote the education of active and conscious citizens within the multicultural and multiethnic society of Brazil, seeking positive ethnic-social relations, towards the construction of a democratic nation.

§ 1 The Education of Ethnic-Racial Relations aims to disseminate and produce knowledge, as well as attitudes, postures and values that educate citizens about ethnic-racial plurality, making them capable of interacting and negotiating common goals that ensure that everyone respects legal rights and values their identity, in the pursuit of consolidating Brazilian democracy (Brasil, 2004, p.31)

§ 2 The Teaching of Afro-Brazilian and African History and Culture aims at recognizing and valuing the identity, history and culture of Afro-Brazilians, as well as guaranteeing recognition and equal appreciation of the African roots of the Brazilian nation, alongside of indigenous, European, Asian (Brasil, 2004, p.31)

§ 3 It will be up to the Education Councils of the States, the Federal District and the Municipalities to develop the National Curriculum Guidelines established by this Resolution, within the collaboration regime and the autonomy of federative entities and their respective systems (Brasil, 2004, p.31)

The regulation of Law 10.639/03 made possible significant advances towards a historical reparation of the Afro-Brazilian community, since it established the recognition, appreciation and affirmation of rights, not only with regard to education. For the Black Movement it is bigger than that, this instrument is a support that the Brazilian State sympathizes with the secular struggles and claims for a retraction of those who raised a Brazil on its back, literally, behold, the reward of the state appeared.

Changing the status quo was a necessity, based on the insurgent reflections of academic literature at the beginning of the 21st century, with the paths of Brazilian construction for a national identity written and announced from the whites and for the whites. Thus: "It is worth asking again: how did we get to this situation, with abolition and everything on top of that? The person who answers us is a very important white man (because he is a social scientist, wow) called Caio Prado Junior" (Gonzalez, 1994, p. 231). Only with the criticism and mobilization of the black movement did it become necessary to try to rewrite the history of the Afro-Brazilian people, and this law is the result of such mobilization (Oliveira and Candau, 2010).

This achievement was a milestone in the history of Brazilian education in terms of public policies to repair the damage left by colonization to the entire Afro-Brazilian population and is a reason for pride and acclaim by all. However, the consent of the Brazilian state is paramount, when compared to more than four hundred years of denial of rights, a legal instrument is still insufficient to deconstruct centuries of a tragedy.

For this, it is urgent to apply what Boaventura de Sousa Santos (2009) calls subaltern cosmopolitanism, where all those who have suffered and been victims of violence, intolerance and discrimination need a human community around them, all those who have had their rights denied and were affected in their human dignity need citizenship [...] (Santos, 2009).

In Brazil, according to Dagnino (2004), political projects for the construction of a nation take on new roles when popular participation, civil society, citizenship and democracy are responsible for articulating the precepts of the game for the reformulation of practices as enunciative locus.

From this perspective, discussing affirmative action public policies is a step towards fighting any monoculture of knowledge, not only in the theoretical field, but starting from concomitant practices between those who speak, write and attest and those who objectively need it at the end of the process.

It is necessary, in the production of public policies for black people, that the knowledge and research carried out privilege partnerships with different social movements and their intersectionalities, providing advances and trends that go beyond the hegemonic culture in the field of research in social and human sciences as well as in formulation of affirmative action policies (Gomes, 2010).

Thus, in March of this year, Law 10.639/2003 celebrates exactly 20 years since it came into force, the advances of this incorporation in basic education were significant regarding multicultural and pluricultural dialogue at school. "This legislation paves the way for the construction of an anti-racist education that entails an epistemological and curricular rupture, insofar as it makes public and legitimate the "talk" about the Afro-Brazilian and African issue." (Gomes, 2012, p. 105)

Nowadays, "talking" about it still causes discomfort in a part of society that does not let go or tries to let go of prejudices and racism. The production of knowledge and the "talking" about issues involving the ethnic-racial, sometimes, is silenced or there is a discrepancy in the epistemic production within the knowledge production environments that do not privilege to discuss themes judged as subordinate.

If we critically examine the university's traditional role in seeking truth and sharing knowledge and information, it will become sadly clear that the biases that sustain and maintain white supremacy, imperialism, sexism, and racism have so distorted education. that it is no longer a practice of freedom (hooks, 2013, p. 45)

The central issue in the production of knowledge within universities is to break with the

dominant Eurocentric epistemologies and move forward to seek reparation for the damage left by epistemicide.

