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**TANULMÁNYOK**

**STUDIES**





# Retorikai szerkezet és igehasználat angol absztraktokban: Magyar és nemzetközi nyelvészeti cikkek összehasonlítása

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Az utóbbi években számos tanulmány foglalkozott különböző tudományágakban, nyelven és országokban publikált absztraktokkal. Ezek zöme az absztraktok retorikai felépítésével foglalkozott, de egyre nagyobb figyelem fordul a nyelvi megformáltságra, azon belül is az igehasználatra. Nagyon limitált azonban a magyar szerzők által közölt angol nyelvű absztraktok elemzése. A jelen tanulmányban két neves alkalmazott nyelvészeti folyóiratban, az *Alkalmazott Nyelvtudományban* és *Applied Linguistics*-ben publikált angol nyelvű összefoglalókat elemzem. Kétszer 50 absztraktot választottam ki a 2013 és 2022 közötti időszakból. A magyar absztrakt korpusz magyar nyelvű tanulmányok mellett megjelenő angol összefoglalókat tartalmaz, melyek a magyarul nem beszélők számára is értelmezhetővé és önállóan érthetővé kell, hogy tegyék a publikált műveket, ezért megformáltságuk kifejezetten fontos. A vizsgálat először a retorikai szerkezeteket tekinti át, majd a három leggyakrabban előforduló retorikai mozzanatban (*Célok, Módszerek és Eredmények*) külön-külön vizsgálja az igék, az igeidők, és a módbeli segédigék használatát. Az eredmények azt mutatják, hogy a magyar szerzők többsége az angol referenciakorpuszhoz hasonló strukturális megoldásokat alkalmaz, bár kevesebb mozzanatot és lineárisabb szerkezetet találunk náluk. A jelen és múlt idők aránya közel azonos a két korpuszban, a jelen idő dominál. A magyar szerzők közül néhányan egyéni megoldásokat alkalmaznak, amelyek inkább kollokvialis hatást keltenek. Reményeim szerint ez a kutatás hasznos referenciául szolgál a magyar kutatók számára, hogy fejlesszék tudományos írással kapcsolatos tudatosságukat.

**Kulcsszavak:** absztraktok, empirikus tanulmányok, retorikai szerkezet, igeidő, íráspedagógia

## 1. Bevezetés

A tudományos publikációk területén az absztraktok a cikkek nélkülözhetetlen részévé váltak. A tanulmányok nagy többsége ma már tartalmaz egy informatív, jellemzően 150 és 250 szó közötti összefoglalót, amely összegzi a kísérő cikk fő megállapításait. Vitathatatlan, hogy az absztraktok egyre fontosabb szerepet játszanak a tudományos életben, a tudás előállításában és terjesztésében is. A megnövekvő tudományos információáradatban az olvasók a címek mellett az összefoglalókra támaszkodhatnak, hogy kiszűrjék a relevánsnak tűnő tartalmakat és segítségükkel eldöntsék, mi az, amit érdemes tovább olvasniuk vagy későbbi tanulmányozásra elmenteniük. A kutatói közösségekben betöltött fontos szerepük és funkciójuk miatt az absztraktok önálló műfajnak számítanak, amelyek információs és promóciós szerepet is

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ellátanak, azonban ezek csak jól megformált és önállóan is érthető szövegek esetében érvényesülnek.

Úgy tűnhet, hogy könnyű absztraktot írni, hiszen a tanulmányok tömörített változatait kell létrehozni. Gyakran okoz azonban dilemmát, hogy mi fér bele egy rövid összefoglalóba, ellenőrizzük a szószámot és a tartalmat, hol hozzáteszünk, hol elveszünk, mire kialakul a végső változat. És mindennek ellenére legtöbbször azt érezzük, hogy valami hiányzik. Még összetettebb a feladat, ha a tanulmány és a kért absztrakt nem azonos nyelvűek. A tudományos élet globalizációja egy erősen versengő és értékelés-orientált kutatási kultúrát teremtett, ahol az egyéneket publikációs listájuk hossza és minősége alapján ítélik meg. Ráadásul nem csak hogy nagyobb szükség van a publikálásra, de ezt egyre inkább egy olyan tudományos angol nyelven kell tenni, amely speciális nyelvi készségeket igényel mind az anyanyelvi, mind a nem anyanyelvi beszélőktől. Ma már minden tudományterületen elvárás az idegen nyelvű publikálás, ugyanakkor a tudományos folyóiratok a nem angol nyelven készült cikkek mellé is egyre gyakrabban kérnek angol nyelvű összefoglalókat vagy rövid kivonatokat.

Nem véletlen tehát, hogy az utóbbi másfél évtizedben egyre több tanulmány jelent meg angol nyelvű absztraktok elemzéséről, melyek jelentős tudományterületi különbségekre világítanak rá, vagy összehasonlítást végeznek anyanyelvi és nem anyanyelvi, illetve tapasztalt és kezdő szerzők között. Fokozódó érdeklődés övezi a szövegstruktúrát, a grammatikai vagy lexikai szempontokat, amelyek annyira szerteágazóak, hogy számba vételükre itt nincs lehetőség. Nagyobb korpuszt elemző, friss áttekintő munkákra lásd a témában például Jiang és Hyland 2022-es és 2023-as tanulmányát; ezek azért is különlegesek, mert a tudományterületi összehasonlításon túl diakrón aspektust is tartalmaznak, tehát rávilágítanak a változó trendekre.

Különösen érdekesek azok a cikkek, amelyek egyszerre vizsgálják a retorikai szerkezetet és az egyes mozzanatokban megtalálható nyelvi jelenségeket. Ezen belül is az igeidő használat kulcsfontosságú kérdésnek tűnik (dar & Soleh, 2022; Jiang & Hyland, 2023; Nurhayati, 2017; Tseng, 2011). A szerzők gyakran stílusútmutatókhoz és publikációs kézikönyvekhez fordulnak nyelvi tanácsért, melyekben az igehasználatra vonatkozóan található ugyan néhány utalást, azonban meglehetősen leegyszerűsített formában, amelyek nem tükrözik a publikációkban megjelenő sokszínűséget vagy az időbeli változásokat (lásd pl. Jiang & Hyland, 2023).

A nemzetközi érdeklődéssel szemben magyar kutatók által idegen nyelven írt absztraktokról készült empirikus kutatásokról szinte alig olvashatunk (Doró, 2014, 2020; Götz, 2015; Veszelszki, 2018), bár készült néhány, a tudományos írásra vonatkozó egyéb összehasonlító munka (lásd pl. Árvay & Tankó, 2004; Márta, 2018; Neumayer, 2014). Ezért ez a tanulmány ezt a hiányosságot kívánja orvosolni azáltal, hogy feltárja egy alkalmazott nyelvészeti magyar folyóirat absztraktjainak retorikai szerkezetét és a három leggyakoribb mozzanatban (a célokra, módszerekre és eredményekre vonatkozó részekben) előforduló igehasználót. A vizsgálat fókuszában olyan angol nyelvű absztraktok állnak, amelyek magyar empirikus cikkek mellett jelentek meg. Ezeket összehasonlítom egy vezető nemzetközi folyóirat azonos módszerrel kigyűjtött absztraktjaival, hogy lássuk, mennyire mutatnak hasonló retorikai szerkezetet és igehasználót a magyar szerzők írásaival.

## 2. Elméleti háttér

### 2. 1. Retorikai szerkezet kutatása absztraktokban

A tudományos közlemények retorikai szerkezetének vizsgálata Swales korai munkáira épült (Swales 1981, 1990), aki megalkotta a CARS modellt (*creating a research space*, magyarul *a kutatás terének megalkotása*, KTM), ami még mindig az egyik leggyakoribb retorikai modell, amit mind kutatási, mind íráspedagógiai céllal használnak. Ebben három nagyobb egységet, ún. mozzanatot (angolul *moves*) nevezett meg, amelyeket kisebb alcsoportokra, ún. lépésekre (angolul *steps*) bontott tovább. Megtaláljuk például a bevezetők lépései között a *Célok meghatározását* valamint a *Tanulmány felépítésének áttekintését*. Szintén a bevezetőkre dolgozták ki az IMRD vagy IMRAD modellt, amelynek az elnevezése a négy vizsgált mozzanat angol nyelvű rövidítéséből kapta a nevét (*Introduction, Methods, Results (and) Discussion*, azaz *Bevezető, Módszerek, Eredmények, Tárgyalás*) (lásd Bhatia, 1993; Lorés, 2004). Bár később az absztraktok elemzésére önálló, többnyire öt mozzanatból álló modellek születtek, az IMRD modellt magyar szerzők is használták összefoglalók feltérképezésére (Götz 2015, Neumayer 2009). A kifejezetten nyelvészeti absztraktokat vizsgáló tanulmányok ötmozzanatos modelleket alkalmaztak, amelyek bár a mozzanatok elnevezésében kissé eltérnek, a mozzanatok funkciói majdnem teljesen megegyeznek, ami lehetővé teszi a tanulmányok összehasonlíthatóságát. Az 1. táblázat bemutat néhány ilyen modellt és a jelen tanulmányban is használt magyar terminológiát, valamint az egyes retorikai mozzanatok kommunikatív funkcióit (a mozzanatok rövidítve M1, M2, stb. is jelölik).

Tseng (2011) rámutatott arra, hogy a tudományos folyóiratokban az absztraktok készítésének tényleges gyakorlata nem mindig illeszkedik ehhez a modellhez, ráadásul a különböző tudományágak és folyóiratok is eltérő mozzanatszerkezetet mutatnak. Tseng arra jutott, hogy a 2., 3. és 4. mozzanat kötelező, míg az 1. és 5. mozzanat opcionális, bár ez nem azt jelenti, hogy minden absztrakt tartalmazná a középső három mozzanatot. Ez egybecseng más kutatók eredményeivel, akik a szélső kettő mozzanatot általában kevésbé dominánsnak találták, bár meglehetősen nagy különbségeket láttak egyes folyóiratok között is. Ezek közül néhány tanulmányt a 2. táblázatban láthatunk.

1. táblázat. Absztraktok retorikai szerkezetére vonatkozó modellek és kommunikatív funkcióik

	<b>Dos Santos (1996)</b>	<b>Hyland (2000a)</b>	<b>Swales és Feak (2004)</b>	<b>Mozzanatok magyarul</b>	<b>Kommunikatív funkcióik</b>
M1	Situating the research	Introduction	Background	Bevezetés	A cikk elhelyezése, eddigi kutatási eredmények bemutatása, háttér és kontextus, definíciók megadása
M2	Presenting the research	Purpose	Aim	Célok	A kutatási célok és hipotézisek bemutatása
M3	Describing the methodology	Method	Method	Módszerek	Az alkalmazott módszerek, eszközök, adatgyűjtési eljárások és elemzési módszerek rövid bemutatása.
M4	Summarizing the results	Product	Results	Eredmények	A főbb eredmények, adatok, argumentáció bemutatása
M5	Discussing the research	Conclusion	Conclusion	Tárgyalás	Az eredmények értelmezése, a célokon túli kiterjesztése, az eredmények felhasználhatóságára utalás, további kutatások kijelölése

2. táblázat. A mozzanatok előfordulási aránya alkalmazott nyelvészeti absztraktokban

	<b>Bevezetés</b>	<b>Célok</b>	<b>Módszerek</b>	<b>Eredmények</b>	<b>Tárgyalás</b>
Dos Santos (1996)	40%	93%	92%	75%	58%
Pho (2008)	30-50%	100%	90-100%	100%	50-70%
Suntara & Usaha (2013)	44%	83%	86%	87%	69%
Fatma & Yağiz (2020)	29-100%	100%	71-100%	100%	86-100%

A fenti táblázat százalékos eredményeiből könnyen kikövetkeztethető, hogy gyakoriak a négy mozzanatból álló absztraktok, de előfordulnak csak három részből összetevődők is. A

mozzanatok mintázatával kapcsolatban a korábbi kutatások azt mutatták, hogy az alkalmazott nyelvészet területén a leggyakoribbat a *Célok-Módszerek-Eredmények-Tárgyalás*, a *Bevezetés-Célok-Módszerek-Eredmények-Tárgyalás*, a *Bevezetés-Célok-Módszerek-Eredmények* és a *Célok-Módszerek-Eredmények* összetételű sorrendek (Fatma & Yağiz, 2020, Hyland, 2004, Suntara & Usaha, 2013, Pho, 2008). Hyland (2004) szerint a bevezető és a következtetés mozzanatok használata az absztraktokban növekvő tendenciát mutat. Azt is érdemes kiemelni, hogy a hármas tagolású *Célok-Módszerek-Eredmények* típusú összefoglalók Fatma és Yağiz (2020) gyakoribbnak találta a török nyelvészek, mint az angol anyanyelvi szerzők körében.

Korábbi tanulmányok arra is felhívják a figyelmet, hogy a mozzanatok sorrendje általában követi az ötmozzanatos modellekben szereplő sorrendet, de előfordul fordított sorrend is, amikor például a célok megelőzik a háttérre vonatkozó bevezetőt, vagy a módszerek a célokat. Ez utóbbi különösen gyakori akkor, ha határozói mellékmondatban a mondat elején egy igei főnév (gerund) vagy főnévi igenév (to+infinitívben) szerepel (Dos Santos, 1996, Pho, 2008, Fatma & Yağiz, 2020)

## 2. 2. Igeidők használata nyelvészeti absztraktokban

Az absztraktok nyelvi megformálására vonatkozó egyik korai tanulmányban Graetz (1985) a mellett érvelt, hogy az absztraktokra a következő négy szempont jellemző: a múlt idő, a harmadik személy, az aktív igealakok használata és a tagadósók kerülése. Azóta ezeket az általános állításokat számos kutatás finomította, kiemelve egyrészt az absztraktok egyes mozzanataiban betöltött szerepüket, másrészt a tudományterületi különbségeket, harmadrészt az egyéni különbségeket és az íráskonvenciók változását is. Jiang és Hyland (2023) kiemelik, hogy az igeidő megválasztása nem egyszerű nyelvtani, hanem retorikai döntés is egy olyan komplex folyamatban, amelyben a szerzők igyekeznek a kutatással kapcsolatos megállapításaikat az olvasók számára hihetővé és meggyőzővé tenni.

Szintén egy korai tanulmányban, amely orvosi témájú absztraktokat vizsgált, Salager-Meyer (1992) rámutatott a retorikai funkciók és az absztraktokban használt ragozott igealakok és módbeli segédigék közötti szoros kapcsolatra. A szerző arról számolt be, hogy a három leggyakoribb igeidő (egyszerű jelen, egyszerű múlt és befejezett jelen) az összes ragozott igealak 89,8%-át tette ki. Ezen belül a múlt idő dominált 51,4%-kal, míg a jelen idő az összes igeidő egyharmadát (32,8%) tette ki. A cél, a módszerek, az eredmények és az esetek bemutatása részekben főként a múlt időt használták a szerzők, míg a bevezető megjegyzések, az általános érvényű állítások, az adatok összegzése, a következtetések és az ajánlások túlnyomórészt jelen időben álltak. A befejezett jelen időt (Present Perfect) a korábbi kutatásokra való hivatkozásként láthatjuk. Dos Santos (1996) alkalmazott nyelvészeti összefoglalók vizsgálatában arra a megállapításra jutott, hogy mind a három központi mozzanatban a múlt idő dominál, a célok esetében az egyszerű múlt 35%-ot, a módszereknél 96%-ot, míg az eredményeknél 78%-ot tett ki. Tseng (2011) szintén alkalmazott nyelvészeti összefoglalók esetében kimutatta, hogy a jelen időt elsősorban a háttér, a célok és a következtetések bemutatására, míg a múlt időt a módszertan és az eredmények tárgyalására használták. Az angol anyanyelvű és nem anyanyelvű első szerzők közötti különbségeket elemezve Tseng arra a megállapításra is jutott, hogy az anyanyelvűek a célok és eredmények esetében többet használták a jelen időt, mint a nem anyanyelvűek. Láthatjuk, hogy a fenti tanulmányok

megállapításai csak részben egyeznek, ami adódhat a vizsgált résztudományterületek vagy folyóiratok hagyományaiból, de időbeli változásokból is.

A kisebb léptékű tanulmányokkal szemben Jiang és Hyland (2023) szokatlanul nagy, hatezer absztraktra és négy tudományterületre kiterjedő vizsgálatot folytatott, amely a múlt idő használatára is kitért. Eredményeik azt mutatták, hogy a múlt idő leginkább a módszerek és az eredmények leírására jellemző. Használata legdominánsabb a biológia területén, ezt követik a szociológia, az alkalmazott nyelvészet és a mérnöki tudományok. Diakrón módszerükkel azt is feltárták, hogy az elmúlt 30 év alatt az alkalmazott nyelvészeti absztraktokban megnövekedett a múlt idő használata, míg máshol csökkent. Ezt azzal magyarázzák, hogy a biológiában a múlt idő a tényként való közlésben segít, míg máshol a szerzők a meggyőzés céljából, a konkrét kutatáson túlmutató, általánosabb érvényű megállapításaikhoz inkább a jelen időt használják. Nagy hasonlóságot talált Jiang és Hyland (2023) a négy vizsgált tudományág között abban, hogy a szerzők a sok múlt idejű kopula (*was, were*) mellett a lexikális igéket a kutatási cselekményekre, azaz a kutatási lépésekre és az eredmények leírásában használták (pl. *used, analyzed, examined*), valamint úgynevezett diskurzus igék (*discourse verbs*) is előfordulnak a célok és az eredmények leírásában és értékelésében (pl. *suggested, discussed, reported*).

### 2. 3. Absztraktokra vonatkozó íráspedagógia és írástámogatás

Ahhoz képest, hogy mennyire fontos szerepet töltenek be a szerzők tudományos érvényesülésében az absztraktok, az erre vonatkozó íráskészségek fejlesztésére kevés figyelem jut (Campbell, 2019; Tverdokhlebova & Makovskaya, 2022; Veszelszki, 2018). Általában implicit módon, az azonos szakterületen publikált absztraktok olvasásával alakítanak ki maguknak a kutatók egy elképzelést arról, hogy hogyan is néz ki egy absztrakt, milyen szerkezeti és nyelvi elvárásoknak kell megfelelnie. Ha a szerzők az egyetemen vagy pályafutásuk elején részesülnek is angol íráspedagógiai képzésben, aligha kapnak megfelelő tájékoztatást az absztraktok írásáról. Ez tipikusan olyan műfaj, amellyel konferenciára történő jelentkezéskor vagy tanulmányok beküldésekor találkoznak a doktori hallgatók, illetve a kutatók, de leginkább hosszra és szerkesztésre vonatkozó elvárásokat támasztanak a szerzőkkel szemben, tartalmi vagy retorikai javaslatokat kevésbé tartalmaznak. A tudományos írás tanításáról szóló angol nyelvű kézikönyvek vagy az íráspedagógiára és nyelvi támogatásra szakosodott egyetemi íráscentrumok (*writing centers*) kurzusanyagai kevés szót ejtenek az absztraktokról; általában néhány szempontot emelnek csak ki, mint például a hossz, a világosság, a jól megformáltság vagy a tanulmányok kicsiben való leképezése. A nyelvi megformálással kapcsolatban itt két példát említek, melyek a jelen tanulmány fókuszában lévő igeidőkre vonatkoznak. A University of Wisconsin - Madison Writing Center szétválasztja a társadalom és természettudományokra vonatkozó javaslatait az egyes retorikai mozzanatokhoz. A tájékoztató szerint a társadalomtudományokban a célok, módszerek, és az eredmények jelen, míg a korábbi kutatásra vonatkozó bevezető múlt időben íródjanak. A természettudományok esetében a célok és a kutatás fontosságának megjelölése jelen, ugyanakkor a korábbi kutatások, a módszerek és az eredmények bemutatása múlt időbe kerüljön. Az APA 7. kiadása szerint a szerzők használjanak jelen időt a levont következtetések vagy a folyamatosan alkalmazható eredmények leírására, míg múlt időt a mért konkrét változók vagy eredmények leírására. Látható, hogy már e két forrás is részben mást javasol, illetve nem térnek ki arra, hogy egyszerű jelen és múlt időre utalnak-e, vagy a két igeidő más aspektus szerinti változatai (például a

befejezett jelen) milyen szerepet kaphatnak. Az irodalmi áttekintésben fentebb láthattuk, hogy a múlt és jelen eltérő arányban, de megtalálható a főbb retorikai mozzanatokban és még tudományterületen belül is eltéréseket tapasztalhatunk az egyes mozzanatokban használt igeidőkkel kapcsolatban. Ezért egy jól letisztult vázat valószínűleg minden szerző kialakít magának, melyet egyrészt a saját olvasmányaira, általános és tudományos nyelvi ismereteire, előző publikációra, és a tudományos hagyományokra alapoz.

Nem hagyhatjuk figyelmen kívül azonban azt a kérdést sem, hogy az idegen nyelvű szövegalkotás mennyire történik közvetlenül a célnyelven vagy sok esetben egy anyanyelven megírt szöveget ültetnek át a szerzők a célnyelvre, legtöbb esetben angolra. Nem ritka még manapság sem, bár számos helyen önplágiumnak tartják, hogy a szerzők két nyelven is megjelentetik ugyanazt vagy közel ugyanazt a munkát. Ilyen esetben találkozhatunk a szerző, vagy több szerző esetén az egyik szerző fordításával, de az angol nyelvű publikálási kényszer hatására gyakori a szakfordítók vagy anyanyelvi kutatók bevonása is az idegen nyelvű tanulmányok elkészítésébe (Károly, 2021; Penttilä és mtsai, 2021). Ha a mű végül csak angolul jelenik meg, akkor is sok esetben elkészülhet egy anyanyelvi változat, amit szintén a szerző(k) fordítanak le vagy más esetben fordítási vagy nyelvi ellenőrzési segítséget kérnek szakemberektől, vagy tapasztaltabb kollégáktól. A kutatók által végzett önfordításról viszonylag kevés tanulmány született. Pisanski Peterlin (2019) szlovén kutatókat interjúvált meg és azt találta, hogy a kétnyelvű publikálás esetén a szerző és fordító, eredeti szöveg és fordítás, forrásnyelv és célnyelv közötti különbségek könnyen elmosódnak. Több résztvevő kiemelte, hogy a fordítás időigényes és nehéz feladat, és csak kevesen gondolták úgy, hogy ezzel a lépéssel lehetőség nyílik a figyelmesebb szövegellenőrzésre, és ezáltal javul a célnyelvi cikk tartalma is. Pahor, Smodiš és Pisanski Peterlin (2021) kifejezetten absztraktok fordítását vizsgálva feltárta, hogy sok esetben a nyelvi megformáltság szempontjából (pl. a szerző megjelenítése névmáshasználattal, passzív szerkezet, mellékmondatok, betoldás, kihagyás) a forrásnyelvi szlovén és a célnyelvi angol szövegek között jelentős eltérést tapasztalhatunk. Ez a tanulmány is különbségeket talált a megvizsgált öt tudományterület között és a megkérdezett négy szakfordító véleménye sem csengett teljesen egybe. Az általában nem derül ki, hogy a megjelent absztraktok milyen lépésekben készülnek, de a párhuzamos szerzői korpuszokat vizsgáló tanulmányok legtöbbször arra a konklúzióra jutnak, hogy sok angol nyelvű absztrakt más nyelvből készült fordítás. Ez azt jelenti, hogy a szöveg szerkezetét közvetlenül átültetik angolra, de egyes nyelvtani és szóhasználati választások is a forrásnyelv interferenciáját tükrözik, ami nem biztos, hogy megfelel az angol és/vagy a nemzetközi tudományos közösség elvárásainak (Lorés-Sanz, 2014, Von Bonn és Swales (2007). Von Bonn és Swales (2007) két francia szerzőt kérdezett a francia és az angol nyelvű párhuzamos absztraktjaik közötti jelentős eltérés okairól. Az időben későbbi verzió és a két nyelv közötti különbségeken túl a jobb hangzást, a szó szerinti fordítás elkerülését, valamint az elképzelt tudományos közösség elvárásait is megemlítték.

