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CURRICULA FOR VIOLIN INSTRUCTION IN MACEDONIAN PRIMARY MUSIC SCHOOLS WITH AN EMPHASIS ON VIOLIN TECHNIQUES

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Abstract

This paper aims to present the analysis and comparison of the curricula and syllabi for violin instruction in Macedonian primary music education from the end of the Second World War to the present day. The paper observes the violin schools and instructional books that were used and are still used in the training process, as well as those that have, over time, lost their place in teaching practice. Additionally, the structure and content of the curricula and syllabi are presented, along with teaching objectives by year of study, materials for annual exams, and the minimum requirements pupils are expected to master during the school year, with particular emphasis on technical development. The paper also examines the number of lessons per week and the admission requirements for violin studies in primary music education.

Keywords: violin pedagogy, violin techniques, primary music education, curricula, Macedonian music culture.

1. Introduction

The development of violin pedagogy represents a significant segment of Macedonian music culture, which experienced particularly intensive growth after the end of the Second World War (Bužarovski, 2015). During this period, the establishment of an institutional framework for music education was accompanied by the development of curricula and syllabi that defined the objectives, content, and methodological approaches of the teaching process. Music education within institutions existed earlier (*see* Jordanoska, 2019; Novakov, 2014; Kostadinovski, 1983; Bužarovski & Jordanoska, 2015); however, there is no available data confirming that it was conducted according to formally established curricula and syllabi.

The curricula and syllabi (i.e., teaching plans and accompanying programs) constitute a relevant source for understanding pedagogical approaches, violin schools, and educational priorities in different time periods. The analysis of curricula and syllabi makes it possible to trace changes in teaching objectives, the structure of program content, technical requirements, and criteria for evaluating pupils achievement. This paper is based on an analysis of official curricula and syllabi adopted from the early 1950s to contemporary documents regulating nine-year primary music education.

2. Curricula for primary music education (1952)

According to the 1952 curricula for primary music schools, the violin was studied as a major, with one lesson per week from first to sixth grade (violin education lasted six years) (Table 1). Admission requirements for the violin, cello, and piano departments included completion of the second grade with excellent or very good academic performance, age between 9 and 13 (with exceptions for particularly talented pupils, who could be admitted outside this age range), good physical health, and successful completion of an entrance exam assessing rhythm, pitch discrimination, and musical memory.

Subject	Grade					
	I	II	III	IV	V	VI
Major	1	1	1	1	1	1
Solfeggio and dictation	2	2	2	2	2	2
Music theory	/	/	/	/	1	1
Choir	/	/	2	2	2	2
Orchestra	/	/	/	/	2	2
Total lessons per week	3	3	5	5	8	8

Table 1: Curricula for the violin, cello, and piano departments (1952)

3. Curricula for primary music schools (1996)

The 1996 curricula and syllabi for primary music schools introduced, for the first time, clearly defined objectives and tasks of primary music education, the organization and content of instruction, as well as provisions for supplementary, extended, and additional instruction, and for cultural and public activities. Pupils were admitted to the music school after passing an entrance exam assessing pitch discrimination, rhythm, and sense/logic of melody. During the preparatory grade, pupils' physical, psychological, and musical development was monitored and evaluated, and a written assessment was prepared at the end of the year; this grade had a selective function. Violin classes could begin at the age of six, and particularly talented pupils could complete their education in a shorter period and continue into secondary music education. According to this curriculum, violin instruction began in the second semester of the preparatory grade with one lesson per week and continued from first to sixth grade with two lessons per week (Table 2). Lessons lasted 30 minutes from first to third grade and 40 minutes from fourth to sixth grade.