According to Boaventura de Sousa and Santos (2019), epistemicide can be considered the discredit, suppression and death of social practices of different cultures in the production of local knowledge in the face of European knowledge. Based on this terminology and concept of Boaventura, several thinkers-built foundations around this thought, however, epistemicide as murder and erasure of the production of knowledge on the African continent (Njeri; Aziza, 2020, p. 3) is what arises for discussion in this article. Thinking about epistemicide as a concept and analytical category is to turn to the dominant European who disregarded all types of manifestations on the African continent, above all, the production of knowledge, since, after all, he was considered a non-being, "in the European tradition terms like 'man', 'humanity', 'human gender' connote 'European' and evoke self-image in the minds of Europeans" (Ani, 1994, p. 226).

In this way, Moraes and Silva Rosa (2020) consider epistemicide as responsible for erasing and murdering African knowledge, its practice extinguished the epistemologies and contributions of black civilizations in the construction of human history, in the same way that, for Carneiro (2005), the maximum expression of this annihilation was the annulment of knowledge and all processes of censorship and condemnation of an epistemology before the "other". In this case, the epistemologies produced by blacks were invalidated and corrupted for centuries and this is also reflected, in particular, in the production of knowledge within universities.

Regarding this, Kilomba (2020) already warned that knowledge, erudition and science are intrinsic parts and that they are associated with power and racial authority, asking us and making us reflect on the following questions:

> [...] What kind of knowledge, isn't it? What knowledge has been part of academic agendas? Who is recognized as someone who has knowledge? and who, isn't it? Who can teach knowledge? and who can't? Who is at the centre? and who remains outside, on the margins? (KILOMBA, 2020, p. 50).

Universities as knowledge production centres are not a neutral space, in fact, science is not neutral. Academic centres are white spaces, where the right to oratory from the pulpit, that is, the privileged place of speech, has been denied to people of colour for centuries (KILOMBA, 2020).

As a way of exemplifying a little the contributions of Grada Kilomba, referring to the objectives of the work, I present an excerpt on the production of academic works carried out and published about ethnic-racial relations.

In a survey carried out by Coelho (2018), between the years 2003 to 2014, 52 articles, 8 theses and 22 defended dissertations were found, which in some way brought approaches to ethnic-racial relations. The highest incidence of publications occurred only in 2013, approximately a decade after the enactment of Law 10,639/2003. The researcher also points out that in the years 2003 to 2005 there is a lack of publications in journals that bring approaches to this theme.

Based on this, the production of academic works within universities for this perspective should and has the prospect of increasing, however, it demonstrates that published academic works can be considerably few, since it is an analysis of ten years, shortly after the enactment of the Law.

In the same perspective, and with the objective of collecting data on the amount of research and publications of thesis and dissertations carried out by graduates, with the Federal University of Maranhão (FUMA)/Brasil(UFMA) as a focus, a search was carried out in the Brazilian Digital Library of Thesis and Dissertations (BDTD) with the following terms "Law 10.639/2003" and "Ethnic-Racial Relations" and, respectively, 9 works were found, 8 dissertations and only 1 doctoral thesis.

Table 1: Theme, author and year of defense of works carried out by FUMA graduates found in the BDTD database when searched for "Law 10.639/2003".

Theme	Author	Defense
Following in the footsteps of the griots: orality as a methodological tool for teaching Afro-Brazilian and African history and culture to children in the Basic Education Unit (UEB) Tancredo Neves - ISEMA CAMPOS.	CAMPOS, Luanda Martins	2022
CONTEMPORARY AFRO-DESCENDANT VISUAL ARTS: the teaching-learning of art and Law Nº 10.639/2003 in educational spaces.	SILVA, Andréa Luisa Frazão	2018
Black identity in the school context: a study at the Darcy Ribeiro Basic Education Unit	SANTOS, Clenia de Jesus Pereira dos	2018

CRIOULA DRUM AS A REQUIREMENT FOR THE IMPLEMENTATION OF LAW 10.639/2003: a case study in the Basic Education Unit Professora Rosália Freire	FREITAS, Marcos Aurelio dos Santos	2021
Representations of the black population in the History, Society and Citizenship collection, for higher fundamental education (2017 - 2019)	LIMA, Ivã Dutra	2020

Source: Magalhães, 2023.