A fent említett fordítói vagy nyelvi ellenőrzési segítséget az utóbbi években egyre gyakrabban a szerzők a számítógéptől kapják. Az ingyenes fordítóprogramok egyre hatékonyabbak, és használatuk széles körben elterjedt. A mesterséges intelligencia-alapú írástámogató programok berobbanásával az utóbbi egy évben rohamos tempóban felcserélődni látszik a humán forrás a gépi segítségre, bár ez esetben is szükség van szerzői utómunkára. A jelen tanulmányban használt korpusz 2022-ig válogatta az összefoglalókat, így ezeket még nem érintette olyan jelentősen a mesterséges intelligencia által egy hosszabb szövegből létrehozott

kivonatok dilemmája, ugyanakkor már olvashatunk olyan tanulmányokat, amelyek ezt a jelenséget vizsgálják. Ezek a géppel előállított vagy ember által írt absztraktok minőségére és felismerhetőségére is kitérnek. Gao és mtsai (2022) például azt találták, hogy a számítógép által generált absztraktok homályosabbak, formulaszerűnek hatnak és nem képesek a folyóirat formai elvárásainak megfelelni. Ugyanakkor a mesterséges intelligencia-szűrők képesek ezeket az absztraktokat jól azonosítani és a kutatásba bevont olvasók is ki tudták szűrni átlagosan a 68%-ukat. Ezzel szemben Casal és Kessler (2023) nyelvész résztvevői csak 39%-ban ítélték meg helyesen az absztraktok szerzőségét. A kutatásban részt vevő folyóirat-szerkesztők egy részének pedig nem volt etikai jellegű kifogása a mesterséges intelligencia használatával szemben. A korai tapasztalatok és publikációk alapján azt a következtetést vonhatjuk le, hogy angol cikkek alapján generált absztraktok, bár időnként átmehetnek a humán olvasói szűrőn, nem tudják teljesen kiváltani a szerzői mérlegeléseket egy specifikusan az adott kutatásra mutató, informatív összefoglaló elkészítése során.

### 3. A kutatás célja és módszerei

A jelen tanulmány célja feltérképezni magyar alkalmazott nyelvészek által írt angol nyelvű folyóirat absztraktok retorikai szerkezetét és a három középső mozzanatban (*Célok, Módszerek és Eredmények*) a leggyakoribb igék, az igeidők, és a módbeli segédigék használatát. A vizsgálathoz két, egyenként 50 absztraktot tartalmazó korpuszt állítottam össze két vezető alkalmazott nyelvészeti tárgyú folyóiratból. Ez megegyezik a legtöbb hasonló kutatásban használt korpusz méretével vagy meghaladja azt. A magyar folyóiratokban közölt angol nyelvű absztraktok korpuszának (ANY) összeállításához az *Alkalmazott Nyelvtudomány* folyóiratot választottam, amely magyar és angol nyelven is közöl cikkeket. Mivel a kutatás fókuszában magyar szerzők által írt angol nyelvű absztraktok állnak, ezért a magyar tanulmányok mellett megjelenő absztraktokra koncentráltam, melyek csak angol nyelvű összefoglalókkal jelennek meg, magyarokkal nem, így fordítástudományi szempontból nem elemezhetők. Az angol nyelvű nemzetközi folyóiratokban közölt angol nyelvű absztraktok korpuszát (AL) az *Applied Linguistics* folyóirat cikkeiből állítottam össze, amely nemcsak címében azonos a magyar folyóirattal, hanem hasonlóan kiemelkedő szerepet tölt be a nemzetközi szinten, mint Magyarországon az *Alkalmazott Nyelvtudomány*. Fontos kiemelni, hogy nem volt célom a nemzetközi folyóirat absztraktjainak kiválasztásában a szerzők nemzetiségét, anyanyelvét vagy munkahelyét figyelembe venni, vagy megkísérelni csak angol anyanyelvű szerzőket találni. A referenciakorpuszt szándékosan nemzetköziliként fogom említeni. Feltétel volt továbbá, hogy a beválogatott cikkek empirikusak legyenek, hogy minél inkább lehetőség legyen az ötmozzanatos modell vizsgálatára. A 2013 és 2022 közötti tíz éves periódusból a fenti kritériumnak megfelelő első 5-5 absztraktot válogattam be; amennyiben nem volt ennyi az adott évben az évenkénti kevesebb számot megjelentető magyar folyóirat esetében, akkor a következő vagy a megelőző évből emeltem be összefoglalókat. Fontos még megemlíteni, hogy mindkét folyóirat csak szószámot írt elő az absztrakthoz, egyéb módon nem orientáltak a szerzőket. Ez alól láthatóan kivétel az *Alkalmazott Nyelvtudomány* 2022-es száma, amelyben hosszabb és részletesebb összefoglalókkal találkozunk, amelyek mindegyiket egy lineáris, 5 modelles struktúrát követ.

A retorikai elemzéshez a korpusz minden egyes összefoglalóját legalább kétszer kódoltam a QDA Miner lite program segítségével, a fenti ötlépéses modellek alapján. Miután a



korpuszaimat erre az öt mozzanatkategóriára osztottam, megvizsgáltam a mozzanatok százalékos előfordulását a teljes korpuszra vonatkozóan, valamint a mozzanatok számát az egyes absztraktokban. Megnéztem továbbá a makrostruktúrát is, például egyes mozzanatok többszöri előfordulását, a modellhez képest más sorrendben történő használatát, amelyre a szakirodalom is utal. A két korpusz eredményeit összevettem és összehasonlítottam korábbi hasonló alkalmazott nyelvészeti fókuszú tanulmányokkal is. Az első elemzést követően, három hónap elteltével megismételtem az elemzést, apró módosításokkal, míg kialakult a végső eredmény. A kódolásban a tartalmi és lexikai elemek is segítségemre voltak. Korábbi absztrakt-elemzéseimhez hasonlóan itt is több esetben nehéz volt eldönteni az egyes mondatok vagy tagmondatok funkcióját (azok sematikussága miatt), így néhol a döntéshez szükséges volt a tanulmányok átolvasása is.

Ezután kódoltam a három leggyakoribb mozzanatban (*Célok, Módszerek, Eredmények*) a jelen és múlt idejű igéket, kiszámoltam százalékos előfordulásukat, felvéve a vizsgálatba a módbeli segédigék gyakoriságát is. Az igeidők keresése a korpuszok szófajok szerinti címkézését igényelte mozzanatokra lebontva, melyet a WebLicht nyelvészeti elemző programcsomag szófaji egyértelműsítőjének (POS tagger) segítségével végeztem el. Ez lehetővé teszi a ragozott igék egyszerű jelen, folyamatos jelen, befejezett jelen és egyszerű múlt idejű alakjainak, valamint a módbeli segédigéknek a kigyűjtését. E gépi keresések után kézzel ellenőriztem minden egyes konkordanciát, segítségül használva az online szabadon hozzáférhető <https://tense-sense-identifier.herokuapp.com/> oldalt is, amely a beillesztett szövegben előforduló igeidőket szín szerint kódolja, és így gyors vizualizációt tesz lehetővé. Mivel mindkét program apró kódolási hibákat tartalmaz, együttes használatuk a kézi ellenőrzéssel megbízható eredményt ad. Végül a Sketch Engine segítségével kigyűjtöttem a leggyakoribb 10-10 igét mindkét korpuszból, itt is mozzanatokra lebontva a vizsgálatot. Az AntConc konkordancia-elemzővel pedig az egyes igék gyakoriságát és szöveggörnyezetét tudtam ellenőrizni és a legszemléletesebb példákat kigyűjteni.

#### 4. Eredmények és diszkusszió

##### 4.1. A mozzanatok előfordulása és korpuszszintű szöveglefedettsége

Az absztraktok ötmozzanatos eloszlásának eredményei a 3. táblázatban láthatók, amely azt mutatja, hogy négy mozzanat kiemelt jelentőségű ezekben az alkalmazott nyelvészeti összefoglalókban. Ezek voltak a *Bevezetés*, a *Célok*, a *Módszerek* és az *Eredmények* az ANY korpuszban, amelyek mindegyike az absztraktok több mint 70%-ában szerepelt, a *Célok* mozzanat a 96%-os eredménnyel elengedhetetlennek tűnik. Ezzel szemben az 5. mozzanat (*Tárgyalás*) az absztraktok csupán 24%-ában szerepelt. Ezek az eredmények csak részben vannak összhangban az AL korpusz arányaival, ahol a *Módszerek* és az *Eredmények* mozzanat az absztraktok több mint 90%-ban fordul elő (96 és 92%), de csak kevésbé marad el ettől a *Célok* 88%-a. Úgy tűnik, hogy míg az ANY korpuszban a 1. mozzanat, addig az AL korpuszban az 5. mozzanat hangsúlyos még. Ha szakirodalmi kitekintést teszünk, az eredmények általában véve összhangban vannak Dos Santos (1996), Pho (2008), Suntara és Usaha (2013) és Fatma és Yağiz (2020) eredményeivel, miszerint a 2., 3. és a 4. mozzanat kötelező (azaz eléri a 60%-ot). Ezek a kutatások is eltérő eredményeket találtak arra vonatkozóan, hogy a két szélső mozzanat opcionális-e. A fenti négy kutatás csak egyetlen esetben mért a bevezetőkre 74%-ánál magasabb

arányt, és inkább az 50% alatti számok a jellemzők. Tseng (2011) például három alkalmazott nyelvészeti folyóiratot hasonlított össze és azt találta, hogy az *Applied Linguistics*-ben többször fordult elő *Bevezetés* mozzanat, mint a másik kettőben (35%, 15% és 9%). A fenti eltérő eredmények oka talán annak tulajdonítható, hogy a jelen tanulmány csak az empirikus kutatások absztraktjait tartalmazza és nagyobb esetszámot, mint a többi kutatásé, amelyek fontos résznek tekintik a kutatás elhelyezését, míg mások, pl. Santos (1996) az empirikus mellett elméleti vagy összefoglaló tanulmányokat is tartalmazhatnak, amelyek inkább a célokra és módszerekre teszik a hangsúlyt. Hyland (2000a) azt is kimutatta, hogy a *Bevezetés* és a *Következtetés* mozzanatok használata az absztraktokban növekvő tendenciát mutat, amit az AL korpusz eredményei tükröznek is, de úgy tűnik, az ANY korpuszra a *Tárgyalás* nem annyira jellemző. Ez lehet a magyar nyelvű absztraktírás hagyományainak az eredménye, de abból is következhet, hogy egy részletesebb bevezető után egyszerűen nem marad hely az eredmények tárgyalására, de ha igen, az sokszor csak sematikus jelenik meg. A 2022-es évből származó öt ANY absztrakt, amelyeknek a hossza és ötmozzanatos struktúrája jelentősen eltér a korábbi összefoglalóktól, azt bizonyítja, hogy amennyiben a szerzők támpontot kapnak az absztraktok megírásához és hosszban sincsenek annyira limitálva, sikeresen tudnak informatívabb absztraktot írni. A hossz fontosságát Tseng (2011) is megemlíti, kiemelve, hogy az ő AL korpuszában is hosszabbak voltak az absztraktok, mint a másik két vizsgált folyóiratban, és ez segíthette a szerzőket a négy- vagy ötmozzanatos összefoglalók írásában.

### 3. táblázat. A mozzanatok előfordulási aránya az absztraktokban

	<b>Bevezetés</b>	<b>Célok</b>	<b>Módszerek</b>	<b>Eredmények</b>	<b>Tárgyalás</b>
<b>Alkalmazott Nyelvtudomány</b>	74%	96%	74%	72%	24%
<b>Applied Linguistics</b>	56%	88%	96%	92%	78%

Ha megvizsgáljuk a százalékos előforduláson túl a mozzanatok teljes korpuszra vonatkozó arányát, szintén jelzés értékű információt kapunk arra vonatkozóan, mennyire hangsúlyosak ezek. A 4. táblázat értékei szépen kivetítik, hogy az *Eredmények* mozzanat a legnagyobb a korpuszokban a 31 és 30 %-os arányokkal. Ezt támasztja alá El-Dakhs (2018) kutatása is, aki presztízs alapján sorolt két csoportba nyolc alkalmazott nyelvészeti folyóiratot, és azt találta, hogy a nagyobb presztízzsel rendelkezőkben az *Eredmények* mozzanat átlagosan a leghosszabb. A magyar korpusz első három mozzanatának mindegyike a korpusz egyötödét teszi ki, míg a *Tárgyalás* csupán 3%-ot, miközben az AL korpusznak közel 14%-át fedi le a *Bevezetés*, a *Tárgyalásra* pedig 10% jut. Ezek azonban átlagos eredmények, amely számok mögött nagy egyedi eltérések vannak, mint ahogy azt a 4.2-es alfejezet példái is mutatni fogják.

4. táblázat. Az öt mozzanat teljes korpuszra vonatkoztatott szöveglefedettsége

	Bevezetés	Célok	Módszerek	Eredmények	Tárgyalás
<b>Alkalmazott Nyelvtudomány</b>	21,5%	21,3%	22%	31,4%	3,3%
<b>Applied Linguistics</b>	13,7%	22,1%	24,1%	29,9%	10,1%

## 4.2. A mozzanatok száma és makrostruktúrája

Érdeemes megnézni azt is, hogy hány mozzanattól áll össze egy absztrakt. Ahogy korábban említettem, és ahogy azt a szakirodalom is alátámasztja, nem szabad azt feltételeznünk, hogy az összefoglalók mind az öt mozzanatot tartalmazzák. Az 5. táblázat azt mutatja, hogy a leggyakoribbak a három vagy négy mozzanattípusú felhasználó absztraktok (bár egyazon összefoglalóban történő többszöri felhasználás miatt akár több egységből is állhatnak). Az AL korpuszban a leggyakoribb szám a négy, ami egybeesik Tseng (2011) eredményével. Az ANY korpusz esetében a három mozzanat alkalmazása a leggyakoribb, míg egy korábbi tanulmányomban (Doró, 2020) az *Alkalmazott Nyelvtudományban* a négy, a *Modern Nyelvoktatásban* a három mozzanatot találtam a leggyakoribb választásnak. A jelenlegi ANY korpuszban a magyar szerzők közül négyen egyetlen vagy kettő mozzanattól alkották meg az absztraktjukat, ami szintén hasonlít a 2020-as adatokhoz. Feltételezhető, hogy ezek az absztraktok nem kellően orientálják az olvasót, inkább csak témamegjelölést vagy kérdésfelvetést tartalmaznak.

5. táblázat. A felhasznált mozzanattípusok száma

Mozzanattípusok száma	1 mozzanat	2 mozzanat	3 mozzanat	4 mozzanat	5 mozzanat
<b>Alkalmazott Nyelvtudomány</b>	1	3	23	16	7
<b>Applied Linguistics</b>	0	1	12	27	10

Öt mozzanattól álló, lineáris absztrakttal az ANY korpuszban hétszer, míg az AL korpuszban ötször találkozunk. A lenti 1. példa egy olyan absztraktot mutat, amelyben az öt mozzanat egymást követi, a felépítésük arányos, egy vagy két mondatból állnak, és a szerzők nyelvileg is egyértelműen jelzik a mozzanathatárokat (ezek a saját aláhúzott kiemeléseim).

(1) <M1> *The information content conveyed by speech contains other kinds of information as well as the communication message and its meaning. These contents, which often remain hidden and are revelatory of the speaker, may be interesting not only for researchers but for the everyday life.* <M2> *The aim of this study is to investigate the personality psychological background of these factors. Is there a relationship between the speech of a person and their personality? Are*

*there any changes in the perception of a person with aging? <M3> In this study transcriptions were examined from two different points of view, i.e., from the perspectives of production and of perception. The relations between the features of the speech and the judgments assigned to the speaker by the listeners are statistically analyzed. <M4> Results show some connections between certain features of talk and judgments formed about personality. <M5> These findings provide a possibility of getting to know the impressions made only by the heard speech and of comparing them to the judgements of people of different ages. (ANY14)*

A mozzanatok nem feltétlenül lineárisan jelennek meg, sok a fordított sorrend (ANY n=4, AL n=10) vagy a ciklikusság, azaz az egy absztraktban való többszöri visszatérés. A 2. példában egy olyan absztraktot látunk, amelyben a négy mozzanattól kettő kétszer is szerepel (célok, módszerek, célok (hipotézisek), eredmények, tárgyalás, eredmények), ezért ezt ciklikus absztraktnak nevezzük. A lenti absztrakt arra is jó példa, hogy sok esetben mondaton belül is változhatnak a funkciók, az első, célokat meghatározó mondat második fele egyben a célokra is utal már, hiszen részletes módszereket is tartalmaz.

*(2) <M2>Possible connections between eye-contact and speech were examined <M3>in a trial based on recordings of 4 different people, 2 men and 2 women, all of them reading out the same short text. <M3> The recordings were submitted to volunteer listeners via the internet. <M2> It was hypothesized that listeners are either a, able to somehow detect eye-contact by hearing or b, they expect it at some particular points of the text (e.g. before commas). <M4> Although it seems that the listeners' hits are influenced by the readers' articulation tempo and pausing behavior, <M5> more research is needed to define what exactly affects the perception of listeners. <M4> Results, however, show that listeners are likely to perceive eye-contact and that its detection is not accidental. (ANY7)*

Találhatunk egyéb érdekes mozzanatsorrendeket is, amelyekből lényegesen több van az AL korpuszban. Például a *Bevezetés-Módszerek-Tárgyalás* tagolású absztraktokból látszólag hiányoznak a célok és az eredmények, de ezeket kompenzálja egy hangsúlyosabb bevezető és módszereket bemutató rész, valamint az egész kutatás fontosságának hangsúlyozása az absztrakt végén. Több olyan absztrakttal is találkozhatunk az ANY korpuszban, amelyben kétszer is definiálnak a szerzők célokat és módszereket, ezt látjuk az M1, M2, M3, M2, M3, M4 vagy az M1, M2, M3, M4, M3, M2, M5 tagolásokban. Szintén érdekes választás a célok kijelölése, azután a háttér tárgyalása, majd ismét a célok megfogalmazása. A következő struktúrában hiányzik az explicit eredménymegnevezés, mintha maga a kutatás elhelyezése lenne a fontosabb: M2, M1, M2, M3, M5. Az AL összefoglalókban gyakori, hogy a *Célok* és *Módszerek* vagy a *Célok* és *Eredmények* összecsúsznak ugyanabba a mondatba, vagy akár át is fedik egymást (lásd 3. és 4. példa). Ez sokkal kevésbé jellemző az ANY korpuszra.

*(3) <M3> This article presents results of two off-line comprehension tasks investigating the acceptability of unconventional and conventional metonymy by*

*native speakers of Korean and Spanish who speak English as a second language.*

<M2> *We are interested in discovering whether...*(AL29)

(4) <M3> *This study used a stimulated recall approach to identify the content of inner thought categories of eight learning advisors-in-action during individual advising sessions. <M3> A grounded theory analysis of 800 thought units revealed <M4> a hierarchical structure ...*(AL42)

Az AL korpuszban szintén találunk példát két olyan absztraktra, ahol hosszú, többmondatos bevezető után a célok éppen hogy csak jelölve vannak. Itt a szerzők visszautalnak a bevezetőben tárgyalt kutatási ürre (*to address these issues; to fill these gaps*), majd ezt követi a *Módszerek* mozzanat (lásd az 5. példát; a kiemelések sajátjaim). Ezzel hangsúlyosabbá teszik a saját kutatásukat, kiemelik annak fontosságát, és valószínűleg jobban felkeltik az olvasó figyelmét, mintha egy arányosabb absztraktszerkezetet választottak volna.

(5) <M1>*In 1988 and 2006, Applied Linguistics published Low's and Littlemore and Low's seminal theoretical accounts of second language (L2) metaphoric competence (MC). Meanwhile, attempts to elicit metaphor-related skills/competences have been mixed. Instrumentation has varied in reliability, been limited in scope, and used arguably flawed reliability coefficients (McNeish 2018). Factor analysis, used in first language (L1) MC and other areas of L2 research (Loewen et al. 2009; Plonsky and Gonulal 2015), has not been used to explore latent L2 MC variables. <M2> **To address these issues,** <M3> *we developed a large battery of MC tests to elicit Low/Littlemore's constructs, administering it to 112 L1 Mandarin speakers of L2 English and 31 L1 English speakers...*(AL50)*

Ahogy arra számos korábbi tanulmány is rámutatott, a meglévő négy- vagy ötmozzanatos modellek ellenére eltérések lehetnek a mozzanatok elrendezését és gyakoriságát illetően. Ezek az eltérések összefügghetnek a tudományággal, de a vizsgált témával, a folyóirat elvárásaival, a szerző publikálási tapasztalatával és természetesen az egyéni írói stílusával is. Az eredmények alapján elmondható, hogy mindkét korpuszon belül találunk jelentős strukturális eltéréseket, tehát nem mondható ki, hogy egyik vagy másik választás az üdvözítő, vagy mindenképpen mintaként követendő. Az azonban bizonyosan kijelenthető, hogy a három mozzanathoz kevesebbet felhasználó absztrakt figyelemfelkeltésnek hasznos lehet, de önmagában nem ad teljes képet egy empirikus cikkről. Van olyan tudományterület, ahol ez hatékony vagy szokványos lehet vagy például konferencia-jelentkezéskor is elfogadott, amikor még nincsenek végleges eredmények. Az ebből készült későbbi cikknél azonban mindenképpen szükséges az átdolgozás (lásd pl. Doró, 2013). Ugyanakkor számos tudományterületen (pl. az egészség tudományokban) strukturált absztraktokat kérnek mind konferenciajelentkezéskor, mind kéziratok esetében. Ezek egységes felépítést és könnyebben átlátható tartalmat adnak az absztraktoknak. Ez a következő években elérheti a nyelvészetet is. Ahogy Okamura és Shaw (2014) rámutatnak, a nagy folyóiratkiadók törekednek a folyóirataik közötti egységes követelményekre, ami azt

jelenti, hogy a megadott absztraktkövetelmények nem feltétlenül fogják tükrözni a tudományági szokásokat, sokkal inkább a kiadókon belüli intézményi döntéseket.

#### 4. 3. Leggyakoribb igék

A lenti táblázatok a három vizsgált retorikai mozzanatban (*Célok*, *Módszerek* és *Eredmények*) használt tíz leggyakoribb igét gyűjtik össze. Kiemelésre kerültek azok, amelyek mind a két korpusz listáiban szerepelnek. A *be* létige általános dominanciáján túl (mely sok esetben a passzív igealakok létrehozásához szükséges) többségében az egyes mozzanatok funkcióihoz igazodó igéket látunk. A *Célok* esetében a kutatás, vizsgálatra utaló igék a dominánsak (*investigate*, *examine*, *explore*), ezen túl az elkészült kutatás bemutatására utalnak gyakran a szerzők (*present*, *use*, *provide*) vagy a kutatás fókuszára, céljára (*focus*, *aim*, *learn*). Érdekes látnunk, hogy míg az *analyze* ige a magyar korpuszban a második leggyakoribb ige, ez a nemzetközi korpuszban sokkal kisebb esetszámmal fordul elő, és inkább a *Módszerek* mozzanatban használatos. Az is érdekes, hogy több magyar szerző a hipotéziseket emeli ki az *expect* (vár) igével, míg az *Applied Linguistics* szerzői közül többen a hozzátett szerzői értéket hangsúlyozzák az *argue* (érvel) igén keresztül (lásd 6. táblázat). Ez egybecseng Van Bonn és Swales (2007) érvelésével, mely szerint a francia és brit angol absztraktok között az egyik különbség, hogy a francia szerzők az mutatják be, hogy a kutatásuk mit próbál meg elvégezni, míg az angol absztraktok a miértekre kérdeznak rá és érvelnek. Az ANY korpusz *Célok* mozzanatában az *age* (örekszik, valamilyen életkort megél) ige minden esetben 3. alakban, jelzős szerkezetként fordult elő, a résztvevők életkorát jelölve (pl. *school-aged students*, *aged between 60-66*).

6. táblázat. A célok mozzanatban található 10-10 leggyakoribb ige

Alkalmazott Nyelvtudomány Célok mozzanat igéi		Applied Linguistics Célok mozzanat igéi	
<b>be</b>	52	be	27
analyze	13	investigate	16
<b>investigate</b>	9	examine	10
age	8	use	8
<b>examine</b>	7	explore	6
<b>present</b>	6	consider	6
focus	5	learn	5
aim	4	present	5
expect	4	argue	4
reflect	3	provide	4

A *Módszerek* mozzanatban is a *be* létige dominanciájával találkozunk, az ANY korpuszban közel dupla annyi előfordulással (lásd 7. táblázat). Ezen túl négy közös igét látunk a két tízes listában (*use*, *examine*, *measure*, *analyze*), amelyek mind az elvégzett elemzésekre utalnak, más gyakran használt igékhez hasonlóan (*compare*, *ask*, *assess*, *collect*, *draw*). A nemzetközi korpusz *speak* (beszél) igéje a résztvevők nyelvhasználatára utal. A *base* (alapul) ige főigeként

állítmányban nem, hanem a *based on*, illetve a *corpus-based*, *task-based*, *Latin-based* típusú jelzős szerkezetekben fordul elő mindkét korpuszban.

7. táblázat. A Módszerek mozzanatban található 10-10 leggyakoribb ige

Alkalmazott Nyelvtudomány Módszerek mozzanat igéi		Applied Linguistics Módszerek mozzanat igéi	
be	77	be	46
use	14	use	15
base	10	speak	7
have	8	examine	6
examine	7	analyze	5
measure	6	base	5
analyze	8	draw	5
compare	5	measure	4
play	4	assess	4
ask	4	collect	4

Az *Eredmények* mozzanat legtöbbször használt igéit a 8. táblázat foglalja össze. Leggyakrabban az eredmények általános bemutatásával indítanak a szerzők, amely sokszor a „*results show*” összetétellel és annak variánsaival valósul meg (lásd 8. táblázat). Így nem meglepő, hogy a léte után mindkét korpuszban a *show* (mutat) ige dominál, a nemzetközi korpuszban ennek több alternatíváját látjuk a *reveal*, *indicate* és *demonstrate* igékben (lásd 6-8. példa). Ezek mindegyike előfordul a magyar korpuszban is, de sokkal kisebb esetszámmal.