Subject	Grade						
	Prep	I	II	III	IV	V	VI
Instrument (from II semester)	1	2	2	2	2	2	2
Solfeggio with music theory	2	2	2	2	2	3	3
Orchestra (choir, chamber ensembles)	/	/	/ (2)	/ (2)	2	2	2
Total lessons per week	3	4	4 (6)	4 (6)	6	7	7

Table 2: Curricula for six-year music education (piano, violin, viola, cello, and flute)

4. Curriculum for primary music and ballet education (2018)

According to the 2018 *curriculum* (the singular is used to match the title of the document in Macedonian – *Nastaven plan*), primary music education for violin lasts nine years and begins in the first grade of primary school. Pupils may also enroll in higher grades, but no later than the third grade, and are required to pass exams covering the previous grades' curriculum. For later enrollment, the duration of education must not be shorter than six years. The violin is studied from second to ninth grade with two lessons per week. Lessons last 30 minutes from second to sixth grade and 40 minutes from seventh to ninth grade (Table 3).

Obligatory subject	Grade								
	I	II	III	IV	V	VI	VII	VIII	IX
Solfeggio with basic music theory	2	2	2	2	2				
Instrument		2	2	2	2	2	2	2	2
Solfeggio						2	2	2	2
Music theory						1	1	1	1
Total lessons per week	2	4	4	4	4	4	5	5	5

Table 3: Curriculum for nine-year primary music education (piano, violin/viola, cello)

5. Syllabus for primary music schools (1953)

The 1953 syllabus issued by the Council for Education of the People's Republic of Macedonia is the oldest document available. Its authors include the founders of Macedonian music culture and post-war string instruments pedagogy: Ilija Nikolovski, Ladislav Palfi, Živko Firfov, Stevan Krstevski, Trajko Prokopiev, Stefan Gajdov, Sergei Mihajlov, Aleksandar Šalevski, Dančo Šindilovski, Nada Organdžieva, Asparuh Hadžinikolov, Todor Balkanski, Ettore Balestri, Friedrich Bauman, Gino Giovi, Todor Skalovski, Josif Sion, Grigor Smokvarski, Svetozar Marković, Kiril Spirovski, Slavko Krivec, Josif Videc, and Gjoko Popović. The violin syllabus was divided into technical exercises, auxiliary instruction books, études, performance repertoire, duets (from third to sixth grade), and program for exam. With regard to technical development, this paper focuses on technical exercises, scales, and études (Table 4), as well as annual exam requirements (Table 5).

Grade/class	Technical exercises / Violin methods	Études
I	O. Ševčík – Op. 6, Books I and II Ševčík – Op. 2, Book I, No. 3 (basic bowings)	/
II	O. Ševčík – Op. 6, Books III and IV O. Ševčík – Op. 2, Book I, Nos. 3 and 4 Marjanović–Grbić – Scales, Book I	H. Sitt – Op. 32, Book I (5 études of choice) or F. Wohlfahrt – Op. 45, Book I (5 études)
III	O. Ševčík – Op. 6, Books V, VI, and VII (II and III positions) O. Ševčík – Op. 2, Book I, Nos. 4 and 5 Marjanović–Grbić – Scales, Books I and II	H. Sitt – Op. 32, Books I, II, III (II and III positions) F. Wohlfahrt – Op. 45, Book I H.E. Kayser – Op. 20, Book I
IV	O. Ševčík – Op. 6, Books VI and VII (excluding Nos. 11 and 17) O. Ševčík – Op. 7, Books I and II (partial) O. Ševčík – Op. 2, Nos. 5 and 6	H. Sitt – Op. 32, Books II and III H.E. Kayser – Op. 20, Books I and II (selection) F. Wohlfahrt – Op. 45, Book II
V	O. Ševčík – Op. 7, Books I and II O. Ševčík – Op. 2, Books I and II O. Ševčík – Op. 8 (selection) O. Ševčík – Op. 9 (selection)	H. Sitt – Op. 32, Books III and IV H.E. Kayser – Op. 20, Book III J.F. Mazas – Op. 36, Book I Blumenstengel – Op. 35
VI	O. Ševčík – Op. 7, Books I and II O. Ševčík – Op. 8 O. Ševčík – Op. 9 O. Ševčík – Op. 1, Books I and II	J.F. Mazas – Op. 36, Books I and II (partial) J. Dont – Op. 37 Kreutzer–Ševčík, Book I (5 études)

Table 4: Technical exercises and études according to the 1953 syllabus; (Technical exercises are presented as core material, while scales are covered in auxiliary methods/schools.)