Table 2: Theme, author and year of defense of works carried out by UFMA graduates found in the BDTD database when searched for "Ethnic-Racial Relations".

Theme	Author	Defense
Identitarian paths and education of ethnic-racial relations in the Quilombo Rampa/MA	ABREU, Larissa Silva	2022
Particularities of the black issue in Brazil and its consequences in the focused interpretations and policies of race and class	DURANS, Claudicéa Alves	2019
Africa in us: ubuntu knowledge in initial teacher training in the Pedagogy course (UFMA/ Campus Codó)	SOUSA, Soraia Lima Ribeiro	2022
The Afro-Brazilian cultural heritage in early childhood education: the inclusion of Law nº 10.639/03 in the educational practices of basic education units in the central region of São Luís - MA	CAMPOS, Rayra Chrystina Veiga	2018

Source: Magalhães, 2023.

When performing the search on the BDTD website for "Ethnic-Racial Relations" filtered by the Federal University of Maranhão institution, 6 results are shown, however, in table 2 there are 4, since they were the same works that contemplated the search for the filter "Law. 10,639/2003".

The tables presented in this research, even with an excerpt, are examples that after 20 years of operation of Law 10.639/2003, in Brazil, there are still few theses and dissertations published on the portal, coming from students of the FUMA.

Only from 2018 research and strictu sensu publications focused on this thematic area were published. In view of this, what is evident is that there is little research carried out in this thematic area, considering this, based on the results found by the BDTD, nevertheless, it is important to take into account that the Federal University of Maranhão works for advances.

To discuss the production of knowledge for the conception of an African history and culture is to propagate all the nuances that involve the black person, to seek this is to insert this epistemological discussion within the universities involving different actors that elevate the debates and, consequently, it is from this and This is why the need for a starting point arises, that is, universities are those points that interconnect advances in search of new knowledge that formalize a break with hegemonic thoughts.

The expectation for advances in public policies in relation to ethnic-racial issues seems to find a "light at the end of the tunnel" with the return of President Luís Inácio *Lula* da Silva, in 2023 to the Presidency of the Republic of Brazil, the year in which the Law 10,639/03 will complete 20 years of enactment. Now, in the first month of government, the Ministry of Racial Equality was created, also entering into force Law n° 14.532/23 that equates the crime of racial injury to the crime of racism. These advances are sources of further discussions; however, it is important to recognize the importance of all these acts that intersect in the search for an education to overcome social and ethnic-racial inequalities in Brazil.

IV. For a Decolonial Pedagogy for Teaching Ethnic-Racial Relations

The starting point for thinking about decolonial practices is to understand all the oppressive and violent aspects of colonization and its ramifications within a society. Understanding coloniality/modernity requires repulsing these ideas and creating a new paradigm of overcoming what Njeri (2019) calls the "metaphor of genocide", a monster with tentacles aiming and hitting the black body with the aim of destroying it. it in all its aspects, be it physical, psychological, epistemological and also spiritual:

Each tentacle is responsible for an area of genocide, from (nutricide, epistemicide) religious racism, incarceration, ultraviolence to the physical death of the entire black population, without exception or clippings. No matter the specificity of this black body, the monster of genocide is

sophisticated enough to adapt to it and use it as a means of death (Njeri, 2019, p. 7).

The monster with tentacles that Aza Njeri refers to is a project of genocide of the African and Afro-Brazilian population caused by the imperialist designs of colonization and the very idea of coloniality/modernity, above all, the genocide perpetrated in education and in the modes of knowledge production of this community that have been and are questioned to this day.

For Gomes (2012) the change of actions and perspectives must be activated when the radical nature of these issues is understood. Only then will we be able to change the record and all the paradigms of knowledge with which educators work in education, that is, for the author this is the initial action to promote an epistemological and cultural rupture.

For this rupture, decoloniality emerges as a model of a global paradigm for overcoming the disasters caused and left by coloniality. The emergence of this new paradigm does not come from the idea of progress or destruction of existing epistemologies, what is presented is the need to detach from these, understanding detachment as non-acceptance and epistemic disobedience: "decoloniality is a life option, to think, to do, is not a state option but a global policy" (Mignolo, 2017b, p. 31).