(6) *Multilevel analyses revealed differential effects for both interventions.* (AL 22)

(7) *Findings indicated an overall improvement of pragmatic competence over the period of eight weeks.*(AL 34)

(8) *The results demonstrate that spoken and written modalities are influenced differently by anxiety...*(AL 12)

8. táblázat. Az Eredmények mozzanatban található 10-10 leggyakoribb ige

Alkalmazott Nyelvtudomány Eredmények mozzanat igéi		Applied Linguistics Eredmények mozzanat igéi	
be	89	be	67
show	25	show	17
have	9	find	9
confirm	8	reveal	8
find	8	indicate	7
produce	7	learn	6
base	6	demonstrate	6
tend	5	use	5

appear	5	do	5
lengthen	4	speak	4

Szintén gyakori a *find* (talál) ige passzív szerkezetként történő használata (lásd 9. és 10. példa), és előfordul még a többes számú *we* névmású alany után (lásd 11. és 12. példa).

(9) *The specific interventions **were found** to be considerably more effective than the implicit intervention.* (AL15)

(10) *Some differences between male and female writers **were found**.* (ANY40).

(11) ***We found** a correlation of overt use of pragmatic markers ...* (ANY 33)

(12) ***We also found** that besides the well-known and frequently quoted influential factors in word recognition, there are some others, which may produce astonishing results.* (AL23)

Érdekes konkordanciával megvizsgálni a *confirm* (igazol, megerősít) és a *produce* (eredményez) igéket is, amelyek a lista élén szerepelnek a magyar korpuszban, de kevésbé gyakoriak a nemzetköziben. A *confirm* ige egyáltalán nem szerepel az *Applied Linguistics Eredmények* alkorpuszában, a *Módszerekben* is csak egyszer (13. példa). A magyar korpuszban viszont nyolcszor is előfordul, ahol előzetes elvárásokat vagy trendeket igazolnak az eredmények (14, 15. és 16. példa).

(13) *In order to **confirm the reliability** of T-unit length as a measure for Chinese... (AL45)*

(14) *The results of the research partly **confirm the trends** revealed in previous studies ... (ANY5)*

(15) *The results **confirmed our preliminary assumption**... (ANY 36)*

(16) *Results did not **confirm any expected difference**... (ANY49)*

A *produce* (produkál, létrehoz) ige a magyar korpuszban egy kivétellel beszédprodukcóra utal, egy esetben pedig a létrehozott eredményekre (17. és 18. példa).

(17) *... older children **produce less disfluencies** and oral reading errors than younger children ... (ANY27)*

(18) *We also found that besides the well-known and frequently quoted influential factors in word recognition, there are some others, which may **produce astonishing results**.* (ANY4)

#### 4. 4. Igeidők és módbeli segédigék használata

A 9. táblázat az igehasználát különböző mintázatait mutatja a két alkorpuszban és a három mozzanatban. A gyakorisági számítások az egyszerű jelen idő dominanciáját mutatják, amelyet az egyszerű múlt követ. Mozzanatokra lebontva a tendenciák nagyon hasonlóak a két korpuszban, és általánosságban egyeznek Jiang és Hyland (2022) azon észrevételével, hogy a jelen idő az absztraktok elején a gyakoribb a tanulmány fontosságának a kijelöléséhez, míg a múlt idő a módszerek és eredmények leírásában elterjedt. A *Célok* mozzanat esetében szinte



azonos arányokat találunk a magyar és a nemzetközi absztraktokban. Erősen dominál a jelen idő 90 és 89%-kal, emellett hét, illetve nyolc módbeli segédige fordul elő. Ez viszont nem egyezik Dos Santos (1996) eredményeivel, aki 19% jelen, 35% múlt, és 43% módbeli segédige használatot datált a *Célok*-nál. A szerző rámutat, hogy a múlt idő és a módbeli segédigék alkalmazása a feltételezéseket és általában az óvatos megfogalmazást segíthetik.

A célokat kijelölő leggyakoribb szerkezetre a 19. és 20. példa mutat jelen és múlt idejű változatot. A két igeidő választása egyenértékűnek is tűnhet, azonban a jelen általános érvényűvé teszi a kutatás és a megírt tanulmány céljait, míg a múlt idő hangsúlyozza, hogy egy elvégzett elemzésről van szó, nem annyira a megírt tanulmányra is vonatkozó célokról. A 20. példához hasonló múlt idejű (*the aim of the study was to*) szerkezettel azonban csak egyszer találkozunk az ANY korpuszban és kétszer az AL korpuszban.

(19) *The aim of this study is to investigate the difference between...* (ANY1)

(20) *The aim of this study was to investigate two disfluency phenomena in the spontaneous speech of Hungarian learners of Spanish...* (ANY32)

9. táblázat. Jelen és múlt idejű igeidők száma és aránya valamint a módbeli segédigék száma a három leggyakoribb mozzanatban

Igeidők és modálisok	ANY célok	AL célok	ANY módszerek	AL módszerek	ANY eredmények	AL eredmények
Egyszerű múlt	11(10%)	12(11%)	62 (53%)	50 (49%)	53 (31%)	59 (38%)
Egyszerű jelen	94 (85%)	91 (85%)	54 (46%)	52 (51%)	117 (68%)	96 (62%)
Befejezett jelen	2 (2%)	3 (3%)	1 (1%)	0	3 (2%)	0
Folyamatos jelen	2 (2%)	1 (1%)	1 (1%)	0	0	0
Modális segédigék	7	8	5	0	13	5

ANY = Alkalmazott nyelvtudomány, AL = Applied Linguistics

Ha az egyszerű jelenen és az egyszerű múlton kívüli megoldásokra tekintünk, a befejezett jelen az első szembevető választás. A számszerűsített adatok azt sugallják, hogy itt sincs jelentős eltérés a két korpusz között, azonban érdemes a konkrét példákat szemügyre vennünk. Az AL korpuszban két szerző használ befejezett jelent, mindketten előző kutatások eredményeire utalnak vele (21. és 22. példa).

(21) *A T-unit, which has been found the most satisfactory unit of analysis for measuring L2 development in English* (AL1)

(22) *This article argues that ... the methods of data collection, treatment, and analysis in word association tests **have hitherto been inconsistent**. We demonstrate that this inconsistency **has resulted** from inadequate control, in previous studies. (AL10)*

A magyar szerzők közül is ketten választottak a célok leírásához befejezett jelent, azonban míg a 23. példa korábbi tanulmányokra utal, addig a 24. példában nem indokolt a választás, szokványosabb az elvégzett kutatásra egyszerű múlttal utalni. Ez a választás itt lehet a szerző általános angol nyelvi ismereteinek az eredménye, mivel a mindennapokban a befejezett jelent használjuk a pontos idővel nem jelölt múltbeli cselekvésekre. A 23. példa önmagában nézve kódolható lehetne *Bevezetés* mozzanatként is mivel háttérinformációt ad, elhelyezi a tanulmányt a korábbi kutatásokhoz képest és hangsúlyozza a kutatási úrt, amit az adott tanulmány betölteni szeretne. A *Bevezetés* mozzanatra különösen jellemző a befejezett jelen használata, Tseng (2011) például hangsúlyozza, hogy az általa vizsgált korpuszban a jelen időt használó *Bevezetés* mozzanatok több mint fele befejezett jelen alkalmazott.

(23) *To the authors' knowledge, this question **has not yet been studied** before. (ANY46)*

(24) *In this paper the current situation of native peoples in Dudinka **has been analysed**, in the light of the research questions. (ANY45)*

A folyamatos jelen a vizsgált anyagban összesen négyszer fordul elő. Az egyetlen AL korpusz példa a célok leírásában jelenik meg, ahol valóban egy időben elnyúló folyamatot hangsúlyoz (25. példa). Ezzel szemben az ANYkorpusz három példája a szerzőt teszi meg alanynak, aki éppen a kutatást végzi. Ez szokatlan megoldás, amire nem találunk példát sem az AL korpuszban, sem más tanulmányban. Nagy valószínűséggel „*a tanulmányomban arra keresem a választ*” magyar bevezető tagmondat tükörfordításának az eredménye lehet ez a 26. példában, melyben egy általános angol nyelvhasználatból átemelt folyamatos jelen tartott indokoltnak a szerző. Ezzel azonban inkább kollokvialisnak hat a szövege. Hasonló hatást kelt néhány mondattal később ugyanezen szerző megjegyzése a *Módszerek* mozzanatban arról, hogy az adott tanulmányban eredményeket publikál (lásd 27. példa). Az ezek kihagyásával felszabaduló szószámot inkább a módszerek részletesebb leírására lehetett volna fordítani.

(25) *The study considers whether the companies acknowledge their reputation as villains in the global climate narrative, or whether **they are discursively shying away** from this script. (AL58)*

(26) *In my research **I am looking for** an answer regarding how secondary school-aged children's language attitude ... (AL8)*

(27) ***I am publishing** the results of my research's questionnaire survey in this study ... (AL8)*

A *Módszerek* és *Eredmények* mozzanatokban az egyszerű jelen és az egyszerű múlt együttesen az AL alkorpuszok ragozott igéinek 100%-át adják, és az ANY alkorpuszaiban is dominál a két fő igeidő. Ez összességében hasonlít korábbi tanulmányok megállapításaihoz, azonban a két fő igeidő arányában jelentős eltérést találunk: Dos Santos (1996) például a *Módszereknél* 96%-os, míg az *Eredményeknél* 78%-os egyszerű múlt idő dominanciát talált. Ezzel szemben a jelen

kutatásban körülbelül a múlt idő a ragozott igék felét teszik ki a *Módszereknél* és közel egyharmadát az *Eredményeknél*. Tseng (2011) teljesen egymásnak ellentmondó trendeket talált az általa vizsgált három alkalmazott nyelvészeti folyóirat között, bár eredményeit erősen befolyásolhatták a kismintás, csupán 10 absztraktból álló korpuszai. A szerző nem tudott pontos okokat megnevezni arra vonatkozóan, hogy mi lehet ennek a nagy különbségnek az oka. Megpróbálta az anyanyelviség oldaláról közelíteni meg a kérdést, de arra a következtetésre jutott, hogy az anyanyelvi és nem anyanyelvi szerzők között minimális a különbség, ráadásul folyóiratonként és mozzanatonként eltérő eredményeket kapott. Ugyanakkor megállapíthatjuk, hogy az áttekintett kutatások közül Tseng *Applied Linguistics* folyóíratra vonatkozó eredményei hasonlítanak leginkább a jelen kutatás mindkét korpuszához.

A *Módszerek* és *Célok* mozzanatokban a fenti folyamatos jelenben álló mondaton túl (27. példa) csak néhány befejezett jelen idejű alakkal találkozunk. Érdemes ezeket a példákat is áttekinteni, hogy lássuk lehetséges funkciójukat. A 28 és 29. példa is azt sugallja, hogy a szerző az általános angol nyelvhasználati szabályokat ültette át a tudományos angolra, mely szerint pontos időpontra való utalás hiányában befejezett jelentet használunk, azonban a tudományos angol itt egyszerű múltat kívánna meg.

(28) *In order to detect these characteristics, we have carried out a quantitative analysis,...* (ANY50)

(29) *The results have confirmed our preliminary assumption as the ratio of grammatical mistakes ...* (ANY25)

Az igeidőkön túl a módbeli segédigék használata is egy olyan kulcsfontosságú kérdés, amely befolyásolja, hogy a közvetített tartalmat az olvasó hogyan értelmezi. Funkciójukat tekintve leginkább a bizonytalanság (angolul *hedging*) kifejezésére vagy a jövő időre utalásra szolgálnak (Salager-Meyer, 1992, Kwary, Kirana & Artha, 2017, Tseng, 2011). Karpanov (2022) AL korpuszában a *can* módbeli segédige társult a *suggest* (javasol) igével; ezek együtt még jobban utalnak az óvatos megfogalmazásra, ami viszont a jelen AL korpuszban nem található meg. A módbeli segédigék közül Karpanov az öt leggyakoribbnak a következőket találta: *can*, *may*, *will*, *could* és *might*. Sajnos a szerző mozzanatok szerint nem tárgyalja a módbeli segédigékszerepét.

A *can* esetében azt találjuk, hogy a két korpuszban ez a leggyakoribb módbeli segédige, összesen tizennyolcszor szerepel a célok vagy az eredmények leírásában (ez megegyezik a korábbi tanulmányokban publikált gyakorisági adatokkal, lásd pl. Kwary, Kirana & Artha, 2017). Ebből négyszer az ANY és háromszor az AL *Célokban*, valamint nyolcszor az ANY és háromszor az AL *Eredményekben* olvashatjuk őket. Mindkét korpuszban előfordul a szakirodalomban is publikált bizonytalansági funkció (lásd 30 és 31. példa). Ezen kívül képességet és lehetőséget is kifejezhet a *can* segédige, amit a 32. példa illusztrál. Ennek egyik változata az olvasót is bevonó, többes szám első személyű névmást használó kijelentések, elsősorban az eredmények értékelésében (lásd 33. példa). A *can* múlt idejű alakja, a *could* ötször szerepel, de csak az ANY korpuszban, háromszor a *Célokban*, kétszer az *Eredményeknél*, a bizonytalanságot és képességet kifejező jelentésben.

(30) *F3 formant values than Chinese speakers, which can be attributed to higher absolute F2 values in Hungarian speakers.* (ANY20)

(31) *...this study examines dynamic origins and functions of multiple responses to teachers initiations, which **can** be considered as an intrinsic type of pedagogical interaction in ESL and EFL classroom talk ... (AL7)*

(32) *In this study, we argue that such similarity **can** inform the machine learning prediction of linguistic and cross-cultural diversity (AL50)*

(33) *Thus we **can** conclude that Hungarians produced ... (ANY20)*

A *may* módbeli segédigével összesen kilencszer találkozunk, az ANY korpuszban egyszer a *Célok*nál, egyszer a *Módszerek*nél és háromszor az *Eredmények*nél, míg az AL korpuszban egyszer a *Célok*nál és háromszor az *Eredmények*nél. A *can* mellett a *may* feladata is a bizonytalansági funkció, az eredmények lehetséges értelmezésének a jelölése (lásd 34. és 35. példa), amit Hyland (2000b) is kiemel.

(34) *Results revealed that tonal pattern distributions were significantly different between sentence proverbs and matched control sentences, with proverbs generally showing a 'less stress' tonal pattern, which **may be interpreted** as proverb specific. (AL 27)*

(35) *We also found that besides the well-known and frequently quoted influential factors in word recognition, there are some others, which **may produce** astonishing results. (ANY4)*

A *will* módbeli segédigét háromszor használták: egy-egy szerző a két korpuszból a hipotézisek és egy ANY absztrakt a módszerek megfogalmazásához. Ez utóbbi a tanulmány készítésének lépéseit hangsúlyozza és jövő idejű cselekményként jelöli meg a konklúzió levonását (lásd 36. és 37. példa). Min (2010) is talált néhány hasonló jövő idejű célmeghatározást és ő is úgy véli, hogy ez szokatlan megoldás, mivel azt sugallja, hogy a cikket egy, az absztrakt megírásának pillanatában még befejezetlen munkaként lehet értelmezni. Ezzel kapcsolatban érdemes megjegyeznünk, hogy egy másik szerző a teljes kutatását jövő idejű perspektívába helyezte a *going to* szerkezet használatával (lásd 38. példa). Ez a jövőidejűség inkább jellemző szóbeli konferencia előadás bevezetőjére, de nem anyanyelvi szerzőknél megtalálható bevezetőkben is.

(36) *Our hypothesis was that the frequency, the types and the correction of grammatical mistakes is strongly influenced by the age of the children and the grammatical stage of the child's grammatical awareness. Consequently **there will be differences** among the grammatical mistakes both in quantitative and qualitative aspects in different periods of the mother tongue acquisition process. (ANY28)*

(37) *The abovementioned conclusions **will be drawn** after examining the most critical phonetic and phonological differences between... (ANY52)*

(38) ***I am going to analyze** whether changes in society and in economy, connected to the change of regime in Hungary in the 1990's, were reflected in word association databases. (ANY32)*

A *should* segédige háromszor szerepel, egyszer az ANY és kétszer az AL korpuszban, viszont a szakirodalomban publikált erős bizonytalansági funkció mellett (39. példa) inkább nyomatékossásként (40. példa) is, amit a *suggest* (javasol) és az *argue* (érvel) ige választása is megkülönböztet. Az *argue* és a *should* együtt a 40. példában inkább erősíti a tanulmány fő

célját, minthogy tompítaná azt. Karpanov (2022) tanulmányával ellentétben a *might*, a *must*, a *shall* vagy a *would* segédige nem található meg egyik korpuszban sem.

(39) *It is suggested that the stage of familiarity of speakers **should be regarded** as one key factor when examining language in interaction and understanding.* (AL19)

(40) *This study argues that an organic complexity measure **should avoid** the assumption of clause subordination and instead consider the typological features of the target language.* (AL53)

Ahogy korábbi kutatások is rámutatnak, a nyelvi megfogalmazás sokat finomíthat az adott retorikai egység funkcióján és az üzenet pontosságán. Mind az igeválasztás, mind az igeidők orientálhatják az olvasót azzal kapcsolatban, hogy a szerző hogyan helyezi el a tanulmányát a korábbi kutatásokhoz képest, és milyen módon értelmezi az adatait.

## 5. Összefoglalás és kitekintés

A jelen tanulmány két folyóiratból nyert korpuszon vizsgálta az alkalmazott nyelvészeti folyóiratokban megjelent absztraktok retorikai felépítését és igehasználatát. A szerkezeti felépítés tekintetében mindkét folyóirat összefoglalói variabilitást mutatnak mind a felhasznált mozzanatok számában, mind azok sorrendiségében. A mozzanatok előfordulása eltérő arányú a két korpuszban, de szöveglefedettségük korpuszszinten hasonló a *Célok*, a *Módszerek* és az *Eredmények* esetében. Összességben elmondható, hogy a magyar szerzők angol összefoglalóinak retorikai szerkezete megfelel az angol tudományos diskurzusközösség normáin alapuló nemzetközi konvencióknak. Ugyanakkor a magyar szerzőknél nagyobb hangsúly kerül a bevezetésre és célokra, de kevesebb az értelmezésre, kitekintésre, mint a nemzetközi korpuszban. Az ANY összefoglalói lineárisabbak, mint az AL-é, amelyek között mondatszerkezetileg és retorikai szerkezetben is nagyobb kreativitást látunk. A magyar nyelvészek által készített absztraktok retorikailag kevésbé összetettek, mint az angol absztraktok. Hasonló konklúzióra jutott Diani (2014) is, aki olasz nyelvészek olaszul írt absztraktjait vizsgálta. Diani szerint ezek a különbségek több szociokulturális tényezővel magyarázhatók, mint például az eltérő kulturális minták, illetve a tudományos íráskultúra hatása (vagy annak hiánya). Valószínűleg ehhez még hozzájárul az angol nyelvtudás, a publikációs tapasztalat és az absztraktírásra fordított figyelem is.

Igehasználat tekintetében is sok hasonlóságot látunk a két korpusz között. A főbb igeidők aránya közel azonos, és csak néhány szerző alkalmazott szokatlan választást vagy jelölt az adott igeidővel vagy módbeli segédigével mást, mint amit egy tapasztaltabb vagy anyanyelvi szerző tenne. A fenti példák azt mutatják, hogy az általános és tudományos angol nyelvhasználat többször összecúsúzik, ami egy szóbeli prezentációban elfogadható, de egy tanulmányban értelmezési problémákhoz vagy negatív megítéléshez is vezethet.

A két felhasznált folyóirat és a korpusz mérete olyan korlátokat jelent, amelyeket számos más szerző is leírt. Ahogy Swales (2004) és Van Bonn és Swales (2007) rámutatnak, bár gyakori a kutatásokban, kétséges, hogy a „nagy” angol nyelvű folyóiratok és a más nyelven publikáló „kicsik” között mennyire jó választás összehasonlításokat végezni. Az elfogadott és visszautatított kéziratok aránya, a szerkesztői gyakorlatok és az olvasóközönségük is jelentősen eltérnek, ami befolyásolja, hogy mi kerül publikálásra, de azt is, ahogy a szerzők az elképzelt

leendő olvasóiknak írnak. Hasonló dilemmákba futunk bele kevésbé tekintélyes angol nyelvű nyelvészeti folyóirat kiválasztásánál is. Folyóiratok között jelentős eltéréseket találtak korábbi tanulmányok, az *Applied Linguistics* ugyanakkor gyakran szerepel hasonló kutatásokban, így a korábbi retorikai vagy nyelvi eredmények összevethetőek voltak a saját AL korpuszom eredményeivel.

Egyetlen folyóirat esetében sem látunk bele teljes mértékben, hogy a szerkesztők vagy bírálók milyen mértékben szerkesztik át nyelvileg a beküldött absztraktokat. Az azonban valószínű, hogy nemzetközi publikálás esetén egy angol absztrakt nagyobb hatással van a beválasztásra, mint egy részben helyi kutatói közösségnek publikáló folyóirathoz beküldött angol kiegészítő absztrakt. Egy kisebb nyelven írt tanulmányt biztosan a tanulmány nyelvén, az adott szűkebb, jelen esetben magyar kutatói közösség tagjai bírálják el, akik toleránsabbak a szerző angoljával szemben. Itt az absztrakt helyett a teljes művön van bírálatkor a hangsúly, kevésbé valószínű az absztrakt alapján történő azonnali szűrés, és nagyobb szabadságot kap a szerző az absztrakttal vagy annak módosításával kapcsolatban.

Az absztraktok olvasása közben világossá vált, hogy a módszerek és eredmények sokszor sematikusak. Több a leíró jellegű vagy az empirikus kutatáshoz képest hiányosnak tűnő összefoglaló, amely így nem valósítja meg az angol nyelvű összefoglaló információs célját. A további kutatási irányokat tekintve érdemes lesz kibővített nyelvi és tartalmi elemzést is végezni a korpuszon.

A párhuzamos magyar-angol absztraktok értékes forrást jelenthetnek az eltérő nyelvi, kulturális valamint a magyar tudományos írás gyakorlatából következő okok feltárására is. Szerzők bevonásával írásstratégiai kérdésekre is pontosabb választ kaphatunk. Egy későbbi tanulmányban érdemes lesz azt is megvizsgálni, hogy a hasonló kutatásból származó korpuszadatokat hogyan lehet beépíteni doktoranduszoknak és kutatóknak szánt tudományos íráskészség oktatásba.

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## English-language title and abstract

### Rhetorical structure and verb use in English abstracts: A comparison of Hungarian and international linguistics articles

In recent years, there has been a wealth of studies on abstracts published in different disciplines, languages and countries. Most of these have been concerned with the rhetorical construction of abstracts, but increasing attention is being paid to their linguistic realization, including the use of verbs. However, the analysis of English-language abstracts published by Hungarian authors is very limited. This study analyzes English-language abstracts published in two renowned applied linguistics journals, the Hungarian *Alkalmazott Nyelvtudomány* and *Applied Linguistics*. Two times 50 abstracts have been chosen from the period between 2013 and 2022. The Hungarian abstract corpus contains English abstracts

published alongside Hungarian-language studies. These abstracts should make the published works comprehensible to non-Hungarian speakers and understandable on their own, so their formulation is particularly important. The study first reviews the rhetorical structures and then examines the use of verbs, verb tenses and modal auxiliaries separately in the three most frequently occurring rhetorical moves (aims, methods and results). The results show that the majority of Hungarian authors use structural solutions similar to the English reference corpus, although they have fewer moves and a more linear structure. The proportion of present and past tenses is almost identical in the two corpora, with the present tense dominating. Some of the Hungarian authors use individual solutions, which tend to have a colloquial effect. I hope that this research will serve as a useful reference for Hungarian researchers to improve their academic writing awareness.

# Strategy use and self-perception in L2 academic reading: Measuring English majors' reading strategy using the think- aloud protocol

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This article reports the main results of a think-aloud protocol study inquiring into reading strategy use and self-perception of first-year English studies and teacher trainee majors when reading academic texts in their L2. The verbal protocol was combined with a short follow-up interview and the SORS test to identify the findings and highlight any possible correlations between the three datasets. The results suggest that students have a general preference for metacognitive strategies, and the findings appear to show a certain degree of consistency across different types of data. The most frequently used and reported strategies included guessing from context, re-reading, use of external resources, and self-evaluation.

**Keywords:** L2 academic reading, reading strategies, metacognition, verbal protocol, SORS test

## 1. Introduction<sup>2</sup>

With the globalization of scientific research and the predominance of Anglo-American academic culture, the ability to efficiently read and compose academic texts in English has become a widespread expectation in higher education. It is not uncommon for English-language study programs in different disciplines to offer courses in academic reading and writing. At the University of Szeged, students enrolled in the English and American Studies and the Teacher Training programs must complete several courses focusing on the development of academic skills. One such course is the Reading Skills seminar, which is meant to equip first-year students with the principal skills and strategies they will need in their academic career. In fact, the recent redesigning of this course motivated the research project presented in the study.