Grade/class	Scales	Études/Exercises	Concert/Composition or other
I	/	O. Ševčík: Op. 6, Book II – one study	Two melodies
II	Major one-octave scales and triads up to four accidentals	Two études from previously studied material / one performed from memory	One composition / performed from memory
III	All major scales with triads and minor scales up to four accidentals	Two études from previously studied material / one from memory	Two compositions / one by Yugoslav or Slavic composers
IV	Two-octave major and minor scales with triads	Two études from previously studied material / one from memory	One concerto and one composition by Yugoslav or Slavic composers
V	Three-octave major and two-octave minor scales with triads	Two études	Same as in Grade IV
VI	Three-octave scales with triads / slow tempo	O. Ševčík – Op. 9, Nos. 14 and 16; two études: R. Kreutzer, J.F. Mazas	Concerto: first or third movement; one composition from Yugoslav or Slavic repertoire

Table 5: Exam requirements according to the 1953 syllabus

6. Syllabi for primary music schools (1996)

The 1996 violin syllabi included the aims and objectives of violin instruction, the instructional content (with teaching objectives for each grade), instructional books (Table 6), repertoire works (from second to sixth grade), an obligatory minimum of required material (from second to sixth grade), concertinos (from third to fifth grade), large-scale works (concertos and sonatas in sixth grade), and the

exam program (Table 7). From first to sixth grade, the syllabus defined a structured technical progression: correct posture and instrument positioning; systematic development of left- and right-hand technique; mastery of intervals in first position, followed by gradual expansion to higher positions; introduction and refinement of bowing techniques (*détaché*, *legato*, *martelé*, *staccato*, *sautillé*, *spiccato*); development of stable intonation; introduction of vibrato; and introduction of double stops along with advanced technical demands (Table 8).

Grade	Violin methods
I	D. Marković – Beginner Violin School, Book I K. Rodionov - Beginner Violin School P. Stojanović – Elementary Violin School, Book I O. Ševčík – Op. 6, Beginner Violin School, Book I K.A. Fortunatov – Selected Études for Violin, Book I Other method books of an appropriate level
II	D. Marković – Beginner Violin School, Books I and II K. Rodionov - Beginner Violin School P. Stojanović – Elementary Violin School, Book I B. Čermák – Violin School for Beginners L. Dénes/Deneš – Violin School, Book I O. Ševčík – Op. 6, Beginner Violin School, Book I K.A. Fortunatov – Selected Études for Violin, Book I
III	H. Sitt – Book I D. Marković – Violin School, Books II and III K. Rodionov – Beginner Violin School H.E. Kayser – Études for Violin P. Stojanović – Elementary Violin School, Book II Baran–Čermák – Varna School for Beginners F. Wohlfahrt – Études for Violin M. Lányi/Lanji & L. Dénes/Deneš – Violin School, Book II Rodionov–Fortunatov – Selected Études, Book I (Book II) O. Ševčík – Op. 6, Beginner Violin School, Book II L. Marjanović – Selected Études for Violin H. Hummel – Selected Études for Violin, Book I
IV	F. Wohlfahrt – Études for Violin H.E. Kayser – Études for Violin D. Marković – Violin School, Books II and III K.A. Fortunatov – Selected Études, Books II and III P. Stojanović – Elementary Violin School, Books II and III H. Sitt – Books I and II M. Lányi/Lanji & L. Dénes/Deneš – Violin School, Books III and IV O. Ševčík – Op. 6, Beginner Violin School, Books III and IV E. Geneva – Position Changes Other materials of a similar technical level
V	D. Marković – Violin School, Book III K.A. Fortunatov – Selected Études, Book III H. Schradieck – Book I (selected studies) O. Ševčík – Op. 6, Book VI O. Ševčík – Op. 2 and Op. 1, Book I (selection) E. Geneva – Position Changes A. Grigorian – Scales J.F. Mazas – Études F. Wohlfahrt – Études H.E. Kayser – Études H. Sitt – Études, Books II and III