In this way, decoloniality is not and has never been a paradigm that consists of a universal model of knowledge that presents itself as the true one, and that surpasses and despises all previously existing ones, it is essential to understand that decoloniality is configured in another option (Mignolo, 2017a).

The decolonial project as an option for overcoming inequalities starts from the frontier and returns to the frontier with all forms and creations of knowledge in the name of a global policy of valuing the being that for centuries was a non-being, and in the condition of not being, it became a genuine diasporic product. Returning to the frontier from decoloniality goes beyond understanding the African subject from a geopolitical location, while it is geopolitics that makes possible the decolonial discussion about the importance of Afrocentricity (Asante, 2016), that is, understanding its purpose emerges in the recognition of this population in the production of knowledge:

> By re-centralizing the African person as an agent, Afrocentricity forces European hegemony to unleash its power to situate Africans as marginal. Thus, Afrocentricity becomes a critique of domination that denies the power of cultural hegemony. It insists that African communication, behaviour and attitudes must be examined within the context of African culture, not as part of the European enterprise (Asante, 2016, p. 16).

Thus, examining Africa and Africans from their context and their own culture is to put decoloniality into practice across the border. And understanding their function within the decolonial project, we realize that

borders are not reduced to spaces that create/re-create differences but are integral parts of an enunciative locus that is based on which knowledge is formed, cosmovisions that depart from the experiences of subaltern subjects. On this occasion, the need for a connection between place and knowledge is implicit.

In this way, the knowledge that comes from the borders, understood as a result of the decolonial project, redirects the rhetoric from the cosmologies of the oppressed who are located on the subaltern side towards a struggle for epistemic liberation to the detriment of a world capable of overcoming the core of the Eurocentric knowledge. It has to be understood that there must be a displacement of the enunciative locus, taken from the European man to the African women of Angola, for example (Grosfoguel, 2008).

Regarding this, education is an original and essential instrument for the practice of an epistemic rupture through decoloniality. Regarding this point, there are several pedagogical proposals for a decolonial education in practice, among which the pedagogy of Paulo Freire stands out, based on "The damned from the earth" (1968) by Frantz Fanon and which influenced generations of new pedagogues such as bell hooks (2013) and Catherine Walsh (2017).

For Freire, education has its functionality in making the oppressed aware of the processes suffered from dehumanization, and by learning this, they also get to know the world of oppression they have suffered and suffer, and from that they are committing themselves to its transformation (Freire, 1987).

An education for an epistemic rupture must start from man's awareness of the processes of oppression triggered by coloniality:

> An education that enables man to courageously discuss his problems. That he warned him of the dangers of his time, so that, aware of them, he gained the strength and courage to fight, instead of being led and dragged to the perdition of his own "I". Submitted to the prescriptions of others. The education that placed in constant dialogue with the other [...] (FREIRE, 1967, p. 90).

The need for a decolonial education to break with hegemonic knowledge has as its principle the awareness of the oppressed class, from this point onwards the elevation of the African subject in the face of the problems of his time and space (Fanon, 2008). A decolonial education frees and forms critical citizens through a transitivity conceived as naive, a priori, but which becomes critical the moment the educational practice itself is found in the subject as an action of liberation.

Having said that, decolonial education is not restricted to teaching and the transmission of knowledge as limited fields of school spaces. According to Catherine Walsh (2013), decolonial pedagogy should seek to open gaps, instigate learning, unlearn and relearn. This pedagogy revitalizes the reason for its

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emergence when it plants seeds and does not institute dogmas or doctrines, "clarify and tangle paths, and advance horizons of theorizing, thinking, being, being, feeling, looking and listening [...] (Walsh, 2013, p. 66, 67).

The decolonial pedagogy propose the production of knowledge that transforms reality, and it is in this context that its perspectives and needs are met, it is about amplifying the focus of the canons to recognize the "different". This pedagogy is not only about recognizing the need for an option that combats coloniality, but also based on the investigation and practice of new approaches and relationships for the radical reconstruction of being, power and knowledge (Oliveira e Candau, 2010).

Based on this, rebuilding the being, power and knowledge demands the collective appeal for this renewal, understanding that this process requires changing practices and postures that rejuvenate teaching, is asking everyone to open their conscience and heart to a new claim that transforms thinking, to rethink the creation of a new vision that is teaching as transgression (hooks, 2013).