Although academic reading in L2 English is a widely researched topic in international applied linguistic research, it has received relatively little attention in Hungarian higher education. The available data (Mónos, 2005; Szűcs, 2017) suggest that students entering tertiary education do not generally tend to have a well-developed repertoire of strategies when it comes to reading in their L2. Adopting a comparative approach, some recent studies have provided valuable information about students' strategy use and self-perception in both their L1 and L2

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(Tary & Molnár, 2022; Tary, 2023). The main objective of the project was to contribute to and expand the existing body of L2 English reading strategies used by speakers of L1 Hungarian by exploring EFL majors' strategy use and self-perception in the process of reading academic texts in English. The participants (n=12) were first-year BA and teacher-trainee students. The research design consisted of three major components: a semi-retrospective think-aloud protocol (TAP, also referred to as “verbal protocols” in the text), a structured follow-up interview (“interviews”), and the SORS questionnaire, a version of the MARSII survey adapted for L2 readers (Mokhtari & Sheorey, 2002).

## 2. Literature Review

### 2.1 A brief summary of research on reading ability

First, it is imperative to clarify that strategy research tends to adopt a process-oriented reading view. The question of whether reading should be conceptualized as a process or a product (i.e., the result of the reading process) constitutes a principal area of interest in the field to this day. Alderson (2001, pp. 3–7) defines process as the interaction between reader and text, which is essentially dynamic and, to a great extent, individual in nature. Yamashita provided a similar definition (2002, p. 272). As Alderson puts it, it is the *how* of the reading activity and not the end result that is in the focus of process-oriented approaches (Alderson, 2001, pp. 3–7). The reading-as-a-process perspective is supported by a growing body of findings in cognitive psychology, suggesting the interplay of various mental operations in the process of reading. A near-exhaustive list of the cognitive skills and systems that presumably shape and regulate the reading process is offered by Grabe and Yamashita (2022), who provide a comprehensive overview of the field from its beginning to its current state. These include implicit and explicit learning, automaticity, speed of information uptake, and the role of contextual processing in L2 reading (Grabe & Yamashita, 2022, p. 85). While all of these elements are essential for reading ability, the literature emphasizes the centrality of working memory (Lau & Chan, 2003; Grabe & Stoller, 2013; Grabe & Yamashita, 2022) and the simultaneous functioning of bottom-up and top-down processes during reading (An, 2013; Grabe & Yamashita, 2022). It has been suggested in the research that weaker readers tend to prefer bottom-up strategies, while more proficient readers employ top-down strategies to a substantially greater extent (see, for example, Block, 1986; Karbalaei, 2010). Theoretical work in the field has laid down the foundations for creating a systematic approach to studying L2 reading in a pedagogical context. The early categorizations of the components of reading ability in foreign languages include Davis (1968) and Munby (1978). While it seems that the discipline is becoming increasingly open to adopting a holistic attitude towards reading ability, as opposed to the conventional multidimensional view that promotes separating subskills along the lines of clear-cut categories (see Liu 2010), the practice of (partial) divisions still prevails. A not too recent yet still oft-cited categorization is found in Grabe (1991, p. 379), which comprises six subsets of skills that characterize good readers, quoted verbatim below.

- (1) Automatic recognition skills;
- (2) Vocabulary and structural knowledge;
- (3) Formal discourse structure knowledge;

- (4) Content/world background knowledge;
- (5) Synthesis and evaluation skills/strategies;
- (6) Metacognitive knowledge and skills monitoring.

These six areas of skills show considerable overlap with the relevant findings of cognitive psychology (see Grabe & Stoller, 2013; Grabe & Yamashita, 2022 above), and, as it will be evidenced in the following subsections, they have fundamentally structured mainstream classifications of reading strategy use.

## 2.2 Key concepts in language learning strategy research

The creation of systematic learner strategy definitions and taxonomies has been a priority both in education sciences and language pedagogy since the 1980s, with the unification of taxonomies being a major objective that still has not been completely realized (Doró, Habók & Magyar, 2018, p. 6). Some of the principal questions included strategy awareness, the nature of mental processes influencing strategy use, and the overall teachability of learning strategies (Doró, Habók & Magyar, 2018, p. 6). Rubin's 1975 work on the concept of "the good language learner" (GLL) is considered by many to mark the beginning of L2 strategy research scholarship (Rose et al. 2018, p. 151).

Rubin defined learning strategies as "the techniques or devices which a learner may use to acquire knowledge" (1975, p. 43). Another broad definition of learning strategies, formulated by Weinstein and Mayer is as follows: "[Learning strategies] affect the learner's motivational or affective state, or the way in which the learner selects, acquires, organizes, or integrates new knowledge" (1986, p. 315, as cited in O'Malley & Chamot, 1990, p. 43).

Gu (2012) considers the principal functions of learning strategies to include the facilitation and acceleration of learning processes through better processing and retention of information in the completion of specific learning-promotive tasks (Gu 2012, pp. 332–333). These definitions suggest that the primary function of learning strategies is to facilitate knowledge transfer and consolidation of knowledge (O'Malley & Chamot, 1990, p. 43).

Different strategies serve different learning purposes, which justifies the need for taxonomical division. In their foundational work on learning strategies, O'Malley and Chamot (1990, pp. 44–45) distinguish between three major categories, namely, metacognitive, cognitive and social/affective. Metacognitive learning strategies include "the planning, monitoring and evaluation of the learning activity" (O'Malley & Chamot, 1990, pp. 44–45), implying the existence of conscious effort on the part of the learner in the learning process. Research on the relationship between metacognition and learning goes back to Flavell (1979). Cognitive learning strategies manipulate new information directly. Social/affective strategies relate to negotiating meaning in instances of interpersonal communication or controlling one's emotional reactions in a given situation (Flavell, 1979).

Narrowing the scope of educational strategy research to foreign language pedagogy, Oxford (1990, p. 9) summarized the features of language learning strategies in a 12-item list. It is stated that these strategies should be "problem-oriented" and that they are considered "specific actions" that the learner takes to resolve the learning problem. Oxford's taxonomy of strategies can be broken down into two major categories, direct and indirect, with three groups of strategies in each. The direct category includes cognitive, memory and compensation

strategies, while the indirect category comprises metacognitive, social and affective strategies (Oxford, 1990, pp. 57–59; pp. 136–137). Oxford justifies the rationale for creating two main categories by attributing different functions to them in the learning process: while direct strategies are employed when “working with the language itself in a variety of specific tasks and situations” (Oxford 1990, p. 14), the general purpose of indirect strategies is to coordinate and control the learning situation (p. 15).

Detailed overviews of learning strategy research up to the early and the mid-2010s were provided by Gu (2012) and Hu (2016), respectively. In addition to providing a valuable synthesis of taxonomies, both authors draw attention to the apparent definitional issues in the field, which partly arise from the inherent impossibility of directly observing mental processes. One such issue concerns the difficulty of establishing clear-cut definitions for ‘strategy’ and ‘skill’ (see Afflerbach, Pearson & Paris, 2008).

Adopting a novel perspective on learner strategies, notable academic work on self-regulated learning has emphasized the role of the learner as a controller of their own learning process, thereby attributing a greater role to conscious decision-making and self-monitoring and redirecting the focus from pre-defined strategies to learner autonomy (Dörnyei, 2005, p. 191; see also Rose et al., 2018), which signals a potential shift in definitional scope. In her recent work, Oxford (2017; 2018) enquired into the possibilities of formulating a more comprehensive definition for strategies within the framework of self-regulated learning, and, following the in-depth analysis of existing definitions, provides the following definition (quoted verbatim):

LLS [language learning strategies] are purposeful, conscious (or at least partially conscious), mental actions that the learner uses to meet one or more self-chosen goals, such as (a) overcoming a learning barrier, (b) accomplishing an L2 task, (c) enhancing long-term L2 proficiency, and (d) developing greater self-regulation (ability to guide one’s own learning). Like most aspects of L2 learning, LLS occur in real contexts (specific settings), are complex (with multiple, interacting factors), and are dynamic (flexible, usable in different ways, and changeable along with learners’ changing needs). LLS can be learned with help from a teacher, a friend, a book, or the internet, although many learners creatively and effectively generate their own LLS. (Oxford, 2018, p. 82)

The notion of self-regulation has challenged conventional strategy definitions and taxonomies. Rose et al. (2018) touch upon the different ways of replacing strategies with self-regulation (an idea also raised in Dörnyei, 2005) or of integrating the two approaches. Oxford’s definition attempts to cover all aspects of self-regulated learning to the extent possible, focusing on the importance of learner autonomy in the process of learning a foreign language. While Oxford (2018) offers a fairly exhaustive definition with a potentially broad applicability in the field of language learning and teaching, the mainstream taxonomies of (L2) reading strategies tend to rely on the more conventional approaches to strategy research, as it shall be seen in section 2.3. below.

### 2.3 Taxonomies of reading strategies

Reading strategy classifications are based on general learning and language-learning strategy taxonomies, with the basic distinction between cognitive and metacognitive strategies; their respective working definitions are presented in 2.2. Despite the lack of unanimous consensus in the research community, cognitive strategies are often associated with automaticity or, in other terms, procedural knowledge, suggesting that good readers possess skills-level abilities (Grabe, 1991; Alderson, 2001), whereas metacognitive strategies are believed to involve a certain degree of conscious reflection and intentionality (Haukås, 2018), the top-down processes of planning, monitoring and (self-)evaluation are the central elements of this vast domain of thought processes (O'Malley & Chamot, 1990, pp. 44–45; Alderson, 2001, p. 13; Mokhtari & Reichard, 2002).

As stated above, reading strategy taxonomies – reading being one of the most widely studied skills in foreign language research – have relied on general language-learning strategy classifications in their development. While it can be stated that these widely overlap with one another, there is naturally variation arising from definitional inconsistency or differences in perspective. Moreover, of the two major strategy groups discussed in the literature, metacognitive strategies seem to have received considerably more attention.

Major strategy taxonomies for L2 reading include Block (1986), Grabe (1991; reiterated in Alderson, 2001, p.13) and Mokhtari and Reichard (2002). Semtin and Maniam (2015) provided a comprehensive overview of L2 reading strategy classifications used in various studies across the globe up to the mid-2010s. In her taxonomy, Block (1986) relied mainly on the distinction between top-down and bottom-up (or higher- and lower-level) processes. Grabe (1991) defined cognitive strategies as largely automatized, skill-level processes and regarded metacognitive strategies as essentially self-regulation processes. These include skimming, pre-viewing, prioritizing important information, adjusting reading rate and monitoring progress, just to mention a few.

Focusing exclusively on the metacognitive aspects of reading, Mokhtari and Sheorey (2001) and Mokhtari and Reichard (2002) outlined a tripartite taxonomy for metacognitive strategies, which laid down the foundation of the MARS (Metacognitive Awareness of Reading Strategies Inventory) and SORS (Survey of Reading Strategies) surveys measuring students' strategy use when reading in English in an academic context. The taxonomy comprises three major groups of strategies, which are: global strategies, referring to the reader's approach to the text as a whole (e.g., pre-viewing, skimming, activating prior knowledge), problem-solving strategies employed to overcome obstacles that might arise during reading (e.g., re-reading, guessing the meaning, visualizing information), and support strategies (e.g., using external sources, taking notes, and paraphrasing). The same logic of classification emerges from the synthesis offered in Semtin and Maniam (2015). Grabe and Yamashita (2022) offered a state-of-the-art description of the most common reading strategies, drawing on decades of empirical evidence and relevant findings in cognitive psychology. While all the above taxonomies have been proven to be efficient instruments for measuring L2 reading strategy use, none of them have been claimed to present a comprehensive picture of reading strategies, which is partially due to their differences in focus and in the way they were adjusted to specific research goals. Given that the main objective of the present study is to provide a detailed description of reader strategies, it seems necessary to employ a combined approach that considers both cognitive and

metacognitive strategies. At the same time, as the SORS test is one of the main instruments of this research, it is the Mokhtari-Reichard taxonomy that constitutes the core of this ad hoc classification system, which, as it shall be seen, centres essentially on metacognitive strategies.

#### *2.4 A summary of L2 reading research*

The vast body of L2 reading research can traditionally be divided into two main trends: survey-based self-report studies and verbal protocol research, with a few examples of mixed-methods research.

##### *2.4.1 Survey and mixed-methods studies*

Quantitative research in the field is mostly based on the MARSİ and SORS tests. Besides informing EFL educators about their students, these tests are convenient tools for raising student awareness and promoting the importance of self-reflection in learning processes (Mokhtari & Sheorey 2002, p. 8). In a more recent study, Mokhtari et al. (2018) presented a revised version of the MARSİ scale named MARSİ-R. The authors did not expect that the revisions would result in a significant improvement in terms of reliability but hoped to have created a version that can be used on a larger sample and still produce results that can be generalized to the broader population of readers. It is important to note that survey research studies measuring L2 reading strategy use tend to use a variety of independent variables to provide a nuanced analysis of the sample. This most often includes the inclusion of one or more of the following variables: age, gender, major (field of study), and level of proficiency. The population is often taken from a higher-education environment.

Indeed, relevant research in the Hungarian university context has mostly relied on the MARSİ and SORS tests. A mixed methods study by Mónos (2005) showed that even though English majors (n=86) appear to be aware of the strategies they use when reading in the L2, they prove to be less successful in actual reading tasks than the survey results might have suggested. In another mixed-methods study employing a combination of the think-aloud protocol (TAP) and a questionnaire, Szűcs (2017) measured the metacognitive reading skills of Hungarian EFL majors. The results suggest that the participants (n=59) had overall poor metacognitive skills. A large-scale study comparing L1 Hungarian and L2 reading strategies shows that teacher trainees use problem-solving strategies the most often in both their L1 and L2, with supporting and global strategies coming in the second and third places (Tary & Molnár, 2022). However, students tend to use more problem-solving and global strategies in the L1, and they have recourse to problem-solving and support strategies the most often when they read in the L2, and only then do they tend to employ global strategies (Tary & Molnár, 2022, p. 65). Related research suggests that while teachers are more likely to employ global and support strategies in their L1, there is no significant difference in the ratio of problem-solving strategies between the two languages (Tary, 2023).

International research has taken a broader view of the multivariate factors influencing reading strategy use. Among the research foci are the potential effects of cultural differences (Mokhtari & Reichard, 2004; Mokhtari, 2008; Karbalaei, 2010; Commander, Ashong & Zhao, 2016), gender differences (Phakiti, 2003; Mónos, 2005; Poole, 2005; 2009), academic background (Martínez, 2008; Dabaghi & Akvan, 2014; Chen, 2019; Čeljo, Bećirović &



Dubravac, 2021), and proficiency levels (Sheorey & Mokhtari, 2001; Lau & Chan, 2003; Zhang & Wu, 2009; Yoshikawa & Leung, 2020). Research findings in this particular sub-field of L2 reading survey studies seem to be in line with the major theoretical tenets of the reciprocal relationship between comprehension performance and/or linguistic proficiency and L2 strategy use (see Grabe & Stoller, 2013; Grabe & Yamashita, 2022). Based on the corpus of studies presented above, it is safe to say that strategy use can be used as a predictor of reading performance.

#### *2.4.2 The role of verbal reports in reading research*

Verbal protocols belong to a broad category of introspective methods that are based on participants' self-reflection (Dörnyei, 2007, p. 147). A basic distinction was made between concurrent and retrospective think-aloud protocols (TAP). In the case of concurrent TAP, the participants verbalized the information simultaneously to perform a task. Retrospective TAP works the other way around: participants report their thought processes after completion of the task (Ericsson & Simon, 1980, p. 219).

Among the earliest studies to measure L2 reading strategies through verbal protocols was Block's (1986) TAP research investigating the reading comprehension and strategy use of non-proficient English L2 readers in comparison with L1 readers. The results indicated that both L1 and L2 proficient readers employed global reading strategies and had a top-down approach to the text, whereas non-proficient L1 and L2 readers both preferred using bottom-up approaches to reading. A related case study examining proficient L2 readers' metacognitive strategy use (Li & Munby, 1996) concluded that readers of L2 academic texts tend to show a high level of strategy awareness and are capable of verbalizing their strategy use. Handayani and Widijantie (2021) measured Indonesian Business majors' strategy use when reading discipline-specific texts in English, focusing on pre-viewing strategies. Jincheng and Rahmat's comparative case study (2022) confirmed some of the earlier findings related to reading proficiency and strategy use, concluding that high-proficiency readers employed global (top-down) strategies considerably more often than less proficient participants. A final example is Krismayani and Menggo (2022), who used verbal protocols to identify the reading difficulties of English L2 undergraduates at a University in Bali.

Verbal protocols have generally proven to be effective data collection instruments in uncovering complex cognitive processes, knowledge structures and strategy use (Gass & Mackey, 2016, p. 25). Compared to surveys, they provide a considerably more detailed picture of specific language-related phenomena. However, because of the richness of data derived from verbal reports, sample sizes are normally small and the analysis is time-consuming (Gass & Mackey, 2016, pp. 16–17), which explains why verbal protocols tend to be less popular as a means of data collection than surveys.

#### *2.4.3 Research questions*

The previous sections have shed light on the importance and complexity of researching L2 reading skills in an academic context. Strategy use and awareness have indeed proven to be central to students becoming proficient readers in the foreign language. This study explored English majors' strategy use and self-perception as readers in an academic context. Employing a

TAP-based design complemented with the SORS survey measuring metacognitive reading strategies, the research sought to answer three principal questions:

- (1) What reading strategies do participants employ in a controlled reading situation which attempts to imitate an actual academic reading situation to the fullest extent possible?
- (2) How do participants perceive their own strategy use when reading in the L2, and how does it compare to the findings in verbal protocols?

Prior to the data analysis, it was hypothesized that there would be important differences between the data obtained from the protocols and follow-up interviews. At the same time, it was assumed that the general findings would be relatively consistent with each other; that is, self-perceptions would reflect the main tendencies of strategy use.

- (3) To what extent are tendencies of strategy use and self-perception emerging in (1) and (2) are consistent with the SORS results in general?

Three different types of data collection were employed because the three research questions highlighted three distinct yet interrelated aspects of L2 English reading strategy use and self-perception.

### **3. Methodology**

#### *3.1 Participants*

Participants of the research (n=12) were first-year students enrolled in the BA and teacher trainee programs at the Institute of English and American Studies, University of Szeged. All participants contributed on a voluntary basis following a general invitation to the research project.

#### *3.2 Research materials*

The main research material was a recent scientific article reporting the results of a worldwide study on the universal and culture-specific patterns of cooperation. The text was shortened and adapted to the needs of the data collection (see Appendix for full text). The other main instrument was the SORS test. The survey measures the three aforementioned groups of metacognitive strategies: global, problem-solving and support, with a variety of questions that refer to various sub-strategies. For example, Question 1: "I have a purpose in mind when I read" belongs to global categories, and can be labeled as the reader's intention of "setting a purpose." In comparison, Question 6 highlights the same process from a slightly different angle by focusing on the reader's evaluative strategy: "I think about whether the content of the text fits my reading purpose." In addition to ranking respondents' preferences for the three strategy groups based on their responses to 30 statements on a 1-5 scale, the survey calculates an average to measure the level of general reading skills (Mokhtari & Sheorey, 2002).

### *3.3 Method of data collection*

This research was preceded by a pilot study conducted in the spring semester of 2022. Based on the conclusions of the pilot study, the research design was revised and updated before the actual data collection one year later in the spring semester of 2023. The data collection consisted of three parts. Prior to starting the protocols, the participants were given a short training task to familiarize themselves with the method.

The first and major parts of the study consisted of semi-retrospective think-aloud protocols. The main text was divided into three sections, the end of each one marked with an asterisk. Students were instructed to stop reading after each asterisk and perform the following tasks: first, they had to summarize what they read in the given section; then they had to verbalize any thoughts that came into their minds while reading and any obstacles that occurred during the reading process, describing how they tried to overcome them. Essentially, they were invited to communicate everything they had experienced during reading. The final task was a five-sentence summary of the whole text, which was given at the beginning of the protocol in order to provide participants with a reason to do the reading. A major goal of the researcher was to imitate a real-life reading situation in an academic context to the extent possible within the limits of “laboratory” conditions.

The second part consisted of a semi-structured follow-up interview that included questions targeting participants’ self-perceptions of their reading strategy use. The third and last part was the taking of the paper-based SORS test.

The think-aloud protocols and follow-up interviews were recorded with the consent of each participant. With the exception of one participant who opted for using English during the session, all participants provided data in Hungarian.

The data obtained from the semi-retrospective think-aloud protocols and the follow-up interviews comprise the bulk of the data and therefore constitute the focus of the discussion.

### *3.4 Data analysis procedure*

Following the transcription of the recordings, the verbal protocols and the follow-up interviews were analyzed using MAXQDA. The observed instances of strategy use and mentions of strategies in the interviews were assigned codes. Initially, a deductive coding process was employed, using a set of 21 predefined codes based on the aforementioned taxonomies of reading strategies. These were later complemented by eight additional codes as a result of inductive coding based on the data. The methodological principles of the coding process were guided by Schreier (2013). Individual incidences of strategy use and mentions were added to receive a percentage distribution of the strategies across the data.

The data were then divided into two major datasets: one for the verbal protocols and the other for the follow-up interviews. For the latter, frequency was calculated based on the number of participants mentioning the strategy at least once, for the reasons described in section 4.3.

## 4. Results and discussion

### 4.1 General findings in the corpus

There were a total of 215 instances of strategy use or mentions observed in the data. The following table presents the distribution of the total broken down by strategy type and the number of occurrences across the data, in ascending order of frequency.

*Table 1.* Total instances of strategy use and mention across the data.

Strategy type	Frequency	Percentage
visualizing information	0	0.00
adjusting reading rate	0	0.00
final reading	1	0.46
taking a break	1	0.46
conscious focus	1	0.46
skipping (then returning)	1	0.46
compare expectations with content	1	0.46
summarizing	1	0.46
pre-viewing	1	0.46
pre-reading preparations	2	0.93
formulating questions	2	0.93
paraphrasing & translation	2	0.93
reading aloud	2	0.93
predicting	3	1.40
using supporting details	6	2.70
clarifying	6	2.70
note taking & highlighting	6	2.70
analyzing	7	3.20
inferencing	7	3.20
scanning	7	3.20
getting the gist of the text	8	3.72
skimming	8	3.72
using external resources	9	4.19
self-monitoring	13	6.05
activating prior knowledge	15	6.98
prioritizing information	18	8.37
guessing the meaning from context	26	10.28
re-reading	30	13.95
self-evaluation	31	14.41
<b>Total</b>	<b>215</b>	<b>(100.00)</b>

Percentages are rounded to two decimal places for transparency.

As can be seen from Table 1 above, 19 of the 21 strategies listed in the deductive coding process were present in the data to varying degrees. Two strategies, visualizing information and adjusting the reading rate, were neither employed nor mentioned in the verbal reports. From the complete list of 29 strategies, there were seven items which occurred once (accounting for 0.46% of the total, respectively). These were the following: final reading, taking a break, conscious focus, skipping (then returning), comparing expectations with content, summarizing and pre-viewing. Of the seven strategies, only the last two were included in the initial 21-item list, with the rest added later in the analysis. There were four items with two occurrences (0.93%) and one with three (1.40%). In the mid-range of the spectrum, we find nine strategies with an occurrence between 6 and 9 (2.70-4.19%, translated into percentages). With the exception of getting the gist of the text, all the items in this range are from the original 21-item list, which comprises some of the most commonly used strategies cited in the relevant literature. In the top tier are six strategies, namely: self-monitoring (6.05%), activating prior knowledge (6.98%), prioritizing information (8.37%), guessing the meaning from context (10.28%), re-reading (13.95%), and self-evaluation (14.41%). These numbers include all occurrences and mentions of strategy use, together with the verbal protocols and follow-up interviews.

#### 4.2 Main findings of the verbal protocols

One initial assumption made prior to the data collection was that there would be salient differences between participants' performance on the verbal reports and their perception of strategy use in the self-reports. The separation of the data into two main sets confirmed this hypothesis. Table 2 below demonstrates the types and frequency of strategy use in the 12 verbal reports in ascending order of frequency.