VI	K. Fortunatov – Selected Études, Book III J.F. Mazas – Études Kreutzer–Yampolsky – Études H. Schradieck – Book I O. Ševčík – Op. 1, Book I; Op. 8 and Op. 9 A. Grigorian – Scales H.E. Kayser – Études H. Sitt – Études, Book III

Table 6: Technical exercises, scales, and études according to the violin syllabi for primary music education (1996)

Grade	Scales	Études/Exercises	Concert/Composition	Minimum required content
I	One-octave or two-octave scale with two triads (root-position and second-inversion triads).	Four short exercises (études) or three longer ones.	Two compositions (songs).	/
II	One scale with two triads in two octaves.	/	Two compositions or one larger-form work (concertino, first movement).	4–5 major and minor scales with triads in one octave; 1–2 scales in two octaves; 10–12 exercises (études); 6–8 compositions (songs).
III	One scale with two triads in two octaves (*détaché*, *legato*, or a combination), possibly in first–third position.	Two études.	Two compositions or concertino (first movement), variations, or sonatina.	6–8 scales in two octaves; 8–10 études; 7–8 compositions; 1–2 large-scale works (concertino, sonatina, variations, etc.).
IV	One scale with triads in first, second, and third position, in two octaves.	Same as in Grade III	Concertino or concerto (first or third movement), sonatina, or variation.	8–10 scales with five triads in first, second, and third position; 8–10 études; 6–8 compositions; 1–2 large-scale works (first or second and third movements of concertinos, sonatas, variations).
V	One scale with five triads and two sixth chords (bowings: *portato*, *staccato*, Viotti bowing, *spiccato*, etc.).	Same as in Grade III	One composition; one large-scale work: concerto (first or second and third movements), variations, pre-Classical sonata (two movements), etc.	4–6 two-octave scales with five triads and two seventh chords from first to fourth position; 8–10 études; 4–6 compositions; two large-scale works (concertino, concerto, sonatina, sonata in two movements, variations).
VI	One three-octave scale with five triads, two	Same as in Grade III	One composition; concerto (first	Five three-octave scales with five triads; one to two scales with double stops; 6–8 études; 4–6

	seventh chords, and double stops.		or second and third movements) or a complete sonata.	compositions; two large-scale works.

Table 7: Exam requirements and obligatory minimum of required material according to the 1996 syllabi; (The exam repertoire is performed from memory.)

Grade	Technical development
I	Introduction to the instrument and correct posture; basic functions of the left and right hand in performance; finger placement in first position; one-octave scales (D major); mastery of all intervals in first position: semitone, whole tone, third, and fourth; note values: whole, half, and quarter notes; bow strokes: *détaché* and *legato*.
II	Consolidation of intonation in first position; all semitone combinations (between fingers 1–2, 2–3, 3–4, and open string–first finger) in first position; rhythmic figures: eighth notes, sixteenth notes, and triplets; refinement of *détaché* and *legato*; bow strokes: *portato* and *martelé*.
III	Development of left-hand articulation; mastery of various rhythmic patterns and their combinations; refinement of previously studied bow strokes; introduction of the *staccato*; introduction to second and third position.
IV	Mastery of second and third position; shifts between first–second and first–third positions; stable intonation in all positions; expansion of bowing techniques; introduction and development of vibrato.
V	Refinement of left-hand articulation; shifts between first–second–third positions; introduction to fourth and fifth position; consolidation of intonation in all positions; advanced techniques (initial double stops); intensive work on vibrato.
VI	Refinement of all studied positions and shifts; clean intonation and clear articulation in all positions; study of double stops; secure command of multiple bowing techniques.