To transgress is to go to the decolonial encounter, everyone who is in the field of educational action is called to change and renew our mentality to modify the precepts of educational institutions, teaching about knowledge that values diversity, plurality and multiculturalism make working even more pleasurable and joyful, and this propels us towards the pursuit of a passion for social and epistemological justice that turns into a love of freedom (hooks, 2013).

Therefore, the search for a libertarian education along decolonial lines must leave aside "banking" teaching actions that do not raise criticality, since institutions value institutionalized education more than education for the world:

> "We dictate ideas. We don't exchange ideas. We talk classes. We do not debate classes or discuss topics. We work on the learner. We don't work with him. We impose an order to which he does not adhere but accommodates himself. We don't provide him with the means to think authentically, because when he receives the formulas we give him, he simply keeps them. He does not incorporate them because incorporation is the result of the search for something he demands, from those who try it, an effort to recreate and seek. It requires reinvention (Freire, 1987, p. 97).

Decolonial pedagogy proposes to make a dialogic opening to build bridges through criticism, proposing a teaching for valuing differences and the struggle for a more just, equalitarian and democratic society that values its men from the epistemologies and local knowledge. In this perspective, the educator who finds the location as a starting point for a teaching that values differences are no longer just the one who educates, but the one who, while educating, is educated

through exchange and mutual dialogue with the student, and this, at the same time, being educated also becomes capable of educating (Freire, 2022a).

The challenges for a decolonial and counter-hegemonic education in Brazilian education are gigantic, however, it is possible to innovate and renew through an education for decolonial diversity that frees the chains suffered from the colonial bases. A decolonial education is done by instigating freedom, beings free to think are responsible for transforming reality, the more stimulus to problematize beings from the world to the world, and the more the challenges, the more apt they are to answer for them (Freire, 2022b).

Thus, there must be a courageous education that brings debates from the problems and experiences of the students' time and space, raising them to the knowledge and practices of new attitudes and postures in the face of the challenges posed in contemporary times (Freire, 1987).

That said, a turn towards an education that proposed to be contrary to colonial precepts, is found in the recognition of an education for freedom, the subject, the very principle of knowledge, with the objective of reconfiguration of epistemologies for overcoming prejudice, inequalities and all forms of discrimination against so-called "minorities" in all social spaces, especially in educational environments. Decoloniality proposes this decolonial turn that precisely starts with changing attitudes and practices within pedagogical action, "a project of systematic and global transformation of assumptions and implications of modernity by a variety of subjects in dialogue" (Maldonado-Torres, 2007, p. 160).

According to Arroyo (2017), highlighting the situation of oppression of the oppressed, represented here by African subjects, a revitalizing pedagogy is found in the pedagogical practice itself, since, discussing with the subjects is proposing teaching actions that exalt the processes and movements that they allude to culture, the social, and other local perspectives that correspond to the recognition of the "other" as a social being that produces and transfers knowledge to the global.

An epistemic rupture is made of actions. An option, an idea, a theory that proposes changes already exists, even if it relates to the sociology of emergence by revealing itself at times, "dispersed, embryonic and fragmented, pointing to new constellations of meanings [...] to transformation of the world [...] (Santos, 2019, p. 42).

To the detriment of this, the educator must be committed to awakening and making his students responsible beings capable of understanding differences as an integral part of a society, understanding the "other" as forms of mutual representations of learning is a challenge for all who are involved. offer to teach.

These practices are only possible when mobilizations and discussions on these themes are carried out in the classroom or in spaces that go beyond this environment through criticism: "Education is an act of love, therefore, an act of courage. You cannot fear the debate. The analysis of reality. It cannot escape creative discussion, under penalty of being a farce" (Freire, 1999, p. 97).

Decolonial pedagogy is revolutionary and has become an instrument to be approached by educators with the aim of transgressing knowledge and breaking with the objectifications of black people. The teacher who educates and is educated by his students must start from this pedagogy, an engaged pedagogy that is responsible for generating enthusiasm in students, pointing out ways for an epistemological rupture towards emancipation.

V. Final Considerations

Thinking about a decolonial pedagogical practice that modulates and revitalizes the entire educational process is not an easy task, understanding this is essential so that there are no frustrations along the way, not only on the part of educators, but on the part of the entire school community and committed population in accepting this paradigm as a real and concrete option for overcoming a tyrannical project that is linked to various forms of violence and violation of rights, ideas and freedoms.