Table 2. Types and frequency of strategy use in the verbal protocols

Strategy type	Frequency	Percentage
skimming	1	0.99
formulating questions	2	1.98
scanning	2	1.98
analyzing	3	2.97
getting the gist	3	2.97
inferencing	5	4.95
using supporting details	6	5.94
clarifying	6	5.94
prioritizing information	7	6.93
activating prior knowledge	8	7.92
self-monitoring	10	9.90
guessing the meaning	11	10.89
re-reading	13	12.87
self-evaluation	24	23.76
<b>Total no. of occurrences</b>	<b>101</b>	<b>100</b>

Altogether, 14 different types of strategies were observed in the semi-retrospective reports, with three strategies topping the list: guessing the meaning, re-reading for clarification and self-evaluation. The total number of strategies used in the protocols (101 out of 215) accounted for 47 % of the total. The top three strategies were guessing the meaning, re-reading and self-evaluation, the latter used in the sense of self-assessment of task-specific and general reading performance. In fact, participants were observed to both *employ* and *talk about* reading strategies during the protocols. The excerpts below will now present examples of the top three strategies. All excerpts were translated into English by the author of this study. For the sake of economy, interjections, hesitations and certain attitudinal markers were excluded from the translation.

### Guessing the meaning

Mokhtari and Reichard (2002) categorize guessing the meaning as a problem-solving strategy, as it involves figuring out the meaning of unfamiliar lexical items from the context. Of the total number of strategies used in the verbal protocols, 11 (10.80%) pointed to participants employing this strategy in an effort to decipher meanings or show awareness of its importance in the process of reading. The following excerpts evidence successful and failed attempts to guessing the meaning.

(1) *For example, if I was presented the verb 'comply with' without context, I would not be able to guess the meaning, but here it was clear to me what it meant.* (Participant 3)

(2) *Here is the word "anthropological", and I should know what it means, but I still don't get it. I always try to guess from the context, and, as it stands together with "economic" and the two are connected with "and", I infer that it means something similar.* (Participant 7)

(3) *In the first paragraph of this part I encountered a couple of unknown words and phrases. For example, I had never seen the expression "Lamalera", and the same goes for the words 'large catch' and 'forager'. First I tried to work out the meaning from the context, but it did not help. Luckily though, I did not need them to understand the passage. I don't think they were important for comprehension.* (Participant 2)

(4) *I had not encountered the phrase "preference for compliance" prior to reading the text. Obviously, I know what "preference" means, but I have never seen "compliance" in this context, and I could not make out what it means. That gave me some thinking, but I still managed to understand the conclusion of the research.* (Participant 2)

Examples 1 and 2 show (at least partially) successful guesswork. Interestingly though, in none of the three cases do participants actually verbalize their solution, which might imply that they formulated an approximate idea of what the unknown word means and they were comfortable enough with that to move on reading. Excerpts 3 and 4, however, show two unsuccessful attempts by the same participant's trying to figure out unfamiliar words. At the same time, both participants reported being able to grasp the gist of the text without knowing these words, a remark worthy of attention, particularly in the case of 4, where it was one of the keywords in question. This strategy appears to follow similar patterns across the data: apart from the few

unsuccessful ones, most attempts resulted in participants' reporting having understood the meaning of the unfamiliar lexical item.

### Re-reading

Re-reading is a fundamental strategy that has consistently figured among the major reading classifications, often listed along reading aloud and adjusting reading speed (see Block, 1986, Alderson, 2001, Mokhtari & Reichard, 2002, Grabe & Yamashita, 2022). Considered a problem-solving metacognitive strategy in the Mokhtari-Reichard taxonomy, re-reading is closely associated with the reader's effort to overcome comprehension obstacles, which usually concern larger units of texts. Let us now see some examples of this strategy in the dataset:

(5) *The first sentence was a bit too long, and I had to go through it like three times to understand it.* (Participant 3)

(6) *Maybe the very last sentence was a longer and more complex one, and I had to skim through it twice or three times. It was important to understand this final sentence, but the sentences at the beginning were easy to understand.* (Participant 4)

(7) *There weren't any difficult words, but I had to re-read some parts to make sure I remember them. For example, we had these examples from Indonesia and Tanzania, and I re-read them to get the idea, but, apart from that, it was comprehensible.* (Participant 8)

Reflections of re-reading follow a very similar pattern: the participant identifies the part or sentence that was difficult for them to understand upon first reading, and then reports going back and re-reading that specific part in the hope of figuring out the meaning. Excerpts 5 and 6 show instances of re-reading as a result of syntactic complexity, while in excerpt 7, the difficulty in comprehension springs from the abundance of supporting details in the passage.

One noteworthy detail regarding the sub-corpus on re-reading is the phenomenon of some participants' tendency to integrate bits of self-evaluation into retrospection. Below are two examples of this phenomenon:

(8) *I tend to first skim through the text, and I can't remember much after it, so I have to force myself to go through it again in detail.* (Participant 9)

(9) *I have noticed that I always overlook numbers. I don't really read them, but if I have to, I go back to them to see the exact number.* (Participant 6)

These excerpts seem to substantiate re-reading as a metacognitive strategy: participants report taking the conscious decision to re-read the sentence or passage in question to clarify meaning. This observation led us to discuss some peculiarities of self-evaluation of verbal protocols.

### Self-evaluation

Unlike the other metacognitive strategies identified in the verbal reports, self-evaluation bears upon participants' perception of themselves as strategic readers instead of the information

content and organizational structure of the text. This strategy has by far exceeded all the others in terms of frequency of occurrence (23.53%). The excerpts presented below highlight different aspects of self-evaluation, which can be divided into two groups: self-assessments of text-specific performance and general strategy use.

(10) *I don't know why, but for some reason it took me longer to read this part. It's either because I have become tired or simply because it was harder for me to understand.* (Participant 8)

(11) *I think I'm generally a slow reader, because I often can't concentrate and I have to re-read the same sentence again and again.* (Participant 3)

(12) *I have noticed that sometimes I don't understand what's going on at the beginning of the paragraph, and, instead of re-reading, I decide to read on and hope that it will help me understand what was not clear before. This might be a bad strategy and I should re-read instead, but I usually opt for this solution due to lack of time.* (Participant 7)

Excerpt 10 is an instance of self-evaluation in which the participant focuses on a specific reading task. Excerpts 11 and 12, in contrast, exemplify participants' general observations of their reading practices, and they do so in two different ways. In excerpt 11, the participant reports concentration issues during reading and explains how she tries to overcome them by re-reading. In 12, we see a more complex explanation developed in the self-reflection: the participant identifies the problem (comprehension problems at the beginning of paragraphs), explains the strategy he usually employs in an attempt to overcome it (reading on), and then criticizes his own approach and offers a seemingly better solution (re-reading). To answer the question that would logically follow, he immediately adds that lack of time is the chief reason why he chooses to go with a "weaker" strategy. While the latter example proved to be exceptional in terms of the complexity of the explanation provided by the participant, it can be stated that participants generally had a critical view of their strategy use, showing the capacity to identify their strengths and weaknesses.

To summarize the findings relevant to the verbal protocols, it can be concluded that participants demonstrated varied strategy use, with metacognitive strategies topping the frequency list. Participants showed awareness of certain strategies, which is reflected in the observed instances of self-evaluation. It has to be added, however, that while in the larger part of the dataset it was possible to draw relatively clear-cut distinctions of strategy use, there were examples of participants' using multiple strategies simultaneously, occasionally blurring the division lines. These observations might be regarded as a potential justification for the aforementioned definitional uncertainties in the literature; however, owing to the constraints in the scope of the present study, this issue will not be further discussed. Instead, let us turn our attention to the data obtained from the follow-up interviews.

#### *4.3 Main findings of the follow-up interviews*

The second subsection of the data analysis presents the results of the follow-up interviews. The goal of this segment of analysis is twofold: on the one hand, it examines participants' self-perception of themselves as L2 readers in an academic context. The data presented herein will be used to provide a basis for comparison with the findings of the verbal protocols. Below are



the strategies mentioned or described in the self-reports. Frequency was calculated based on the number of participants mentioning the strategy at least once, as was the case on several occasions that participants' reports of using a strategy were redundant (i.e., there was no perceivable difference in the function(s) of the given strategy between its individual mentions), it appeared to be of no real practical value to count the individual occurrences in this set of the data. Table 3 below regroups strategies according to three bands of frequency of occurrence (i.e., how many of the 12 interviews they were mentioned).

*Table 3.* Strategies mentioned in the follow-up interviews regrouped in three bands

Frequency 1-3	Frequency 4-6	Frequency 7-11
inferencing pre-viewing summarizing taking mental notes comparing expectations with actual content skip and return conscious focus taking a break reading aloud final reading predicting keywords using supporting details paraphrasing and translation background knowledge self-monitoring pre-reading preparations analyzing	getting the gist scanning prioritizing information note-taking and highlighting skimming self-evaluation	using external sources guessing the meaning re-reading

As shown in Table 3, the number of strategies evoked in the follow-up interviews far exceeded that of the verbal protocols, with 27 compared to 14. Except for clarifying and formulating questions, all strategies presented in the verbal protocol were mentioned in the interviews. The majority of them, however, had a frequency between 1 and 3, meaning they were mentioned between one and three participants. This frequency band contains 18 out of the 27 strategies, accounting for two-thirds (66.66%) of the total number. The frequency band of 4-6 mentions counts 6 strategies (22.22%), and the remaining three strategies (11.11%) belong to the 7-11 range. No strategy was mentioned by all of the participants. Similarly to the analysis of the verbal protocols, the discussion in this subsection focuses on participant perceptions of the top three strategies in the follow-up interviews, which are, in ascending order of frequency: using external resources (n=7), guessing the meaning (n=9), and re-reading (n=11).

The full list of follow-up questions is provided in the Appendix. The questions relevant to strategy use in L2 reading were the following (NB. the numbering is different from the original, see Appendix):

- (1) In general, how do you approach the reading of an English text? Do you have any conscious strategies to it?
- (2) What do you do when you get stuck while reading a text? Do you try to resolve the problem yourself, or do you seek external help?
- (3) While and after reading a text, what do you do to understand and remember what you have read?

### Using external resources

Having recourse to outside reference is among the most commonly employed support strategies (Alderson, 2001; Mokhtari & Reichard, 2002; Semtin & Maniam, 2015). Seven of the 12 participants reported using external resources in response to the question of how they overcome reading difficulties (Question 2). Below are some examples demonstrating this.

(13) *I often use the dictionary. First, if possible, I try to guess it from context. For example, we had the word “comply”, and I wouldn’t have looked it up in the dictionary anyway because its meaning is obvious. But when I’m really not sure about the meaning, I reach for the dictionary; this is what I would’ve done in the case of “ingrained”. (Participant 3)*

(14) *First I try to resolve the problem myself by, let’s say, guessing the meaning. If that doesn’t work, then I need outside help. (Participant 5)*

(15) *It depends on the kind of text that I’m reading, and it depends also on the reason why I’m reading it. For example, if it’s an academic task and I have to read it and I don’t have much time on my hand, then I, I go for the easiest solution and I know it’s not the best one because it’s not. (Participant 10)*

(16) *It depends on the nature of the problem. I usually try to find the solution myself, but when I get stuck, when there’s a word that I really can’t figure out, I use the dictionary. Other than that, I don’t use any outside sources. (Participant 12)*

The examples taken from four different participants suggest that using the dictionary is the most common external help they seek in the case of lexical-level comprehension difficulties. However, three of the four participants in the sample report reaching for the dictionary only after having tried to deduce the meaning from context. In excerpt 15, we see the participant naming lack of time as the primary reason she goes for “the easiest solution” despite acknowledging its shortcomings. In addition, one participant reported asking for help from fellow students or teachers when encountering comprehension problems in a classroom context.

### Guessing the meaning

As it was just formulated in relation to the examples provided above, participants tended to use guessing from context as a means of deciphering unfamiliar vocabulary. In fact, 9 out of the 12 respondents mentioned using this strategy in their general reading practice. Below are two examples demonstrating the participants’ preferences for this problem-solving strategy.

(17) *I usually try to resolve the problem on my own. I rarely use a dictionary, but I know that sometimes I should. What I usually do is read on and try to guess the meaning from context.* (Participant 8)

(18) *I usually prefer finding the solution myself even if I have to re-read the same part five times [...] This, of course, depends on the text too, but I mostly try to resolve the problem on my own, I try to guess the meaning from context.* (Participant 11)

The relevant data in this subcorpus suggests a complementary relationship between using the dictionary and deducing meaning from context – or, on some occasions, from background knowledge of lexical elements belonging to the same word family as evidenced in the verbal protocols.

### Re-reading

Similarly to guessing from context, re-reading figured in the top three strategies in both the verbal protocols and the follow-up interviews. A problem-solving strategy which involves scanning for specific passages or sentences within the text, re-reading appears to be a commonly and consciously applied strategy among participants. Below are some representative excerpts supporting this observation. This strategy was mentioned in participant answers to all three interview questions, that is, general participant approach to reading a text (excerpts 19 and 20), overcoming comprehension difficulties (excerpts 21 and 22), and remembering information from the text (excerpts 23 and 24).

(19) *First I read through the whole text, and while so doing, I make a note of the parts I have to go back to. I return to that part after the first read, and re-read it. Once I've understood it, I re-read the whole text once again.* (Participant 2)

(20) *First I always read the whole text, and if, let's say, there is a task accompanying it, and I find a word [connection?], I go back to the text and re-read that part.* (Participant 5)

(21) *I start re-reading the text a little bit later, because that helps me to move on without a problem.* (Participant 9)

(22) *I re-read the difficult part multiple times, hoping it will help.* (Participant 8)

(23) *I don't have any particular technique. If I can't remember what I'm reading, I go back and re-read it.* (Participant 5)

(24) *I make a note of the parts I have to go back to while reading. I return to that part after the first read.* (Participant 12)

In addition to highlighting participants' use of re-reading as a way to overcome comprehension problems, excerpts 19–24 suggest that re-reading can be effective in identifying important parts of a text when, for example, looking for answers to a question in a related task in excerpt 20. It is also used as a means to remember vital information in a text, as formulated in excerpts 23 and 24. As re-reading involves searching for specific information based on the data, it might not be

implausible that it constitutes a form of scanning, a strategy that was not included in the Mokhtari-Reichard taxonomy.

Despite the fact that the scope of the present analysis is limited to strategies with the highest frequencies of occurrence, it might be worth taking a quick look at strategies mentioned in the follow-up interviews but absent in the verbal protocols. These mostly belong to the low-frequency (1-3) band and include strategies that are not generally discussed in the literature, such as taking mental notes, skipping difficult parts and then later returning, comparing expectations with actual content or paraphrasing and translation. The only exception here is the strategy of using external resources, the absence of which in the protocols appears to be justified by the circumstances of the data collection, that is, participants were not allowed to use a dictionary or ask for help from the researcher. While most of the strategies listed above appear to be instances of individual strategies, upon closer examination, they might be relatable to some of the more common strategies. For instance, skipping and returning will obviously include re-reading, and comparing pre-reading anticipations to the actual information content of the text, together with predicting, involves activating background knowledge, a strategy generally regarded as essential in the pre-reading and pre-viewing phases (Oxford, 2017, pp. 275–276; Grabe & Yamashima, 2022, p. 302). It is possible that, in their answers, participants highlighted elements of “larger” strategies that they found important to mention.

#### *4.4 Answering research questions (1) and (2)*

The first two research questions aimed to explore strategy use and self-perception across participants. A summary of these findings is provided below.

*RQ1: What reading strategies do participants employ in a controlled reading situation which attempts to imitate an actual academic reading situation to the extent possible?*

Based on the frequency of occurrence, it can be stated that the three most commonly used strategies were guessing the meaning, re-reading and self-evaluation (with this latter one including reference to the use of other strategies). These are all categorized as metacognitive strategies, based on relevant taxonomies. Indeed, participants’ apparent preference for metacognitive strategies seems to be further reinforced by the fact that places 4 to 6 in the list are also occupied by strategies of the same category, namely, self-monitoring, activating background knowledge and prioritizing information. Furthermore, participants tended to show awareness of their thought processes and demonstrated the capacity to view their performance critically.

*RQ2: How do participants perceive their own strategy use when reading in the L2, and how does it compare to the findings in verbal protocols?*

The relevant questions of the follow-up interviews highlighted a strategic mindset that appeared to be more diverse in nature than what could be revealed in the verbal protocols. The top three strategies were the use of external resources, guessing from context and re-reading, which, once again, belong to the metacognitive realm. A similar tendency is revealed in the mid-frequency band (4-6 occurrences), with strategies such as note-taking and highlighting, prioritizing

information and self-evaluation having a solid presence in the self-reports. The low-frequency band (1-3 occurrences) included a mixed list of cognitive and metacognitive strategies.

A comparison of the two datasets yielded similar results. First, two of the top three strategies are the same in the verbal protocols and the follow-up interviews, and there is noticeable overlap in the rest of the data despite the latter dataset being greater in variety. Second, both datasets showed a preference for metacognitive strategies. The main cognitive strategies include analyzing, inferencing, and clarification.

#### *4.5 Results of the SORS test*

The third research question of the study set out to explore potential correlations between the main findings of the interviews and the results of the SORS test. To briefly recap, the SORS measures L2 learners' metacognitive reading strategies along the three main dimensions of the Mokhtari-Reichard taxonomy, namely, global, problem-solving and support strategies.

The overall average of the 12 participants was 3.69, which falls into the lower range of the high band (from 3.5 upwards), indicating that participants generally have a high level of strategy use when it comes to reading in the L2. Individual averages varied between 3.03 (medium) and 4.30 (high). None of the participants scored in the low band (2.4 or lower). As for the specific groups of strategies, the results showed the following order of preference across participants: problem-solving, global and support strategies. Indeed, 8 out of 12 (67%) respondents scored highest on problem-solving strategies, and 4 out of 12 (33%) were found to use global strategies in the first place. Support strategies came in third place, 10 out of 12 times (83%). In light of these findings, let us now return to RQ3:

*RQ3: To what extent are tendencies of strategy use and self-perception emerging in (1) and (2) are consistent with the SORS results in general?*

The data obtained from the verbal protocols and the follow-up interviews suggested participant preference for metacognitive strategies in comparison with cognitive ones. While this tendency appears to be consistent across the two datasets, the overwhelming prevalence of metacognitive strategies might be partially explained in terms of them being considerably larger in number in the taxonomical systems and, therefore, in the set of codes applied to the data. The results of the protocols and the interviews suggest an overall preference for global and problem-solving strategies, with the exception of the support strategy of using external resources figuring in the top three strategies of the follow-up interviews. It can be thus stated that the broad comparison of the SORS results with the main findings suggests a certain degree of consistency between the numerical and the qualitatively assessed datasets.

## **5. Conclusion**

The primary goal of this study was to investigate strategy use and reader self-perception among first-year English majors and teacher trainees. A combined research design of semi-retrospective verbal protocols, follow-up interviews, and the SORS test was used to map out potential patterns of strategy use. The results suggest that participants generally tend to show awareness of their strategy repertoire and they prove to be capable of viewing themselves as

readers from a critical angle. The comparison of the three sets of data shows a strong preference for metacognitive strategies, with problem-solving and global strategies being the most frequently used and mentioned ones. These results appear to be consistent with international research findings, indicating that proficient readers tend to use high-order strategies to a considerable extent. Future research directions could involve the expansion of the study to a wider population and possibly over longer periods of time. A longitudinal examination of the participants' L2 reading strategy use could provide a reliable picture of how their reading skills develop. A study of such a scale would, of course, require a research design embedded in the syllabus of the reading skills seminar, which would definitely have important pedagogical implications.

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## Appendix: Self-developed research materials

*A: Text used in the verbal protocols*

### **Small acts of kindness are frequent and universal, study finds**

Around the world, research reveals, people help each other about every 2 minutes

A new study by UCLA sociologist Giovanni Rossi and an international team of collaborators finds that people rely on each other for help constantly. In the study, published in *Scientific Reports*, a group of international authors explore the human capacity for cooperation. They found that people signal a need for assistance, such as asking someone to pass them a utensil, once every couple of minutes.

The research revealed that those requests for help do not go unanswered: Across cultures, people comply with these small requests far more often than they decline them. On the rare occasions when people do decline, they explain why. These human tendencies transcend cultural differences, suggesting that, deep down, people from all cultures have more similar cooperative behaviours than prior research has established.\*

The new findings help solve a puzzle generated by prior anthropological and economic research, which has emphasized variation in rules and norms governing cooperation. For example, while whale hunters of Lamalera, Indonesia, follow established rules about how to share out a large catch, Hadza foragers of Tanzania share their food more out of a fear of generating negative gossip. "Cultural differences like these have created a puzzle for understanding cooperation and helping among humans," said Rossi, the paper's first author. "Are our decisions about sharing and helping shaped by the culture we grew up with? Or are humans generous and giving by nature?"

To answer those questions, the authors analyzed over 40 hours of video recordings of everyday life involving more than 350 people in geographically, linguistically and culturally diverse sites -- towns in England, Italy, Poland and Russia, and rural villages in Ecuador, Ghana, Laos and Aboriginal Australia.\*

The analysis focused on sequences in which one person sent a signal for help, such as asking directly or visibly struggling with a task, and another person responded. The authors identified more than 1,000 such requests, occurring on average about once every two minutes. The situations involved "low-cost" decisions about sharing items for everyday use or assisting others with tasks around the house or village, for example. Such decisions are many orders more frequent than "high-cost" decisions such as sharing the spoils of a successful hunt, a type of decision that has been found to be significantly influenced by culture.

People complied with small requests seven times more often than they declined, and six times more often than they ignored them. People did sometimes reject or ignore small requests, but a lot less frequently than they complied. People helped without explanation, but when they declined, 74% of the time they gave an explicit reason. The average rates of rejection (10%) and ignoring (11%) were much lower than the average rate of compliance (79%).

The preference for compliance held across all cultures and was unaffected by whether the interaction was among family or non-family members. The findings suggest that being helpful is an ingrained reflex in the human species, Rossi said.\*

*B: Follow-up interview questions*

1. On a scale of 1 to 5, how difficult did you find the text? (If you found it difficult: what do you think the reason was?)
2. In general, how do you approach the reading of an English text? Do you have any conscious strategies to it?
3. What do you do when you get stuck while reading a text? Do you try to resolve the problem yourself, or do you seek external help?
4. While and after reading a text, what do you do to understand and remember what you have read?
5. How often do you read scientific and non-scientific texts in Hungarian?
6. How often do you read scientific and non-scientific texts in English?
7. Besides English, what other language(s) do you speak? (If you speak another language: do you read in that language?)



# An exploratory study on the questionnaire measuring EFL teachers' attitudes towards information and communication technology (ICT) integration in primary school classrooms

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This study aimed to examine the reliability and robustness of a questionnaire developed based on the Teachers' Attitudes Towards Computers (TAC) Questionnaire (version 6) by Christensen and Knezek (2009) to measure EFL primary school teachers' attitudes towards ICT use in teaching practice in Vietnam. Exploratory Factor Analysis (EFA) was conducted on a pilot study sample ( $n = 202$ ) to refine the factor model. The identified factor structure was then used to collect data for the main study ( $n = 598$ ). Cronbach's alpha and McDonald's omega coefficients were computed to evaluate the internal consistency of the newly identified factors in both the pilot study and main study samples. The findings revealed consistent reliability in the factor structure across the samples, reinforcing the robustness of the questionnaire and its reliability for future use. Implications for both researchers and educational organizations are also presented in this study.

**Keywords:** validation, reliability, teachers' attitudes, EFA, ICT use

## 1. Introduction

Information and Communication Technology (ICT) has had a powerful impact on education over the past few decades. ICT-enhanced teaching and learning has continued to flourish since the Covid-19 pandemic. However, the effectiveness of ICT use in teaching is determined by several factors (Al-Zaidiyeen et al., 2010) and teachers decide whether to integrate ICT, the extent to which ICT penetrates their teaching, and how it is implemented in their practice. Numerous studies have proven that teachers' attitudes towards ICT use greatly influence ICT adoption (Albirini, 2006; Celik & Yesilyurt, 2013; Scherer et al., 2018). Despite the wealth of research on teachers' attitudes towards ICT use in teaching practice, the number of systematic studies in the same field in the Vietnamese educational landscape has been relatively limited. Based on a thorough review by the researcher, no study has been conducted on EFL teachers' attitudes towards ICT use in teaching practice at the primary school level in the Vietnamese research context. Therefore, it is necessary for researchers to shift their focus to this topic, and a

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reliable instrument for measuring teachers' attitudes towards ICT use in teaching is urgently needed.

The Teachers' Attitudes Towards Computers (TAC) Questionnaire (version 6) developed by Christensen and Knezek (2009) was selectively adapted with multiple changes by the researcher because of its comprehensiveness, reliability, and validity. Specifically, it was constructed based on 14 previously developed and widely used questionnaires and has undergone several rounds of development and refinement with large samples over the years (see Christensen & Knezek, 2009). Owing to the fast-paced development of ICT in general and ICT in education in particular, this instrument somewhat displays its outdatedness to some extent. For instance, it focused on teachers' attitudes towards the use of computers, which was popular at that time, but no longer the case after nearly twenty years.

Changes made to the original questionnaire were associated with the replacement of several phrases and one construct called *E-mail*, which was considered inappropriate for application in the targeted research context, and the exclusion of one irrelevant construct. Therefore, it is essential to examine the factor structure underlying the modified questionnaire and its reliability and robustness to ensure its ability to measure the relevant aspects of teachers' attitudes towards the use of ICT in EFL teaching within the research context of Vietnam. Based on these objectives, this study proposes the following hypotheses:

*Hypothesis 1:* There are changes in the factor structure of the adjusted questionnaire as a result of running an exploratory factor analysis using the pilot sample compared to the original one.