Table 8: Technical development according to the 1996 syllabi

7. Current syllabi for nine-year primary music education (2009–2014)

The current syllabi are organized into nine sections, including objectives by developmental period, concrete annual objectives divided into *Melody and Technique* and *Rhythm* chapters, didactic recommendations, minimum of required material (from third to ninth grade) (Table 10), assessment criteria, classroom space design and teaching staff requirements (Veskovska, 2024). A wide range of teaching materials is recommended, including the methods of Ševčík, Fortunatov, Wohlfahrt, Kayser, Mazas, Kreutzer, Dont, as well as the Suzuki method and the methods of Dejan Marković and Jova Jordanova (Table 9). The current syllabi outline a gradual and systematic technical progression, beginning with correct posture, basic left- and right-hand functions, elementary bow strokes, and intervals in first position, followed by step-by-step introduction of new positions, shifts, bowing techniques, and vibrato. By the upper grades, the focus shifts to advanced technical mastery, including higher positions, refined intonation, double stops and chords, complex bowings, and the consolidation of all positions and techniques (Table 11).

Grade	Violin methods
II	Marković; K. Rodionov; Sh. Suzuki (Vol. I); J. Jordanova – beginner methods selected by the teacher
III	Marković; Rodionov; Suzuki; Jordanova or similar beginner methods selected by the teacher
IV	Same as in Grade III
V	Marković III; Fortunatov II and III; Suzuki III; Wohlfahrt; Geneva; Jordanova; Chrestomathy II and III; Z. Manevski II and III

VI	Marković III; Fortunatov III; Wohlfahrt; Geneva; Jordanova II; Schradieck; Mazas – Études; Sitt II–III
VII	Fortunatov III; Wohlfahrt; Kayser; Geneva; Jordanova II; Schradieck; Mazas; Sitt II–III; Kreutzer; J. Dont
VIII	Same materials as Grade VII (excluding Fortunatov III and Jordanova)
IX	Same collections as in Grade VIII (excluding Sitt II; additionally, F. Fiorillo is used)

Table 9: Violin methods according to the current syllabi

Grade	Scales	Études/Exercises	Concert/Composition (Piece)	Minimum required content
II	1. Scale (D major, A major, G major) in one or two octaves and two triads; or 2. Scale (D major, A major, G major) in one or two octaves and two triads	1.Four short études 2.Two études	1. Two compositions 2. Concertino	(No strictly defined minimum scope)
III	1. Scale (D major, A major, G major) in two octaves and two triads; or 2. Scale (D major, A major, G major) in two octaves and two triads	1. Four short études of different character 2. Two études of different character	1.Two short compositions selected by the teacher 2. Concertino or first movement, or second and third movements of a concerto, selected by the teacher	4–5 major and minor scales with triads in one octave; 1–2 scales in two octaves with triads in two octaves; 10–12 études; 6–8 compositions (songs)
IV	Scale (A major, D major, C major, C minor, D minor, G minor) in two octaves and two triads (*détaché*, *legato*, *martelé*) in first–third position	Two études of different character	Concertino (sonatina or variations); one composition (piece) selected by the teacher	6–8 major/minor scales with triads in two octaves in first–third position; 10–15 études (exercises) in first–third position; 1–2 large-scale works (concertino, sonatina, variations); 6–8 compositions/pieces (songs)
V	Scale (C major, C minor, B-flat major, B major, B minor, F major, D major, D minor, A major, A minor) in two octaves and two triads in first–third or second position	Same as in Grade IV	Concertino or concerto (first or third movement), sonatina, or variations	6–8 major/minor scales with triads in two octaves in first–second–third position; 10–12 études (exercises) in first–second–third position; 6–8 compositions/pieces (songs); 1–2 large-scale works (concertino, concerto, variations, sonatina)
VI	Scale (C major, C minor, B-flat major, B major, B minor, G	Same as in Grade IV	Concertino or concerto (first or second and third	4–6 major and minor scales with triads in two or three octaves; 8–10