It is urgent that decoloniality as a model and option to be followed has the primary duty of providing an enunciative locus centring black culture, seeking discussions and problematizations through scientific productions within the academies to reach schools, but that it is understandable, that the productions Academics must point out, problematize, agree, infer, propose what generates debates.

Discussions must go beyond physical environments, materializing through daily practice for a problematizing education that becomes liberating for students, a pedagogy that is encouraged serves the principle of liberation, ending in creativity and in stimulating actions truly engaged in the search for overcoming from a failed and oppressive epistemology to one that welcomes, protects and values plurality through an epistemic rupture through decoloniality.

An epistemological rupture materializes through the understanding that all African cultural manifestations are intimately within us, even those that are dormant are able to demonstrate the strength of their identity and ancestry.

Decolonial practice reaches refinement when it awakens and makes students aware that the values of the African continent are part of us in our daily lives, whether in the habit of asking our parents and elders for blessings, in the herbal knowledge of plants and herbs, in the conversations and demonstrations in the circle, in the grouping and squatting of houses in backyards and yards, in the nobility of women traders and in the resistance to keep ourselves alive, all of this must be transmitted within educational environments through pedagogical practice.

Thus, we must remain hopeful that the structural roots of imperialism, coloniality/modernity are gradually destroyed, until all the remnants left by them in the formation of Brazilian society, especially in education, disappear.

For this, the seeds are being planted, with effective public policies, such as the one addressed in the related work that is Law 10.639/2003 and Law No. 14.532/23. After 20 years, this instrument (Law 10.639/03) has already borne fruit, but it deserves improvement and strengthening to reach the ideal. Is there an ideal? I hope this is not a rhetorical or utopian question. Borrowing the brilliant words of Paulo Freire (1999) who said that hope should not be from the verb to wait, it should be from hoping, to hope is to demand, to go in search, to build and not to give up, so I can say that the black movement will not give up to achieve the ideal and achieve changes in practices and habits in Brazilian society, producing dialogue for the construction of an education that is effective in breaking with ideas of non-appreciation of black culture.

However, it is necessary to consider that public educational policies related to ethnic-racial issues, in recent years, have suffered several attacks and dismantling, since they were not considered essential and important for a project of society, with that, the duty of compliance with the Constitution was forgotten when making this struggle a government policy and not a state one. After almost two decades of the implementation of one of the main educational public policies, the same president of its creation, Luís Inácio *Lula* da Silva, returns to the scene, which makes this anniversary symbolic for the collection and search towards new advances.

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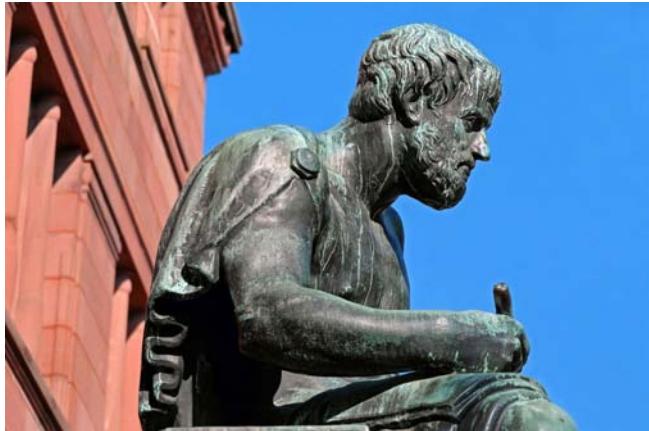
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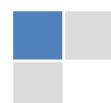
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6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your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

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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:

- o Explain the value (significance) of the study.
- o 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.
- o Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- o 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:

- o Report the method and not the particulars of each process that engaged the same methodology.
- o Describe the method entirely.
- o To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- o Simplify—detail how procedures were completed, not how they were performed on a particular day.
- o 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:

- o Resources and methods are not a set of information.
- o Skip all descriptive information and surroundings—save it for the argument.
- o 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:

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

What to stay away from:

- o Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- o Do not include raw data or intermediate calculations in a research manuscript.
- o Do not present similar data more than once.
- o A manuscript should complement any figures or tables, not duplicate information.
- o 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.

- o You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- o Give details of all of your remarks as much as possible, focusing on mechanisms.
- o 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.
- o 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?
- o 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.

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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

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