*Hypothesis 2:* The reliability coefficients, including Cronbach's alpha and McDonald's Omega, for the identified constructs based on both the pilot sample and the main data are statistically significant, indicating significant internal consistency and robustness within the identified questionnaire.

After formulating these hypotheses and specifying the parameters for examination, attention was turned to the research questions guiding the examination of the factor structure, reliability, and robustness of the identified questionnaire over time. This study seeks to answer the following two research questions.

*Research Question 1:* What changes are observed in the factor structure of the adjusted questionnaire based on the pilot sample compared to the original one?

*Research Question 2:* To what extent does the identified questionnaire demonstrate reliability and robustness over time based on both the pilot and main samples?

In summary, this introduction provides an overview of the significance of ICT use in education, the role of EFL teachers' attitudes towards ICT use in teaching practice, the need to develop an instrument measuring EFL teachers' attitudes towards it, checking its reliability and robustness over time, and positing hypotheses and research questions accordingly. In the following section, I will delve into the existing literature to contextualize my study within the broader research landscape and examine relevant studies and theories.

## 2. Literature review

After being modified and examined for reliability and robustness over time, the instrument was later employed in the main study, which aimed to examine primary school teachers' attitudes towards the use of ICT in EFL teaching in an underprivileged area in Vietnam. This research is part of a larger study, followed by an examination of teachers' actual use of ICT in their pedagogical practices. Taking these aims into account, this section will first delve into theories depicting the correlation between teachers' attitudes *towards* ICT use and their adoption in teaching practices; second, I review relevant previously developed instruments measuring teachers' attitudes, and finally go deeper into TAC version 6.

### 2.1 Attitudes: Definition, theoretical and empirical background

Attitudes are defined as "a relatively enduring organization of beliefs, feelings and behavioral tendencies towards socially significant objects, groups, events or symbols" (Vaughan & Hogg, 2005, p. 154). Over the decades, attitudes have been recognized as "central to behavioral intentions and usage behaviors" in theories explaining the acceptance and adoption of technology (Dwivedi et al., 2019, p. 719). It has emerged as a pivotal factor influencing individuals' behaviors within traditionally established models. In the Theory of Reasoned Action developed by Ajzen and Fishbein in 1975, *attitudes*, together with *subjective norm*, contribute to the formation of behavioral intentions, consequently impacting actual behaviors. Similarly, the Theory of Planned Behavior (TPB; Ajzen, 1991) asserts that *attitudes*, coupled with *subjective norm* and *perceived behavioral control*, play a crucial role in predicting and explaining individuals' behaviors. Five years later, Taylor and Todd (1995) extended the TPB by introducing the decomposed Theory of Planned Behaviour (DTPB). This model aims to clarify user behaviors by examining the associations between *beliefs*, *attitudes*, *intention*, and *behaviour*. Attitudes play a central role in predicting individuals' usage behaviors.

It is worth noting that in some other frameworks, attitudes still exert their influence on technology adoption but under various construct names. The Social Cognitive Theory (SCT), extended to the context of information technology utilization by Compeau and Higgins (1995), is an example. *Affect*, representing the positive feelings an individual experiences when using computers, and *anxiety*, reflecting the negative emotions one may encounter during computer use, grouped into *affective factors*, exhibit a direct impact on *usage*. Another theoretical framework, namely the Model of PC Utilization (MPCU; Thompson et al., 1991), also consists of the construct *affect towards use*, which refers to "feelings of joy, elation, or pleasure, or depression, disgust, displeasure, or hate associated by an individual with a particular act" (p. 127).

Over time, theories aiming to elucidate technology usage behavior have received substantial attention from researchers and undergone continuous development. Notably, attitudes have consistently proven their role as predictors of actual utilization in practical settings. In 2001, Ajzen conducted a comprehensive examination of the role of attitudes within the TPB framework and investigated the relationship between attitudes and behavior in multiple prior studies. The research results reaffirmed the significant exploratory and predictive capabilities of attitudes in elucidating and forecasting behavior. Similarly, Teo et al. (2016) validated their extended TPB, identifying that attitudes towards computer use had the most

substantial positive impact on the intention to use technology, which consequently drove individuals to take specific actions. Despite their doubts on the role of affective attitude constructs in predicting the adoption of Information Systems (IS), Yang and Yoo (2004) shed light on the significance of *cognitive attitude* as a critical factor in explaining it within their study, extending Davis's (1989) Technological Acceptance Model (TAM).

Previous empirical studies have demonstrated that teachers' attitudes correlate with their decisions on the use of ICT in their teaching practices. For instance, a study in the Syrian context by Albirini (2006) emphasized that teachers had positive attitudes towards computers, leading them to make decisions about using computers in in-class teaching. This finding aligns with those of Yan and Piper (2003). Other studies (Teo & Bang Lee, 2010; Tondeur et al., 2008) shifted their focus to teachers' attitudes towards the use of technology, not the technology or computers themselves, and came to a similar conclusion that teachers' attitudes served as a significant predictor of their intention to utilize technology in pedagogical practices. Therefore, measuring teachers' attitudes is an indispensable step in predicting their integration of technology into teaching (Myers & Halpin, 2002), particularly for researchers, educational policymakers, and administrators.

## 2.2 Measurement of teachers' attitudes

Many instruments have been developed to measure teachers' attitudes towards technology and its use in teaching. Some focused on teachers' attitudes towards technology itself, and the term *computers* was used to refer to technology in their instruments (e.g., Albirini, 2006; Teo et al., 2007). Others emphasized teachers' attitudes towards the use of technology, but the use mentioned in the questionnaire was still restricted to *Computers* (e.g., Al-Zaidiyeen et al., 2010). Nevertheless, the continuous development of technology in education, specifically in EFL teaching, has led to the introduction of novel instructional opportunities integrated with new technological advancements (Murray, 2007). As a result, it is likely that teachers' attitudes towards ICT use in their pedagogical practices may change over time. Consequently, it is critical to re-examine the instruments employed to gauge teachers' attitudes in this field and to clarify ICT use within these instruments.

Attitudes themselves are multidimensional constructs (Teo, 2008) that are measured diversely based on different sets of dimensions. Nevertheless, the existing body of literature has recorded a considerable number of studies in which instruments gauging attitudes as a unidimensional construct were employed. A prime illustration is found in Al-Zaidiyeen et al. (2010), who adopted the 15-item questionnaire developed by Albirini (2006) to investigate teachers' attitudes and their utilization of technology in classroom teaching within the Jordanian research context. Similarly, Sang et al. (2010) conducted a study titled "*Student teachers' thinking processes and ICT integration: Predictors of prospective teaching behaviors with educational technology*", employing the Attitudes towards Computers in Education Scale (ACE), comprising eight items designed by Braak (2001). Another instance is found in the study carried out by Al-Emran et al. (2016), where attitudes towards the integration of mobile learning in higher education were measured as a unidimensional construct using a set of ten items designed by the authors. However, it is worth noting that Yang and Yoo (2004) revealed that while cognitive attitudes play a critical role in predicting ICT use, the influence of affective attitudes remains uncertain. Taking the research objective of examining the reliability and



robustness of the adapted questionnaire for further investigations into EFL teachers' attitudes towards ICT use and their actual use in pedagogical practices into account, the researcher deliberately considered choosing the questionnaire to be adapted in this study, ensuring that attitudes was treated as a multidimensional construct and comprised separate affective and cognitive attitudinal dimensions.

### 2.3 Questionnaire adaptation: Examining factor structure, reliability, and robustness

The TAC questionnaire version 6, developed by Christensen and Knezek (2009) based on 14 previous instruments (see Christensen & Knezek, 2009), gauges various dimensions of attitudes towards computer use, including enjoyment, anxiety, avoidance, e-mail, negative impact, productivity, and semantic perception of computers. It has undergone two significant refinements and was utilized to collect data over various time spans: 1995–1997, 1998–1999, 1999–2000, 2003, 2006, and 2008, confirming its consistently high psychometric attributes (Christensen & Knezek, 2009). Nevertheless, Christensen and Knezek (2009) cautioned that its robustness in maintaining stability in diverse international contexts should be scrutinized in further investigations. This underscores the importance of conducting the present study to examine the reliability and robustness of the questionnaire, especially after undergoing a number of major adjustments before and after running factor analysis.

To minimize the number of variables and subsequently explore the underlying factor structure, factor analysis is recommended (Pallant, 2010). This process involves taking a substantial number of variables and condensing them by simultaneously proposing the potential exclusion of certain variables and the underlying factor model. Several considerations should be taken into account before conducting the factor analysis. One such consideration is sample size, which is an aspect with limited consensus. Tabachnick and Fidell (2007) advocated for a minimum of 300 cases, but acknowledged that a smaller sample size, such as 150 cases, could be acceptable if certain marker variables in the solution exhibited high loadings. However, Nunnally (1978) proposed a ratio of 10 to 1, indicating that one item requires ten cases. In a recent study, Sürücü et al. (2022) proposed that 200 cases should be regarded as the lower threshold, suggesting that a sample size greater than 200 would be deemed sufficient. Other considerations worth examining include the intercorrelations among items, with numerous values equal to or exceeding .3 (Tabachnick & Fidell, 2007), Kaiser-Meyer-Olkin (KMO) coefficients greater than .6 (Kaiser, 1970, 1974), and the statistical significance of Bartlett's test of sphericity ( $p > .05$ ; Pallant, 2010).

For item removal, the following criteria were applied. First, items with communality values lower than .5 were eliminated (Hair et al., 2019b). Second, items with loadings lower than .4 were also excluded (Howard, 2016). Third, items loaded on two factors or more with the difference between the primary and alternative factor loadings below .2 were dropped out (Howard, 2016). Finally, the items were removed based on the researchers' judgment regarding content validity. Concerning the determination of factors to be retained, it is recommended that their eigenvalues, indicating the extent to which they explain the total variance, should be 1.0 or above. (Pallant, 2010).

Calculating Cronbach's alpha values is an indispensable step after determining the factor model to inspect its reliability, with values greater than .6 considered acceptable in an exploratory study (Hair et al., 2019b). Similarly, Straub et al. (2004) noted that Cronbach's

Alpha and McDonald's Omega must surpass .6 in the post-analysis stage. Hair et al. (2019b) also emphasized that a well-constructed scale should exhibit reliability, indicating consistent scores across repeated applications on different samples.

This section is dedicated to reviewing references regarding the inspection of reliability and robustness, concluding the literature review, and setting the stage for the upcoming method section. The subsequent section presents an in-depth description of the participants, the development of the instrument assessing EFL teachers' attitudes towards ICT use in pedagogical practices at the primary school level, the procedure of data collection, and data analysis.

### 3. Methods

#### 3.1 Participants

The pilot study sample consisted of 202 EFL primary schoolteachers in Vietnam. The average age of the sample was  $M = 33.46$  ( $SD = 6.23$ ). Female teachers accounted for the highest proportion at 80.2%, while male teachers made up a small percentage of 8.4%, and the rest (11.4 %) reported not preferring to say. Most teachers obtained a bachelor's degree (63.9%). 21.8% of the participants acquired an associate's degree, nearly double the figure for those who gained a master's degree (9.3%). Only one participant (equivalent to 5%) completed a doctoral degree. Data were collected in 2021 through convenience sampling using an online platform. The data were initially used to obtain preliminary results regarding EFL primary school teachers' attitudes towards the use of ICT in teaching practice and the influence of demographic characteristics on their attitudes. Second, it was used to develop a reliable questionnaire to measure teachers' attitudes towards ICT use.

The data for the main study were collected from 598 EFL teachers from different primary schools in the Central Highlands of Vietnam, a mountainous area with numerous ethnic minority groups living together. The age distribution varied across the different groups. Specifically, the majority of the participants fell within the age group of 31-35 years (45.5%), followed by those age groups of 26-30 years (21.6%), 40 years and above (16.2%), 36-40 years (13.4%) and 20-25 years (3.3%). There were 41 male participants (6.9%), 514 female participants (86%), and 43 participants preferred not to say (7.2%). In terms of the highest degree, a significant percentage of teachers held a Bachelor's degree (69.6%). 14.9% obtained a master's degree, nearly the same as the figure for those who acquired a degree of association (14%). A small percentage of participants completed a doctoral degree (1.5%).

#### 3.2 Instrument

In this section, the researcher presents justifications for changes made to the original questionnaire and details the adjustments made to enhance the instrument's appropriateness and effectiveness. The instrument is described in detail.

The questionnaire to measure teachers' attitudes towards the use of ICT was mainly adapted from TAC version 6 (Christensen & Knezek, 2009). The original consists of 51 items under nine constructs: *Interest*, *Comfort*, *Accommodation*, *Interaction (E-mail)*, *Concern*,

*Utility, Perception, Absorption, and Significance.* To tailor the questionnaire to the research goals of exploring teachers' attitudes toward ICT in EFL teaching in the Vietnamese context and to examine the impact of demographic characteristics on their attitudes, TAC version 6 underwent a thorough examination by the researcher and two experts in the same fields. As a result, several adjustments were made, which are presented in this section.

It is worth noting that the terms *factor* and *construct* are used interchangeably throughout this study. With the clear idea of developing and checking the reliability of the questionnaire developed based on TAC version 6 in mind, I carefully read each item to detect any potential issues and brainstorm their solutions. First, I selected several items from the previous version of TAC version 6, which might be potential items for factors in the questionnaire used in the Vietnam research context based on my own judgment to enrich the item pool (e.g., *I like using technologies in my teaching at school* under the factor *Interest*, and the item *I find it challenging to learn about technologies* under the factor *Comfort*). This is known as the first step in the process of developing and piloting questionnaires (Dörnyei, 2007). Next, I replaced the term *computers* with the term *technology* instead of ICT, which denotes “a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information” (UNDP, 2001, p. 2). For example, the item *A job using computers would be very interesting* is transformed into *A job using technology is interesting to me*.

For the second step, referred to as the “initial piloting of the item pool,” I collaborated closely with an expert. We carefully reviewed all the items multiple times. During this stage, we identified and agreed upon certain issues, such as complicated language (e.g., *Computers intimidate me*), double-barreled questions (e.g., *Working with a computer makes me feel tense and uncomfortable; I think that working with computers would be enjoyable and stimulating*), and the irrelevance of the factor called *Interaction (E-mail)*.

Our approach involved rewording items with complex language and splitting double-barreled items into two single items, which can be easily understood by EFL primary school teachers at B2 level and above. For the construct *Interaction (E-mail)*, we shared the perspective that email was an unpopular means of interaction between teachers and students at the primary school level. Therefore, measuring EFL primary school teachers' attitudes towards the use of e-mails might not yield in-depth and valuable data (e.g., *The use of Email helps provide a better learning experience, The use of electronic mail (E-mail) makes the student feel more involved*).

It is worth noting that the pilot study was conducted during the Covid-19 pandemic, when online teaching and learning experienced a surge on various online platforms and became the sole option to maintain educational activities over the social distancing period. Accordingly, the interaction between the teachers and students was maintained online. As a consequence, we arrived at the decision to substitute the factor *Interaction (E-mail)* with *Online Interaction*, which focused on measuring teachers' attitudes towards online interaction; for example, *Online environment helps to increase students' talking time, and Online classrooms require less teachers' preparation than face-to-face ones*.

Afterwards, I sought the input of another expert to review the questionnaire, and she suggested excluding the factor *Perception*. This factor comprised five pairs of extreme adjectives positioned at the two ends of the spectrum (e.g., pleasant and unpleasant) and was measured using 7-point Likert scale. It would be challenging to run relevant statistical analyses, compare or combine the responses, and interpret the results, as the other factors of the questionnaire were measured using a 5-point Likert scale. I concur with her regarding these

concerns. Furthermore, this factor aimed to measure how teachers felt about computers, utilizing adjectives such as *comfortable*, *likable*, *pleasant*, *exciting*, which were somewhat covered by other factors, such as *comfort* and *interest*. Finally, as previously mentioned, this questionnaire was developed and validated for use in a smaller study within a larger research project. In this broader study, I conducted interviews with teachers to gain an in-depth understanding of their attitudes towards the use of ICT in EFL teaching and its actual implementation in teaching practice. In my judgment, the decision to eliminate this factor does not result in data loss or violation of theories.

After completing these steps, the final version of the questionnaire consisted of 62 content questions distributed across eight constructs: *Interest*, *Comfort*, *Accommodation*, *Online Interaction*, *Concern*, *Utility*, *Absorption*, and *Significance*. All items under these eight factors were rated on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The developed questionnaire is presented in Appendix 1. In addition, the original version, or TAC version 6, is presented in the Appendix section under Appendix 2.

The questionnaire used in the main study was obtained from an EFA conducted on a pilot study sample. It consisted of 51 items under seven constructs, including *Significance*, *Comfort*, *Interest*, *Online Interaction*, *Concern*, *Absorption*, and *Negative Impact on Society* and 14 questions regarding information background.

### 3. 3 Procedure

Prior to data collection for the pilot study, the questionnaire was created on an online platform (Google form) and sent to two teachers to verbalize their thoughts during the completion of the questionnaire, known as the think-aloud protocol. They showed different understandings of the phrase *learning difficulties*, both of which were accepted in this study. Therefore, no further changes were made after this step. Afterwards, the link to access the questionnaire was sent to my colleagues through private messages on social media, and they were also asked to spread it to their colleagues. The link was posted on pages for EFL primary teachers in Vietnam.

As for the main study, the questionnaire was also created on an online platform (Google Form). E-mail addresses were collected to check for repeated responses from the same respondents. It was posted on various pages for primary EFL school teachers. However, only EFL teachers from primary schools in the Central Highlands of Vietnam were asked to administer the questionnaire because of the research scope. In addition, the link was shared on social media accounts such as Facebook and Zalo, which are widely used in the Vietnamese context. They were also distributed to my colleagues via email and through private messages. Finally, with the valuable support of five officers currently working in five Provincial Departments of Education and Training and responsible for the EFL sector at the primary school level, the questionnaire access link was sent to all primary schools in five provinces in the Central Highlands. This effort contributed significantly to maximizing the response rate of the questionnaire.

### 3. 4 Data analysis

EFA was conducted using the Statistical Package for Social Sciences (SPSS) version 26. The approach for determining the number of factors to extract was Kaiser's criterion, or the

eigenvalue rule, in which only factors with an eigenvalue equal to or greater than 1.0 were retained for further examination (Pallant, 2010). Principal component analysis was chosen as the extraction method because of its ability to generate a more structured and interpretable model (Hair et al., 2019). The Varimax method was chosen, as it was suggested to be the most used by Hair et al. (2019). Factor loadings were categorized as weak ( $<.4$ ), moderate ( $.4$  to  $.6$ ), or strong ( $>.6$ ; Kline, 2014). In this study, only items with factor loadings equal to or greater than  $.5$  were displayed.

Cronbach's alpha ( $\alpha$ ) and McDonald's omega ( $\omega$ ) were then calculated for each new factor of the specified factor model resulting from the EFA, using the pilot study sample and the main study sample. These values must be above  $.60$  to ensure the reliability of the factor structure (Straub et al., 2004).

#### 4. Results and discussion

To test Hypothesis 1, an EFA was conducted to examine the underlying factor structure of the pilot study data. The sample size ( $n = 202$ ) was adequate to run the EFA, satisfying the threshold recommended by Sürücü et al. (2022). An examination of the correlation matrix revealed many coefficients of  $.3$  and above (Tabachnick & Fidell, 2007). The Kaiser-Meyer-Olkin (KMO) was  $.87$ , greater than the threshold of  $.6$  (Kaiser, 1970, 1974), and Bartlett's test of sphericity was statistically significant ( $p <.05$ ; Pallant, 2010), confirming the suitability of the correlation matrix for factor analysis.

After several rounds of eliminating items based on the aforementioned criteria in the literature review section and rerunning the EFA with principal component analysis and the varimax method, a seven-factor model was revealed, with eigenvalues greater than 1, explaining a total of 62.16 percent of the variance. Eleven items were removed: COM3, COM6, ACC2, ACC4, ACC5, ONIN7, UT1, UT7, AB5, AB6, and AB7.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was  $.88$ , and Bartlett's test of sphericity was significant ( $p <.05$ ), indicating that the factor analysis was appropriate. The correlation matrix table was also examined and numerous coefficients above  $.3$  were found (Tabachnick & Fidell, 2007). None of the items had a communality value below  $.5$ . Table 1 presents a rotated matrix with seven constructs.

For Hypothesis 2, Cronbach's alpha and McDonald's omega values were calculated to examine the internal consistency of new constructs using samples from the pilot study and the main study. The results showed that all new constructs had internal consistency. In the pilot study sample, Cronbach's alpha and McDonald's omega coefficients ranged from  $.7$  to  $.9$  (see Table 2). For the main study sample, they fell between  $.6$  and  $.9$  (see Table 2). These findings support Hypothesis 2, providing evidence for the questionnaire's reliability and robustness.

The EFA results suggest a seven-factor model that displays several variances from the questionnaire developed in the previous stage (see Table 1). Thus, Hypothesis 1 was supported, indicating alterations in factor structure. According to Hair et al. (2019b), once the factor solution is obtained, the researcher labels or names the factors. The label or name of a factor represents its variable loading. They also emphasized that variables with stronger loadings had a greater impact on determining the factor name.

Table 1. Factor Loadings for retained items in the Seven-Factor Model

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
SIG6	.795								
SIG3	.780								
SIG5	.774								
SIG4	.747								
SIG1	.738								
UT5	.726								
SIG2	.718								
UT3	.717								
UT2	.679								
UT4	.678								
UT6	.658								
UT8	.578								
COM9		.842							
COM8		.829							
COM5		.807							
COM7		.802							
COM2		.769							
COM1		.725							
ACC1		.713							
COM4		.666							
ACC6		.639							
ACC3		.570							
I6			.768						
I7			.764						
I2			.760						
I3			.746						
I5			.715						
I1			.713						
I4			.684						
ONIN5				.824					
ONIN3				.786					
ONIN6				.772					
ONIN9				.756					
ONIN10				.740					
ONIN8				.664					
ONIN2				.537					
ONIN4				.524					
CON5					.807				
CON4					.803				
CON7					.662				
CON6					.634				
CON9					.511				
AB3						.758			
AB1						.750			
AB4						.654			
AB2						.601			

ONIN1						.649		
CON2						.648		
CON1						.630		
CON8						.542		
CON3						.509		

Note. Factor loadings represent the strength and direction of the relationship between each item and corresponding factor in the model. SIG, UT, COM, ACC, I, ONIN, CON, and AB represent the *Significance*, *Utility*, *Comfort*, *Accommodation*, *Interest*, *Online Interaction*, and *Absorption*, respectively.

Table 2 Cronbach's Alpha and McDonald's Omega Coefficients for Retained Items in the Seven-Factor Model: Pilot Study Sample and Main Study Sample

Factors	Items	Standard item code	Pilot Study Sample		Main Study Sample	
			$\alpha$	$\omega$	$\alpha$	$\omega$
Significance	12	SIG1, SIG2, SIG3, SIG4, SIG5, SIG6, UT2, UT3, UT4, UT5, UT6, UT8	.933	.933	.923	.923
Comfort	10	COM1, COM2, COM4, COM5, COM7, COM8, COM9, ACC1, ACC3, ACC6	.901	.926	.909	.918
Interest	7	I1, I2, I3, I4, I5, I6, I7	.913	.914	.877	.877
Online Interaction	8	ONIN2, ONIN3, ONIN4, ONIN5, ONIN6, ONIN8, ONIN9, ONIN10	.883	.887	.812	.830
Concern	5	CON4, CON5, CON6, CON7, CON9	.846	.847	.787	.793
Absorption	4	AB1, AB2, AB3, AB4	.830	.832	.690	.697
Negative Impact on Society	5	ONIN1, CON1, CON2, CON3, CON8	.723	.723	.604	.605

With these guidelines in mind, the first and second factors were named *Significance* and *Comfort*, respectively. To be more specific, the first new factor in Table 1 consists of 12 items from two former constructs: *Significance* and *Utility*; however, the *Significance* items had much higher factor loadings than the *Utility* items. The second factor in Table 1 was given the name *Comfort* as *Comfort* not only revealed greater factor loadings, but also outnumbered *Accommodation* items.

Subsequently, no change was found in the third construct in the new factor solution (see Table 1) in terms of the number of items and the items themselves compared with the original *Interest* construct. As a result, the factor name *Interest* remains unchanged. Similarly, all *Online*

*Interaction* items, except for ONIN7, which was removed in the previous step, were found to load on one factor, with loadings ranging from .52 to .82. Hence, the label *Online Interaction* remained unchanged.