	major, G minor, A major, A minor) in two or three octaves and triads in first–third or first–third–fifth position (for gifted pupils)		movements), or sonatina, or variations	études (exercises) in first, second, and third position (for advanced pupils also fourth and fifth position); 4–6 compositions/pieces (songs); 1–2 large-scale works (concertino, concerto, variations, sonatina)
VII	Scale (G major, G minor, A major, A minor) in three octaves with triads (first–third–fifth position)	Same as in Grade IV	Concerto (first or second and third movements) or sonata/sonatina or variations	4–5 major and minor scales with triads in three octaves; 6–8 études (exercises) in first–third, first–third–fifth, and fourth position (for advanced pupils also fifth and sixth position); 4–6 compositions/pieces (songs); 1–2 large-scale works (concerto, variations, sonatina)
VIII	Scale (A major, A minor, D major, D minor) in three octaves with triads (first–third–fifth position)	Same as in Grade IV	Same as in Grade VII	Same as in Grade VII
IX	Scale (A major, A minor, D major, D minor, B-flat major, C major, C minor) in three octaves with triads (first–third–fifth position)	Same as in Grade IV	Same as in Grade VII	Same as in Grade VII

Table 10: Exam requirements and obligatory minimum of required material according to the current syllabi; (The exam repertoire is performed from memory.)

Grade	Technical development
II	Basic functions of the left and right hand in performance; correct body posture while playing; basic bow strokes (*détaché*, *legato*); intervals in first position (semitone, whole tone, third, fourth); semitone between the second and third fingers in first position, and, where possible, also between the first and second fingers; basic note values (whole, half, quarter, eighth, and, where possible, sixteenth notes).
III	Intervals (semitone, whole tone, third, fourth) in first and third position; precise intonation; placement of the left-hand fingers with semitone and whole-tone distances between the open string and first finger, and between the first–second, second–third, and third–fourth fingers within first position.
IV	Introduction to third position (correct placement of the left hand and familiarity with pitches in this position) and shifts between first and third position and back, via open string and finger shifts; *martelé*; combination of bow strokes; consolidation of all intervals (semitone, whole tone, third, fourth) in first and third position; development of articulation and memory.
V	Introduction to second position; shifts between first and second position and back via open string, semitone, and whole tone; consolidation of all intervals in first, second, and third position; *staccato*; initial vibrato; more advanced rhythmic structures.

VI	Pitches in fourth and fifth position; mastery of these positions and shifts to them; development of bowing technique; refinement of vibrato; development of precise intonation in all positions.
VII	Introduction to sixth position; introduction to the technique of playing double stops (thirds, sixths, and octaves); *staccato* and *sautillé*.
VIII	Introduction to seventh position; for more advanced pupils, *spiccato*; further work on double-stop technique; three-octave scales with varied rhythms and bowings.
IX	Consolidation of all positions; advanced position-shifting technique; double stops and chords; complex passages; *ricochet*.

Table 11: Technical development according to the current syllabi

5. Conclusion

Despite the time distance between the examined curricula, a strong continuity can be observed in the core didactic framework for violin instruction. The most consistently used materials across all periods include the methods of Otakar Ševčík (Opp. 1, 2, 6, 7, 8, 9), Konstantin Fortunatov's études, the technical exercises and études by Hans Sitt (Op. 32), Franz Wohlfahrt (Op. 45), Heinrich Ernst Kayser (Op. 20), Jacques Féréol Mazas (Op. 36), Rodolphe Kreutzer, and Jacob Dont (in the final grades as preparation for secondary music education), as well as Asatur Grigorian scales in higher grades. This indicates that the foundational approach to technical development has remained largely unchanged and is rooted in Western European pedagogical tradition.

The 1953 curriculum emphasizes Ševčík's technical exercises as the core system of technical development, with early introduction of positions and transitions and limited flexibility due to strictly defined material per grade. The 1996 curriculum significantly expands the selection of schools and études and allows greater freedom in choosing materials of equivalent technical level. The current curricula further broaden the range of recommended materials and introduce the Shin'ichi Suzuki method and the Jova Jordanova method.

Based on the projected technical development throughout primary violin education, and comparing the 1996 curriculum with the current curricula (the 1953 curriculum does not contain text defining technical development objectives for each year of study), it can be concluded that despite the different duration of education, both programs follow an established model. This model includes correct posture and instrument positioning; proper placement and coordination of the left and right hands; systematic acquisition of intervals (i.e., semitone, whole tone, third, and fourth) in first position and subsequently in higher positions; the gradual introduction and refinement of bowing techniques (*détaché*, *legato*, *martelé*, *staccato*, *sautillé*, *spiccato*, and *ricochet*); the development of stable intonation; the progressive expansion of positions (II–VII); the introduction and development of vibrato; the introduction of double-stop technique; and the performance of scales in one, two, and three octaves with triads in first position, second position, first–third position, and first–third–fifth position.

In the six-year educational model, higher technical demands are observed within a shorter time span (second and third positions are introduced simultaneously, and the study of double stops and higher positions begins earlier). In contrast, the nine-year educational model allows a longer period for working on technical tasks and for the gradual introduction and stabilization of intonation in different positions (second and third positions are introduced progressively and separately), as well as for bowing techniques, while advanced techniques (sixth–seventh position, double stops, and complex bowings) are developed during the period from seventh to ninth grade.

Comparing the six-year and nine-year educational models, higher technical demands are evident within a shorter time frame in the six-year system, whereas the nine-year system allows for more gradual technical development, stabilization of intonation, and progressive introduction of advanced techniques in the final grades.

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THE ASSESSMENT OF STUDENTS' ACHIEVEMENTS: PARENTS' PERCEPTIONS

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Abstract

This qualitative research examines the parents' perception of the students' assessment, regarding its objectivity with the aim to get more profound insights on the assessment practice. The sample consists of 200 parents. The analysis rests on the qualitative content analysis and the inductive-interpretative method, which enable the interpretation of the parents' attitudes and experiences without using statistical procedures.

The results showcase that the assessment of the students' achievements is experienced as a complex and sensitive process which do not always fulfill its pedagogical function. According to the parents, the grade is related to the subjectivity of the teachers and their personal impressions, which create a feeling of unjustice and inequality. Parents also point out to other aspects that are connected with the grade, such as the motivation, anxiety, professional aspect, their own behavior, and the unclear criteria and feedback. If taken into consideration, these insights may contribute to the improvement of the assessment practices.

Key words: Students, assessment, parents, attitudes.

1. Introduction

The educational process is a complex and multidimensional system in which various elements intertwine and depend each on another. This process is not only a simple transfer of information, but a dynamic structure as well, which comprises of the teaching content, the methods for teaching and learning, the interaction between the teachers and the students, and the socio-emotional context in which the learning occurs. The assessment stands out as a tool which connects all of these elements.

The assessment is a crucial factor in the educational process because it determines the level of knowledge, skills, and competencies which students gain in the teaching. Besides that, the assessment has a significant role in directing the learning, in increasing the students' motivation, and in creating their relations with the schools.

The assessment is a key element in the educational process through which the students' achievements are monitored and evaluated, in relation to the settled educational goals. As an integral part of the teaching process, the assessment has an important role because it directs and upgrades the teaching and learning process.

In this context, Bloom (1971) states that the assessment in the classroom should serve as an instrument which will support the learning and that the evaluation, as a highest cognitive level, represents the students' competencies to think critically and to evaluate upon strong arguments. Therefore, according to him, the successful assessment measures the quantity of the acquired knowledge, but also encourages the students to achieve higher levels of thinking activity. Bloom says that the assessment is a continuous process which provides information on the students' growth and on the efficacy of the teaching. From this perspective, the assessment should be systematic, transparent and based on clearly defined criteria. While in the traditional teaching, the grade is perceived as a final confirmation of the students' success, nowadays, in the contemporary pedagogy, it is being considered as an asset for promotion of the learning and encouragement of the development. As mentioned by Bloom (1971), the assessment has development function and it should improve the learning. The socio-cultural theory of Vygotsky (1978) stresses the relevance of the social interaction and of the support in the process of learning, which imply that the way feedback is given and received may stimulate or hinder the students' progress. Black & Wiliam (1998) also suggest that the quality formative assessment contributes in a large extent for improvement of students' achievements, especially when students and parents receive understandable feedback for their advantages and disadvantages. As stated by them, this type of assessment provides continuous feedback.