One of the significant changes was that the items under the original construct *Concern* were split into two groups. A thorough examination of these items revealed that one group consisted of statements measuring concerns about the negative impact of technology use on teachers or students (e.g., *Using technologies prevents me from being creative*, and *If I use technologies, I become addicted to them*), while the other comprised items measuring concerns about the impact on society in general (e.g., *Technologies are changing the world rapidly* and *Technologies can take away people's jobs*). It is clear that this distinction was minor. However, I accepted this solution and gave them the labels *Concern* and *Negative Impact on Society*. In fact, *Negative Impact on Society* was not a new factor name, as it was used in the previous version of TAC version 6 (see Christensen & Knezek, 2009). In other words, the fifth factor of the seven-factor model was named *Concern*, including five items, CON4, CON5, CON6, CON7, and CON9 and *Negative Impact on Society* was the seventh factor with five items, ONIN1, CON1, CON2, CON3, and CON8 (see Table 1).

Finally, the sixth construct of the solution, containing four items (AB1, AB2, AB3, and AB4) with factor loadings between .60 and .75, was assigned the name *Absorption* as it was in the original scale.

The reliability coefficients calculated using the pilot study sample and the main study sample were consistent. Specifically, Cronbach's Alpha and McDonald's omega values, ranging from an acceptable to an excellent level, suggested that the internal consistencies of these factors also fell within the acceptable to excellent level (see Table 2; Straub et al., 2004). Therefore, it can be concluded that the items under these factors within the specified factor model reliably measure their underlying factors. Additionally, this consistency not only demonstrated a degree of robustness in the identified factors across various samples but also supported the generalizability of the questionnaire.

The validated questionnaire for measuring EFL primary school teachers' attitudes towards ICT use in their teaching practice offers significant practical implications for both researchers and educational organizations. Researchers, educational policymakers, and administrators can use this instrument as a reliable tool to assess teachers' attitudes towards the integration of technologies in educational settings. Subsequently, it can help elucidate the actual use of ICT by teachers in pedagogical practices, offering valuable insights for decision makers in tailoring or suggesting development or training programs that aim to foster more effective and sustainable utilization of ICT in classroom teaching.

Apart from the promising results regarding the reliability and generalizability of the questionnaire developed based on TAC version 6, this study, as well as the measure, is not without limitations. First, the majority of participants in both the pilot and main studies were female EFL teachers, leading to a major gender imbalance. This issue may affect the generalizability of the study's findings to settings with different gender compositions. Second, the study was conducted in a given context, namely EFL teaching at the primary school level in Vietnam. Further use of the measure at different levels or in different contexts should be considered to examine its applicability. Hopefully, more studies will be carried out to test the reliability and validity of the questionnaire in various populations in different contexts of English teaching and learning. However, with the promising results found in this study, the



questionnaire, which was developed based on TAC version 6 (Christensen & Knezek, 2009) and later underwent several rounds of refinement, adjustment, and development, is undoubtedly recommended for future use.

## 5. Conclusion

This study aimed to develop and check the reliability of a questionnaire developed based on TAC version 6 (Christensen & Knezek, 2009). The original was built in 2009 and needs to be re-examined for the research purpose of investigating teachers' attitudes towards ICT utilization in EFL teaching due to the fast-paced advancement of technologies and changes in ICT integration over time, especially after the Covid-19 pandemic. A new seven-factor model was revealed after running the EFA using the pilot study data. Compared to the adjusted version of the questionnaire before EFA, items under two factors *Utility* and *Accommodation* were merged into other factors, and one new factor emerged, namely *Negative Impact on Society*, with most items originally coming from the *Concern* factor. Evidence of internal consistency in the newly identified factors was found in both the pilot study and the main study, leading to the conclusion that the questionnaire developed based on TAC version 6 showed a degree of stability and robustness across samples and gained reliability for future use.

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## Appendix 1

### Questionnaire

Thank you for participating in this study.

My name is Vuong Thi Hoan. I am a doctoral student at the Faculty of Humanities, Eötvös Loránd University, Hungary. I am doing a piece of research on teachers' attitudes towards the use of Information Communication Technology (ICT) in language teaching. Therefore, this questionnaire aims to ask teachers at primary schools in Vietnam for information about their background and attitudes towards ICT use in language teaching. If you have any question, please do not hesitate to contact me at [hoanvuong@student.elte.hu](mailto:hoanvuong@student.elte.hu)

The questionnaire should be completed by you only. It should take about 15-20 minutes to complete.

This is not a test so there are no “right” or “wrong” answers. I am interested in your personal opinion. Please give your answers sincerely. If you do not know an answer precisely, your best estimate will be adequate for the purposes of the study.

Your answers will be kept confidential. No blank in the questionnaire requires your name fulfillment. They will be combined with answers from other teachers to calculate totals and averages in which no single teacher can be identified.

Thank you very much for your help.

### Teachers' attitudes towards ICT use

Part 1						
Instruction: select one level of agreement that best describes how you feel						
1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree						
1	A job using technologies is interesting to me.	1	2	3	4	5
2	I want to learn about technologies which I can use in my teaching.	1	2	3	4	5
3	I can explore a lot of interesting things when I use technologies in my teaching	1	2	3	4	5
4	I like using technologies in my teaching at school.	1	2	3	4	5
5	I think that working with technologies is enjoyable.	1	2	3	4	5
6	I find it exciting to learn about technologies.	1	2	3	4	5
7	I think that working with technologies is stimulating.	1	2	3	4	5

<b>Part 2</b>						
Instruction: select one level of agreement that best describes how you feel						
1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree						
1	I feel anxious when I use technologies.	1	2	3	4	5
2	Working with technologies makes me feel frightened.	1	2	3	4	5
3	I find it challenging to learn about technologies.	1	2	3	4	5
4	Some technologies can be difficult to understand.	1	2	3	4	5
5	Working with technologies makes me feel worried.	1	2	3	4	5
6	I do not feel confident when it comes to working with technologies.	1	2	3	4	5
7	I feel anxious even when I think of using technologies.	1	2	3	4	5
8	Using technologies can be annoying.	1	2	3	4	5
9	Working with technologies makes me feel nervous.	1	2	3	4	5
<b>Part 3</b>						
Instruction: select one level of agreement that best describes how you feel						
1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree						
1	I prefer not to take a job where I have to work with technology.	1	2	3	4	5
2	I don't use technologies in my teaching if I don't have to.	1	2	3	4	5
3	I can't think of any way to use technologies in my teaching.	1	2	3	4	5
4	I probably never use some technologies.	1	2	3	4	5
5	Learning about technologies is a waste of time.	1	2	3	4	5
6	I see the technologies as something I rarely use in my daily life.	1	2	3	4	5
<b>Part 4</b>						
Instruction: select one level of agreement that best describes how you feel						
1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree						
1	I prefer online instruction.	1	2	3	4	5
2	Online environment helps to increase students' talking time.	1	2	3	4	5
3	Online instruction helps students understand the content easily.	1	2	3	4	5
4	Online classrooms require less teachers' preparation than face-to-face ones.	1	2	3	4	5
5	Online environment helps to increase the quality of interaction between teachers and students.	1	2	3	4	5
6	On-line environment makes it easy to communicate with students in class	1	2	3	4	5
7	Online communication is less stressful for the students than face-to-face one.	1	2	3	4	5
8	Students feel comfortable to answer questions presented in online classes.	1	2	3	4	5
9	Online environment provides a good teaching experience.	1	2	3	4	5
10	Online instruction is more efficient than in-person one.	1	2	3	4	5

<b>Part 5</b>						
Instruction: select one level of agreement that best describes how you feel						
1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree						
1	Technologies are changing the world too rapidly.	1	2	3	4	5
2	Technologies have the potential to control our lives.	1	2	3	4	5
3	Technologies can take away people's jobs.	1	2	3	4	5
4	Using technologies prevents me from being creative	1	2	3	4	5
5	Technologies isolate people by preventing social interactions among user	1	2	3	4	5
6	If I use technologies, I become addicted to them.	1	2	3	4	5
7	The use of technologies in teaching distracts students' attraction.	1	2	3	4	5
8	Some teachers rely too much on technologies.	1	2	3	4	5
9	Working with technologies makes me feel isolated from other people	1	2	3	4	5
<b>Part 6</b>						
Instruction: select one level of agreement that best describes how you feel						
1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree						
1	Technologies could help learners with learning difficulties understand	1	2	3	4	5
2	Technologies help me with teaching activities.	1	2	3	4	5
3	Technologies improve the overall quality of life.	1	2	3	4	5
4	Technologies are necessary tools in educational settings.	1	2	3	4	5
5	Technologies help to improve education.	1	2	3	4	5
6	Technologies can increase my productivity.	1	2	3	4	5
7	Using technologies helps me to be a good teacher.	1	2	3	4	5
8	Technologies can be useful instructional aids in almost all subject areas.	1	2	3	4	5
<b>Part 7</b>						
Instruction: select one level of agreement that best describes how you feel						
1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree						
1	I like reading about technologies.	1	2	3	4	5
2	I always try to use technologies in my teaching as much as I can.	1	2	3	4	5
3	I like to talk to others about technologies	1	2	3	4	5
4	When there is a technological problem that I can't immediately solve, I stick with it until I have the answer.	1	2	3	4	5
5	It is fun to figure out how technologies work.	1	2	3	4	5
6	I don't like the challenge of solving problems with technologies.	1	2	3	4	5
7	If a technological problem is left unsolved in a class, I continue to think about it afterward.	1	2	3	4	5
<b>Part 8</b>						
Instruction: select one level of agreement that best describes how you feel						
1: strongly disagree 2: disagree 3: undecided 4: agree 5: strongly agree						
1	Technologies can encourage creativity in students.	1	2	3	4	5
2	All students should have an opportunity to learn with	1	2	3	4	5

	technologies at school.					
3	Having technological skills helps one get a good job.	1	2	3	4	5
4	It is important for students to learn with technologies in order to be informed citizens.	1	2	3	4	5
5	Technologies can provide students with different methods of learning.	1	2	3	4	5
6	Students should understand the role technologies play in society.	1	2	3	4	5

### Background information

1. What gender do you identify as?

- Male  
 Female  
 Prefer not to answer

2. What is your age?

3. What is the highest degree or level of education you have completed?

- Degree of Associate  
 Degree of Bachelor  
 Degree of Master  
 Degree of Doctor of Philosophy or higher

4. What is your current employment status?

- A contract teacher  
 A permanent teacher

5. What type of school are you teaching at?

- A private school  
 A public school

6. Where is your school located?

- North Vietnam  
 Central Vietnam  
 South Vietnam  
 Central Highlands, Vietnam

7. Please specify your school district

- Rural  
 Urban

8. I am teaching at

- 1<sup>st</sup> grade  
 2<sup>nd</sup> grade  
 3<sup>rd</sup> grade  
 4<sup>th</sup> grade  
 5<sup>th</sup> grade

9. How many years of teaching experience do you have?

10. Have you ever attended any training courses on technology use in language teaching organized by the Department of Education and training?

Yes

No

11. Have you ever attended any online training courses on technology use in language teaching?

Yes

No

12. Do you want to add any comments on technology use?

## Appendix 2

### Teachers' Attitudes Toward Computers (Christensen & Knezek, 2009)

This questionnaire is derived from well-validated portions of several attitudinal surveys that have been used with teachers in the past. We will use your responses to help develop a profile of how teachers view technology. Please complete all items, even if you feel that some are redundant. This should require about 10 minutes of your time. Usually, it is best to respond with your first impression without giving a question much thought. Your answers will remain confidential.

ID:	Use the ID assigned to you or if there is no assigned ID, use the				
Group:	last four digits of your social security #				
<b>Part 1</b>					
Instructions: Select one level of agreement for each statement to indicate how you feel. SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree					
	SD	D	U	A	SA
1. I think that working with computers would be enjoyable and stimulating. (186)	1	2	3	4	5
2. I want to learn a lot about computers. (103)	1	2	3	4	5
3. The challenge of learning about computers is exciting. (211)	1	2	3	4	5
4. I like learning on a computer. (181)	1	2	3	4	5
5. I can learn many things when I use a computer. (9)	1	2	3	4	5
<b>Part 2</b>					
Instructions: Select one level of agreement for each statement to indicate how you feel. SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree					
	SD	D	U	A	SA
1. I get a sinking feeling when I think of trying to use a computer. (263)	1	2	3	4	5
2. Working with a computer makes me feel tense and uncomfortable. (230)	1	2	3	4	5
3. Working with a computer makes me nervous. (17)	1	2	3	4	5
4. Computers intimidate me. (227)	1	2	3	4	5
5. Using a computer is very frustrating. (18)	1	2	3	4	5
<b>Part 3</b>					
Instructions: Select one level of agreement for each statement to indicate how you feel.					



SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree					
	SD	D	U	A	SA
1. If I had a computer at my disposal, I would try to get rid of it. (150)	1	2	3	4	5
2. Studying about computers is a waste of time. (192)	1	2	3	4	5
3. I can't think of any way that I will use computers in my career. (74)	1	2	3	4	5
4. I will probably never learn to use a computer. (154)	1	2	3	4	5
5. I see the computer as something I will rarely use in my daily life. (123)	1	2	3	4	5
<b>Part 4</b>					
Instructions: Select one level of agreement for each statement to indicate how you feel.					
SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree					
	SD	D	U	A	SA
1. The use of electronic mail (E-mail) makes the student feel more involved. (282)	1	2	3	4	5
2. The use of E-mail helps provide a better learning experience. (284)	1	2	3	4	5
3. The use of E-mail makes a class more interesting. (281)	1	2	3	4	5
4. The use of E-mail helps the student learn more. (283)	1	2	3	4	5
5. The use of E-mail increases motivation for class. (280)	1	2	3	4	5
<b>Part 5</b>					
Instructions: Select one level of agreement for each statement to indicate how you feel.					
SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree					
	SD	D	U	A	SA
1. Computers are changing the world too rapidly. (142)	1	2	3	4	5
2. I am afraid that if I begin to use computers I will become dependent upon them. (215)	1	2	3	4	5
3. Computers dehumanize society by treating everyone as a number. (138)	1	2	3	4	5
4. Our country relies too much on computers. (135)	1	2	3	4	5
5. Computers isolate people by inhibiting normal social interactions among users. (144)	1	2	3	4	5
6. Use of computers in education almost always reduces the personal treatment of students. (176)	1	2	3	4	5
7. Computers have the potential to control our lives. (134)	1	2	3	4	5
8. Working with computers makes me feel isolated from other people. (241)	1	2	3	4	5
<b>Part 6</b>					
Instructions: Select one level of agreement for each statement to indicate how you feel.					
SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree					
	SD	D	U	A	SA
1. Computers could increase my productivity. (202)	1	2	3	4	5
2. Computers can help me learn. (204)	1	2	3	4	5
3. Computers are necessary tools in both educational and work settings. (226)	1	2	3	4	5
4. Computers can be useful instructional aids in almost all subject areas. (175)	1	2	3	4	5
5. Computers improve the overall quality of life. (207)	1	2	3	4	5

6. If there was a computer in my classroom it would help me to be a better teacher. (163)	1	2	3	4	5				
7. Computers could enhance remedial instruction. (168)	1	2	3	4	5				
8. Computers will improve education. (162)	1	2	3	4	5				
<b>Part 7</b>									
Instructions: Choose one location between each adjective pair to indicate how you feel about computers.									
Computers are:									
1. unpleasant	1	2	3	4	5	6	7	pleasant	(44)
2. suffocating	1	2	3	4	5	6	7	fresh	(50)
3. dull	1	2	3	4	5	6	7	exciting	(49)
4. unlikable	1	2	3	4	5	6	7	likeable	(41)
5. uncomfortable	1	2	3	4	5	6	7	comfortable	(46)
<b>Part 8</b>									
Instructions: Select one level of agreement for each statement to indicate how you feel.									
SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree									
	SD	D	U	A	SA				
1. I like to talk to others about computers. (98)	1	2	3	4	5				
2. It is fun to figure out how computers work. (193)	1	2	3	4	5				
3. If a problem is left unsolved in a computer class, I continue to think about it afterward. (85)	1	2	3	4	5				
4. I like reading about computers. (100)	1	2	3	4	5				
5. The challenge of solving problems with computers does not appeal to me. (57)	1	2	3	4	5				
6. When there is a problem with a computer that I can't immediately solve, I stick with it until I have the answer. (69)	1	2	3	4	5				
<b>Part 9</b>									
Instructions: Select one level of agreement for each statement to indicate how you feel.									
SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree									
1. It is important for students to learn about computers in order to be informed citizens. (96)	SD	D	U	A	SA				
2. All students should have an opportunity to learn about computers at school. (95)	1	2	3	4	5				
3. Students should understand the role computers play in society. (172)	1	2	3	4	5				
4. Having computer skills helps one get better jobs. (97)	1	2	3	4	5				
5. Computers could stimulate creativity in students. (199)	1	2	3	4	5				

Thank you for your time.

# A contrastive analysis of emotions and thoughts across Arabic and English as foreign languages in narratives written by bilingual Jordanian university students studying in Hungary

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The present study aimed to explore bilinguals' narratives in their two languages by examining their emotions by comparing the number of adjectives and adverbs used to describe a photo. The study also examines whether the thoughts expressed in their narratives are similar in Arabic and English. Data were collected from 18 Jordanian Arabic-English bilingual university students residing in Hungary, through narratives formed to describe a thematic apperception test photo. To compare the number of adjectives and adverbs, data were analyzed using SPSS 20, and qualitative thematic analysis was conducted to explore the themes in the narratives. The results of this study indicate that when participants used their first language (L1), they did not tend to employ a greater number of adjectives and adverbs in their writing. In other words, the use of adjectives and adverbs in L1 does not appear to be more frequent than in other languages. Findings also indicate that participants would describe the same photo differently by presenting different thoughts when using their L1 and L2. This study presents further evidence that bilinguals use their two languages differently.

**Keywords:** emotions, thoughts, bilinguals, narratives, cross-linguistic

## 1. Introduction

In an increasingly globalized world, bilingualism has become a compelling subject of exploration and analysis, presenting a unique intersection of linguistic, cognitive, and sociocultural dimensions.

Bilingualism is generally known to involve the ability to use two or more languages in daily life (Grosjean, 2013). In 1996, it was estimated that approximately two-thirds of the world's children were raised in bilingual families and environments (Crystal 2004). Bilingualism is not only a common phenomenon but also a valuable skill in our increasingly interconnected world, opening doors to diverse cultures, enhancing cognitive abilities, and facilitating effective communication across linguistic boundaries (Bialystok 2009).

In light of the escalating global population of bilinguals, there has been a surge in research dedicated to understanding their language use, with particular emphasis on the

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interplay between bilingualism and emotions. While earlier investigations into bilingualism often disregarded the emotional dimension, contemporary scholarship has shifted its focus to examining the intricate relationship between bilinguals' language choices and their emotional expression. This evolving research landscape underscores the significance of emotional aspects in the realm of bilingualism, a viewpoint supported by numerous scholars including Dewaele (2005, 2007, 2008, 2010).

Dewaele (2005) indicated that it is important to incorporate emotions and emotion words into L2 textbooks, as incorporating emotions into textbooks enhances the learning process by making them engaging and memorable. Emotion-related vocabulary and expressions provide context for language learning, enabling learners to understand how words are used in various emotional situations.

According to Vygotsky (2012), being able to convey the same idea in other languages helps a person perceive language as one specific system among many, and improves the understanding of linguistic processes. In other words, individuals gain a deeper understanding of how language works by recognizing common principles and patterns across different languages. This understanding enhances their ability to analyze and compare linguistic structures and mechanisms, making them more adept at navigating diverse linguistic systems.

Research into bilingualism has focused on the relationship between first language (L1) and second language (L2) in individuals; however, there is still a lack of studies conducted to explore the relationship between L1 and L2, and emotions and thoughts in bilinguals. To my knowledge, no studies have been conducted to investigate emotions and thoughts, particularly in the case of Jordanian students who study in a foreign country, namely Hungary. Understanding the emotional and cognitive experiences of Jordanian students in a foreign academic environment is important, as this has not been explored before. These findings provide valuable insights into this particular group's experiences and challenges. The current study aimed to explore the relationship between bilingualism and Jordanian students' emotions in L1 and L2 by analyzing written narratives. This study also aimed to explore Jordanian students' thoughts by comparing themes appearing in their L1 and L2 narratives. By conducting this study, a deep understanding of participants' emotions and thoughts in L1 and L2 will be gained, which will help bilinguals better understand themselves and how their emotions and thoughts are expressed in L1 and L2 to better express themselves in both languages.

## **2. Literature review**

In the literature review section, the exploration begins with bilingualism and emotions, presenting various definitions. Subsequently, previous studies on emotions and thoughts were discussed. Finally, the section concludes by discussing narratives in L1 and L2.

### *2.1. Bilingualism and second language learning*

Researchers have attempted to find a proper definition of bilingualism for those who can be considered bilingual. Presenting an accepted definition of bilingualism and who can be considered bilingual is not an easy task. Franson (2011) states that individuals with different variables, such as age at language acquisition, language proficiency, and language use, may all be categorized as bilinguals. Having many aspects related to bilingualism provides a wide range

of definitions. Bloomfield (1994) argues that a bilingual person must have native-like competence in both languages, according to which bilinguals are people who are as competent as natives in their two languages and who have equal fluency levels in their first and second languages. The previous definition was considered to belong to the maximal view of bilingualism, arguing that one must develop native-like proficiency in both languages in order to be regarded bilingual.

However, this perspective faces challenges from other researchers who have offered alternative definitions. According to Butler and Hakuta (2004), bilinguals are “individuals or groups of people who obtain communicative skills, with various degrees of proficiency, in oral and/or written forms, to interact with speakers of one or more languages in a given society”.

Grosjean (2013) proposes that “bilingualism is the regular use of two or more languages or dialects”. According to him “bilinguals are individuals who can use two languages alternately or produce meaningful utterances in two or more languages to achieve successful communication who use two or more languages (or dialects) in their everyday lives.”

In the current study, Grosjean's definition was adopted, which views bilinguals as those who regularly use two or more languages or dialects in their daily communication. This definition acknowledges the practical use of multiple languages by the participants in this study.

## *2.2 Emotions and thoughts in bilinguals*

Emotions are vital to human life; they give humans the ability to function in a given environment and keep people in societies better connected (Harkins & Wierzbicka, 2001). Many studies on bilingualism have focused on the relationship between language, emotion, and thoughts. According to Harkins and Wierzbicka (2001), how people understand and recognize their emotions depends on the vocabulary in their L1. “Different languages are linked with different ways of thinking as well as different ways of feeling; they are linked with different attitudes, different ways of relating to people, and different ways of expressing one’s feelings (Wierzbicka, 2004).

Many studies conducted on emotion and language compare the emotional connections people have with their L1 and L2. Research conducted on emotional expressions in bilinguals indicates that they usually do not express their emotions in the same way, depending on the language used. Previous research has indicated that bilingual L1 is considered a language of emotions. Marcos (1976) indicated that L2 is often related to intellectual functioning and is relatively detached from emotions, whereas L1 is more connected to the heart and used to express emotions.

Several crucial questions have been raised regarding the relationship between bilingualism and emotions. Scholars have attempted to determine whether emotions are universal, experienced in the same way as a reaction to the same situations across all cultures, or whether they are culture-specific. Markus and Kitayama (1991) investigated differences in the way individuals express their emotions by comparing Easterners and Westerners and how they see themselves. In the West, the self is perceived as independent and self-contained, while in the East, people consider themselves more interdependent (Markus & Kitayama, 1991). They argued that individuals with independent personalities put themselves first; their goals and wishes are always their top priority, and as a result, their emotions are expressed more freely and openly, which shows the freedom to express negative and positive feelings. However,

interdependent individuals have more emotional bounds (Markus & Kitayama, 1991). Individuals in collectivist cultures have the concept of putting their group's interests first before their own.

Pavlenko (2006) claims that individuals experience the same emotions, but various languages might provide various means to enable us to access our feelings and emotions and build the way we express our emotions. Her study on Russian–English bilinguals revealed that some emotional concepts are not the same in these two languages in many aspects (Pavlenko, 2006). She argues that in English, emotions are considered states and expressed using adjectives, but in Russian, emotions are considered processes and expressed using verbs.

In a study of Russian emotion vocabulary in American learners' narratives, Pavlenko and Driagina (2007) found that in individualistic, independent cultures, individuals favor using nouns and verbs to express their emotions. In contrast, in interdependent cultures, people mostly use emotion verbs, which are exclusively used to express emotions. With regard to the Arabic context and more specifically, the Jordanian context, there is a lack of studies on the relationship between bilingualism and emotions and thoughts. To my knowledge, no study has been conducted to investigate bilingual Jordanian students' emotions and thoughts in the languages they speak.

### *2.3 Adjectives and adverbs as indicators of emotional content*

The current study compared participants' emotions and thoughts in their two languages. Although the claim that the number of adjectives and adverbs are indicative of emotional content is commonly accepted, it is important to note that specific studies and authors have contributed to substantiating this argument. Researchers in linguistics and sentiment analysis have explored the relationship between linguistic features, including adjectives and adverbs, and emotional expressions. For instance, in their study of sentiment analysis, Pang and Lee (2008) emphasized the significance of adjectives and adverbs in identifying sentiment polarity in texts. They argued that these linguistic elements play a crucial role in expressing emotions and opinions and their analysis demonstrated that the presence and distribution of adjectives and adverbs strongly correlate with the emotional tone of the text.

Similarly, Turney and Littman (2003) researched the classification of sentiments in product reviews. They found that the frequency of specific adjectives and adverbs was a key factor in determining the sentiments of reviews, highlighting the importance of these linguistic features in conveying emotional content. Pennebaker and King (1999) conducted studies on expressive writing and emotional disclosure in psychology and language. They observed that individuals who disclosed their emotions through writing tended to use more emotional words, including adjectives and adverbs, suggesting a connection between linguistic expressions and emotional release.

The above studies collectively support the idea that the use of adjectives and adverbs is a reliable indicator of emotional content in a language. These findings reinforce the understanding that the choice and frequency of these linguistic elements significantly contribute to the emotional tone and sentiment expressed in written or spoken communication.

The decision to focus the current study exclusively on adjectives and adverbs in comparing emotions in Arabic and English narratives is grounded in a well-established body of research and theory within linguistics and sentiment analysis. The choice to exclude other parts

of speech such as nouns and verbs is deliberate and guided by the specific contributions of past studies and authors.

Adjectives and adverbs have consistently emerged as crucial linguistic elements in expressing emotions and sentiments across various studies. The literature review highlights the work of Pang and Lee (2008), Turney and Littman (2003), and Pennebaker and King (1999), who demonstrated the significant role that adjectives and adverbs play in identifying sentiment polarity, determining sentiment in product reviews, and expressing emotions in written disclosures.

By focusing on adjectives and adverbs, the current study aligns with a growing body of evidence that these linguistic features are reliable indicators of emotional content in language. These studies emphasize the importance of choice, frequency, and distribution of adjectives and adverbs in conveying emotional tone and sentiment. Consequently, limiting the scope to adjectives and adverbs allows for targeted investigation of specific linguistic elements that have been consistently associated with emotional expression.

In Arabic linguistic tradition, the choice and placement of adjectives and adverbs are recognized as powerful tools for conveying emotional nuances. The rich morphological and syntactic structure of the Arabic language allows for precise expression of emotions through careful selection and arrangement of these descriptive elements. Unlike other languages, where emotional content might be distributed across various parts of speech, Arabic places particular emphasis on the role of adjectives and adverbs in shaping the emotional tone of communication.

The linguistic nuances of Arabic, including its use of adjectives and adverbs, have been extensively explored in Arabic linguistics and literature. Scholars have highlighted the emotive power embedded in Arabic, paying specific attention to how adjectives and adverbs contribute to the expressive quality of texts. By focusing on these linguistic features, the current study not only aligns with broader trends in sentiment analysis but also acknowledges the unique linguistic characteristics of Arabic, where adjectives and adverbs are recognized as prominent vehicles for conveying emotions.

In summary, the decision to exclusively examine adjectives and adverbs in the context of Arabic and English narratives is not only methodologically grounded, but also considers linguistic nuances specific to Arabic. Recognizing the particular role that adjectives and adverbs play in expressing emotions in Arabic further justifies their isolated investigation in this study, offering a targeted and culturally informed approach to understanding emotional content in narratives.

#### 2.4. Narratives in L1 and L2

Narratives are often used to express feelings and share experiences (Johnstone, 2004). Prior studies have focused on writing using a second language to demonstrate the relationship between first language (L1) and second language (L2) writing. Ostler (1990) conducted a study to compare English texts written in four language groups (i.e., English, Arabic, Spanish, and Japanese). He concluded that ESL students who completed a writing task were influenced by the styles used in their own cultures.

Han *et al.* (1998) in their study compared oral narratives about personal experiences presented by Korean, Chinese, and American preschool children and suggested that Asian children mention their memories in a brief, general, and less emotional way, while American

children describe their memories in a more detailed and emotional way; they also include their own opinions and beliefs. Investigating cross-cultural narratives has shown that linguistic expressions that provide and show the narrator's ideas, feelings, and perspectives differ between Asian and American narrators. Han *et al.* (1998) claim that American narrators express and reveal their emotions and feelings more openly than Asian narrators.

Some researchers believe that Chinese parents focus on societal values and morals because of their connection with Confucianism (Chao, 1995). Mullen and Yi (1995) claim that Chinese children are more affectionate and sensitive towards people's feelings, but they tend to keep their feelings to themselves and do not show them. On the contrary, American parents encourage their children to express their feelings and interests openly because their culture favors individuality. Chao (1995) argues that American parents and caregivers tend to push their children to express their emotions and feelings more than the Chinese do.

Söter (1988) studied narratives written in English by Arabic and Vietnamese second language learners and English-speaking students in Australia. Their task was to write a bedtime story in English for presentations to young children. Söter's results revealed that English-speaking students directly presented the plot with a clear sequence of events. Vietnamese ESL students tended to focus on the relationships between the settings and characters, while Arabic participants focused their attention on describing characters' personality traits. A previous study enabled Söter to conclude that using second language writing and narratives can help reveal individuals' native cultural thinking and ideas.

Lee (2003) compared narratives written in English by two groups: native speakers of English, and Chinese speakers learning English. Participants in both groups were college students whose task was to form a story in English using only a group of pictures presented to them. The results indicated that Chinese learners of English produced more clauses containing a coda by informing people about what to do or what not to do.

Stavans (2003) conducted a study to compare narratives written by second-language learners in their two languages. The participants were bilingual adults of Hebrew-English and English-Hebrew languages. She examined the influence of L1 on L2 narratives and compared them with monolinguals. Her results revealed that English monolinguals use a mixture of tenses and do not overuse or prefer a specific tense in their narratives. Hebrew monolinguals showed a clear preference for using the past tense, and English-Hebrew bilinguals used the past tense more often than English monolinguals when telling a story using their L1 English. She concluded that in narration and storytelling, bilinguals and monolinguals differ in various ways.

While many studies have revealed that culture has an effect on second-language writing and narratives, other studies have revealed contradictory results. Mohan and Lo (1985) argued that having similarities between the English and Chinese languages can help students with the writing process more positively than having negative interference.

Prior studies indicate that investigating narratives in language bilinguals provides deeper insights into their emotions and thoughts, and enables researchers to gain a better understanding of bilingualism. The current study aims to fill the gaps in the literature and complement research on emotions and thoughts in L1 and L2 by analyzing written narratives.



### 3. The present study

In light of the literature and research gaps presented above, an exploratory qualitative research approach was adopted to achieve the aim of this study. Qualitative data is important in emotional research. According to Dewaele and Li (2020), as emotions are subjective and fleeting experiences, the use of quantitative data to investigate them is insufficient. According to Ross and Rivers (2018), few qualitative studies have explored emotions. Although several studies have examined emotions and thoughts in second language communication, much remains to be discovered about how Jordanian bilinguals living in Hungary present their emotions and thoughts in their L1 and L2 narratives. Examining how Jordanian bilinguals living in Hungary express their emotions and thoughts in narratives in both their native language (L1) and second language (L2) holds significance beyond filling a research gap. This research is vital because it can lead to a deeper understanding of the sociocultural, psychological, and linguistic dynamics of play in this specific bilingual community. This knowledge is essential for developing more culturally sensitive language education programs, fostering effective intercultural communication, and promoting social integration among bilinguals. Additionally, this study contributes to the broader field of linguistics and psychology, helping us to understand how bilingualism affects emotional expression, cognitive processes, and the intricate relationship between language and emotions.

#### 3.1 Research questions

By exploring the following questions, valuable insights are aimed at contributing to the emotional experiences and linguistic expressions of Jordanian bilinguals in Hungary, thereby enhancing their understanding of bilingualism, emotions, and language. The research questions were as follows.

- 1) Do Jordanian students use adjectives and adverbs differently in their L1 and L2, and if so, what is the difference?
- 2) Do the narrative descriptions of photographs by Jordanian students in their native language (L1) and second language (L2) vary in terms of the thoughts and emotions conveyed, and if so, what is the difference?

#### 3.2 Context

This study explores the emotional and linguistic experiences of Jordanian bilinguals living in Hungary. The decision to adopt a qualitative research approach stems from the recognition that emotions are inherently subjective and transient phenomena, making quantitative data alone insufficient for comprehensive investigation. While prior research has provided valuable insights into emotions, only a limited number of qualitative studies have thoroughly explored them, especially within the unique context of Jordanian bilinguals residing in Hungary. This context is significant as it offers a window into the sociocultural, psychological, and linguistic dynamics within this specific bilingual community.

This study holds broader significance beyond addressing these gaps, shedding light on the sociocultural, psychological, and linguistic intricacies of this specific bilingual community. This

has implications for the development of culturally sensitive language education programs, effective intercultural communication, and promotion of social integration among bilingual individuals. Moreover, it contributes to the fields of linguistics and psychology, advancing our understanding of how bilingualism shapes emotional expressions and cognitive processes in the unique context of Jordanian bilinguals in Hungary.

### *3.3 Methods*

#### *3.3.1 Participants*

Participants were recruited through an announcement made on a Facebook group for international students studying in Hungary asking only Jordanian students to participate in this study. Eighteen adult Arabic students participated in the study. The original number was larger; however because of the number of participants, this was the final number. There were nine males (50%) and nine females (50%). The participants' ages ranged from 24 to 36 years, with a mean age of 28 years ( $M = 28$ ,  $SD = 4$ ). They all lived in Hungary and were students at the same university. The level of education ranged from a bachelor's degree to a master's degree at a university, with a master's degree being the most frequent level (60%). All participants speak Arabic (L1) and English (L2) fluently. Arabic is their first language, and they all have a very similar proficiency level in English, as all of them obtained a score above 74 in the TOEFL IBT or 6 in the IELTS. This requirement was set by the university to enroll in the program. All participants started learning English at the primary school level and interacted with both English and Arabic daily. They all spent a similar amount of time speaking in English; only one of the participants reported using English between two and five hours a day, while the rest spent between five and eight hours each day using English.

The selection of Jordanian participants residing in Hungary is indicative of the convenience sampling approach used in this study. This choice likely stems from practical considerations such as the researcher's accessibility to this specific population and the availability of a community of Jordanian residents in Hungary. Additionally, the decision to include participants in Hungary may also reflect an interest in exploring the cross-cultural aspects of emotional expression, acknowledging the potential influence of different cultural contexts on linguistic patterns. However, it is crucial to recognize that convenience sampling may impact the generalizability of the findings, and the results should be interpreted within the context of the chosen sample, considering the potential variations in emotional expression that may exist within the broader Jordanian population or in different cultural settings.

#### *3.3.2 Instrument*

To address the aforementioned research questions, a picture from the Thematic Apperception Test (TAT) (Murray & Morgan, 1935) was selected. The Thematic Apperception Test typically consists of a series of ambiguous images or scenes, and the individual being assessed is asked to create a narrative or story for each image. The stories they generate are believed to reflect their subconscious thoughts and feelings, providing valuable insights into their inner world, personal experiences, and psychological functioning. It was presented by American psychologists, Henry

Murray and Christina Morgan in 1930. The TAT is considered one of the most popular personality tests (Richards, 1948). TAT can be used for many reasons. In the current study, a TAT picture was used to express participants' feelings. TAT is often used to allow individuals to express their feelings indirectly (Richards, 1948). A TAT picture was also used to help explore the thoughts of participants by exploring the themes presented (Richards, 1948). Picture 4 was selected, in which a man turns away from a woman who is grabbing his shoulder. The specific choice of this particular photo in the Thematic Apperception Test (TAT) was deliberately made. It features both men and women in the scene, making it an interesting stimulus for exploring participants' thoughts and emotions in a context involving both genders. Using this image, researchers aimed to observe how individuals perceive and construct narratives when presented with scenarios involving male and female characters.

A methodological approach was adopted to ensure the validity and reliability of the results. Participants were divided into two groups: one group started by describing the picture in their first language (L1) and then switched to their second language (L2), whereas the other group began with their second language (L2) and then transitioned to their first language (L1). This sequence was designed to eliminate any potential practice effects that could skew responses. By ensuring that half of the participants began in L1 and the other half in L2, this study aimed to provide a more accurate and unbiased understanding of how individuals interpret and narrate stories based on the same image regardless of their language sequence.

### *3.3.3 Procedures*

The participants were given instructions in their first language, Arabic, via email to write a story describing what was happening, what had happened before, and what they expected to happen in the future. They were also asked to describe what they thought the characters were thinking and feeling. Participants had to write stories in the first language, Arabic, or the second language, English, and send back the stories written in an email. After three weeks, the participants were sent the same pictures again and instructed to tell a story in their other language. The stories were medium length, and each story had to contain at least 150 words; however, no maximum length was set. Texts were collected and saved as Word documents. The participants were informed about the study without revealing any information about the actual purpose.

### *3.3.4 Data analysis*

To determine whether participants' narratives in L1 were more emotional than those in L2, the number of adjectives and adverbs in the narrative was compared using two Excel sheets to organize the results, one for all Arabic stories and the other for English stories. Each participant was assigned a number and adjectives and adverbs were counted.

Quantitative content analysis was used to explore the themes presented in the narratives. All stories were collected and placed in Word documents. First, data were analyzed quantitatively. The number of adjectives and adverbs were counted manually in each story, and their percentages were counted using a calculator. The number of words in each story was counted, and the percentages of adjectives and adverbs in each text were calculated. SPSS 20 was used to compare the means and check whether the results were significant.

A qualitative analysis of the texts was also conducted to explore the thoughts and themes presented. Thematic analysis was carried out, and this approach was chosen because it best suited the research questions. According to McLeod (2011), thematic analysis is a flexible, straightforward approach. Braun and Clarke (2006) outlined a six-stage process for thematic analysis that included data familiarization, code generation, theme generation, theme review, theme definition, theme naming, and final write-up. These stages were meticulously followed to ensure reliability of the results. All narratives were reread, and written keywords were used to describe the main topic; then, the number of each topic was listed to indicate how many participants chose the same topic. To compare bilinguals' thoughts in both languages, the stories were analyzed, and each story was given a keyword according to the topic the participants gave. The keywords were entered into an Excel spreadsheet. Keywords were selected according to the frequency of appearance in the topic, and finally, the numbers were compared to ensure that all results were reliable. All the steps for the analysis were conducted and checked twice to ensure that all the numbers were accurate to avoid any mistakes and have precise results. A new Excel sheet was used to classify the texts according to the topics; each topic had to be mentioned next to the number of times the same topic occurred.

#### 4. Results

These results are presented below to show the variation in topics selected by participants in both languages. The results highlight the contrast in the number of adjectives and adverbs used by participants in both languages, indicating variations in their usage between L1 and L2.

##### *4.1 Percentage of adjectives and adverbs used by participants in both languages*

Participants tended to employ a slightly greater number of adjectives in their first language and fewer adjectives in their second language. An Independent sample t-test was carried out to compare the means of the adjectives in both languages and check if the results were significant. The results revealed a significant difference in the scores between L1 narratives ( $M = 3.03$ ,  $SD = .84$ ) and L2 narratives ( $M = 3.35$ ,  $SD = .80$ ),  $t(2.1) = 14$ ,  $p < .001$ . These findings suggest that participants use more emotions in their L1 when compared to the emotional significance of the L2. This indicates that participants employed significantly more adjectives in their first language than in their second language.

The results of an independent sample t-test examining the use of adverbs in Arabic and English stories revealed no significant differences. The mean percentage of adverbs in both languages was 50% and the t-test did not yield a statistically significant result ( $p > 0.05$ ). This suggests that participants exhibited a comparable frequency of adverb usage in both their first and second languages, indicating a lack of significant differences in emotional expression between the two languages.

Overall, while the use of adjectives demonstrated a statistically significant distinction, suggesting a tendency for higher emotional expression in the first language, the results regarding adverbs did not support such differences. It is crucial to interpret these findings with

caution, recognizing that the observed emotional expression disparities may not be practically meaningful and that the generalizability of the results may be limited.

Although not aimed at broad generalizability, these qualitative findings provide a rich foundation for further research and theoretical development of the nuanced relationship between language and emotions, advancing our understanding of this intricate interplay in a bilingual context. Therefore, despite their limited generalizability, the results of this study hold substantial significance for advancing scholarly discourse and guiding future investigations into the intersection of language and emotion.

#### 4.2 Theme recurrence

The results indicated that participants in L1 described the picture differently, while the participants did not describe the same picture the same way in their L1 and L2. The picture depicts a young woman trying to stop a young man by holding her shoulders. Approximately 67% of the participants, when using their L1, described the husband controlling his wife, which makes sense in Arabic culture, as it is very common for men to prevent their wives from working or going out. Some 10% saw it as the man going into a fight and stopping him, and the rest, 23%) thought that the husband was leaving his wife and she was stopping him. In English, the results were different: 62% described the man as trying to protect the lady, 23% picked the theme of the husband leaving his wife, and the remaining 10% saw the male as trying to leave the lady.

For example, one participant described the same photo differently, depending on the language used.

##### *English version:*

*Leave me alone I can't believe after all the love we went through you cheated on me" he said angrily leaving the girl who was nothing before she met him. He was the result of her fame after arranging a job meeting with his friend who was filming a movie and looking for an actress. "Please," she said, "I can't live without you, it was a mistake and I didn't know it would go that far". "I will go to find that jerk and beat him to confess where he put my money that he stole while you are sleeping, and then you will never see my face again"*

##### *Arabic version:*

*كانت صباحًا جميلًا يوم الأحد، وكانت السيدة الشابة تقف في الشارع عندما حاول مجموعة من الشبان في الشارع التقرب منها. عندما وصل زوجها لمقابلتها، حكى له عن ما حدث للتو. كان زوجها غاضبًا وأصيب بالجنون، قائلاً: "سأذهب وأعلم هؤلاء الأشخاص الذين لا قيمة لهم درسًا هامًا وسأجعلهم يندمون على كل كلمة قالوها". حاولت السيدة الوقوف بين يديه لترجوه ألا يذهب، قائلة: "من فضلك عزيبي، لا تذهب، ألا ترى مدى خطورتهم؟ أخشى أن يضرّوك"، لكن الرجل أصر على الذهاب. ذهب ودارت معركة كبيرة بينه وبينهم، حتى جاءت الشرطة وأخذتهم جميعًا إلى مركز الشرطة للتحقيق في الحادثة.*

*Translation of the Arabic version:*

*It was a beautiful Sunday morning; the young lady was standing on the street when a group of young men in the street tried to hit her. When her husband arrived to meet her, she told her about what had just happened and she was very scared and worried. He was furious and went crazy saying "I will go and teach those low lives an important lesson and will make them regret every word they say". The lady, extremely worried about her husband, tried to strongly beg him not to go, saying "Please dear don't go. Can't you see how dangerous they look? I am afraid they may harm you". But the man insisted on going. He went and had a very big fight with them until the police came and took them all to the police station to investigate the accident. The lady felt sad, and nervous, and deep down she felt that it was her fault.*

An explanation of the change in the stories between the two languages could be that bilinguals' thoughts are affected and connected to the language they use, so they think differently. Another explanation could be that the participants were instructed to write in a certain language, so their minds directed them to form a story about the language and culture they are using.

## **5. Discussion**

One of the aims of this study was to analyze the differences in the ways bilinguals wrote their narratives in L1 and L2. The first research question aimed to check whether bilingual narratives in L1 are more emotional than in L2 by comparing the number of adjectives and adverbs used. The results reveal that in the Arabic stories, the percentage of the participants' adjectives is 55%, while in the English stories, the percentage was only 45%. The findings of the current study indicate that L1 narratives written by Jordanians are not more emotional than are L2 narratives. The findings are in line with Pavlenko (2006), who argues that L1 is not always considered the language of emotions and L2 the language of detachment, speakers may use these languages to index a variety of affective stances, and they may also mix two or more languages to convey emotional meanings" (p. 131). The results of her study on language choice in emotional exchanges between multilingual parents and their children (Pavlenko, 2008) suggest that the reason for having a language that is more emotional than the other does not have to do with the language being the first or the second language, but it has more to do with language dominance.

Extending this discussion, Altarriba and Basnight-Brown (2007) support the idea that language dominance and context play pivotal roles in determining emotional expressions. Their study on bilingual emotionality found that individuals may express emotions more vividly in the language they consider more dominant, corroborating the current study's emphasis on language dominance as a determinant of emotional content.

Moreover, Dewaele's (2005, 2007, 2008) exploration of emotional expression in multilingual individuals echoes the findings of the current study, emphasizing the influence of various factors such as the age of acquisition, proficiency, and acquisition context. Dewaele's research underscores the nuanced nature of emotional expression, challenging the simplistic view that emotional intensity is determined solely by language hierarchy.

Adding another layer to the discussion, Schrauf (2000) conducted a study on emotional expression in the narratives of multilingual individuals and found that language proficiency

significantly influenced emotional tone. Similar to the current study, Schrauf's findings underscore the importance of considering proficiency levels when understanding emotional nuances across languages.

Moving on to the second research question, which explored whether participants exhibited different thought patterns in their two languages, literature on linguistic relativity was referenced. Whorf (1956), Lucy (1992), and Imai and Gentner (1997) investigated cross-linguistic differences in cognitive processes and suggested that language structure can influence thought patterns. The current study aligns with this literature by proposing that bilinguals may present different themes when expressing themselves in L1 and L2.

Additionally, research by Pavlenko and Driagina (2007) on the use of particular parts of speech in collectivist versus individualistic cultures adds another layer of complexity to the discussion. Their findings align with the current study's emphasis on cultural influences on linguistic expression and emotional communication, highlighting the need to consider cultural contexts when interpreting the results.

In conclusion, this study contributes to the ongoing discourse on language, emotions, and thoughts in bilingual contexts. These findings are in line with previous research by Altarriba and Basnight-Brown, Dewaele, Schrauf, Pavlenko, and Driagina, collectively emphasizing the intricate interplay of language dominance, proficiency, and cultural influences in shaping emotional expressions and thought patterns in bilingual individuals. This complexity underscores the need for a nuanced understanding of the relationships between language, emotions, and cognition in diverse linguistic and cultural contexts.

## 6. Conclusion

The current study provides a general overview of bilingual Jordanian students who speak both Arabic and English fluently and live in a bilingual environment in which they constantly use both languages. This study focused on how they expressed their emotions and thoughts. The main purpose of this research was to analyze how bilinguals express themselves in narratives written in both languages, with a focus on their ideas and use of adjectives and adverbs, which were analyzed and compared to check the difference in the way they were used.

The results indicate that many participants do not use more adjectives and adverbs in their L1 narratives than in their L2 narratives, suggesting that L1 narratives are not more emotional than L2 narratives and that Jordanian students who live in Hungary do not express more emotions in their L1 narratives than in their L2 narratives. Furthermore, the findings of the study revealed that bilingual Jordanian students living in Hungary produce different narratives in their first and second languages, as most international students in Hungary think differently when they change the language they use. The participants provided a completely different story when they changed their L1 to L2.

The significance of the current study is not only to complement studies on bilingualism but also to link bilingualism to other fields of study, such as psycholinguistics and sociolinguistics. Including bilingual variables in research on emotions and thoughts would enrich these domains and reveal the holistic nature of bilingualism. Another important aspect of this study is that it aims to generate insights that will be useful for researchers in the fields of multilingualism and L2 learning in the future. L2 textbook authors need to pay more attention to the emotional aspect of language use (Pavlenko & Driagina, 2007) and the way bilinguals think

in different languages. Therefore, it is worthwhile to focus more on how emotions and thoughts are related to bilingualism and second language learning, which helps L2 learners become more aware of their emotions in L2 and how they are expressed since they are different from their L1. It is expected that teachers become aware of the emotions, thoughts, and differences between the two languages.

Like all research, this study has some limitations. A limitation of the current study is the time gap between the two narrative writing sessions. Due to time constraints, the researcher had to ask the participants to write another story again after three weeks, which may not be considered a long time and may cause a practice effect in which participants may have a memory of the narratives they wrote the first time.

Research conducted on international students in Hungary to examine their emotions and thoughts in these two languages is limited. Future studies, follow-up interviews, and questionnaires can be conducted to include participants' own opinions about their emotions and thoughts in the two languages they speak and to check whether the findings that the researcher came up with are in line with the way they feel, which would be of great value in achieving triangulation and increasing the truthfulness of the results. Future studies should also be conducted on bilinguals and multilinguals to compare language and thought in three or more languages. Further, future studies should compare the emotions of males' and females' in the different languages they speak.

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**Appendix**

**Thematic apperception test picture:**





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**VUONG Thi Hoan** is currently a PhD candidate in Language Pedagogy and English Applied Linguistics at Eötvös Loránd University, Hungary. Her research focuses on the utilization of Information and Communication Technology (ICT) in EFL teaching, teachers' attitudes towards it and related policy documents. She has been teaching EFL to learners of all ages for about 13 years in Vietnam and Hungary. Vuong Thi Hoan is a core member of the Doctorate Research Group at the VietTESOL Association and also serves as a reviewer for the organization.