According to Nitko (2004), the assessment refers to collecting and using data with the aim to improve the teachers' teaching and the students' learning. The assessment is therefore, a relevant mechanism which directs and supports the students' development. Hattie (2009) says that the assessment has a strong influence on the students' personal growth, their motivation, self-confidence, and attitudes toward the school. Havelka, Hebib & Baucal (2003) point out that the assessment becomes a device which helps students to recognize their advantages and shortcomings, and which enables teachers to balance the teaching toward the students' needs. In the assessment process, the Bloom taxonomy enables the structure of the evaluation. Through this model, the assessment transfers into coherent system which adjusts itself toward the various levels of students' development. Talevski & Janusheva (2015) insists on objectivity, fairness and transparency and emphasize that the teachers must use clear and various criteria and indicators to eliminate the subjectivity.

1.1. The objectivity of the assessment

The objectivity of the assessment represents one of the basic principles of the pedagogic theory and practice. It suggests that the grade should be a result of the real students' knowledge, and should not rely on personal teachers' attitudes, emotions, or biases. As Cronbach (1971) says, the objectivity indicates that different assessors should give similar grades for similar achievements. Ideally, two teachers should assess students with the same grade for the same students' task. However, many studies prove that this occurs rarely.

The first who elaborates this problem is Piéron (1922). He determines that two assessors give different grades for same answers. These insights pose the question for the validity and the objectivity of the assessment and point out to the need of apparent criteria (Tyler, 1949).

Many probes show that there are factors which can affect the objectivity of the assessment.

a) Personal teachers' attitudes – The teachers may unconsciously favor certain students (Thorndike, 1913).

b) Effect of the first impression – The first impression may affect the future judgments (Rosenthal & Jacobson, 1968).

c) Unclear criteria – Without apparently defined criteria, the assessment becomes subjective (Tyler, 1949).

d) Psychological condition of the teacher – It may influence the objectivity (Cronbach, 1971).

e) Sociological factors – The parents' expectations, the pressure from the school and the environment may significantly mark the assessment (Stiggins, 2005).

It has to be noted that despite the efforts, the total elimination of the subjectivity is almost impossible, simply because the assessor is a human (Cronbach, 1971). There is no such thing as absolute objectivity. Therefore, the modern pedagogy considers the fairness and the transparency as fundament of the assessment.

1.2. The role of the parents

In the modern educational context, parents are considered as relevant partners in the educational process. They monitor the work of their children at home, communicate with the teachers, and form attitudes for the quality of the teaching and the assessment. Because of this, their perceptions for the fairness and the objectivity of the assessment are a valuable indicator for the conditions in the schools, regarding the assessment. As said by Epstein (2001), the partnership between the school and the family is a prime mover for the students' success.

The parents often interpret the students' grade as an indicator of the children's capability, and due to this, their reactions toward the grades can be strongly emotional. Therefore, the positive support may increase students' self-confidence while the pressure may cause stress and fear from failure.

The parents' expectations are a governing factor in forming the students' motivation. When the grades are used as tools to compare students, the atmosphere in the family may be competitive and tensed. On the other side, the parents who point out the students' advancements, and not only the results, contribute for positive attitudes toward the learning. Deci & Ryan (1985) explain that the excessive pressure lowers the students' inner motivation.

If the parents consider that the assessment is subjective and not fair, their trust in the teachers and the school may be broken. This disbelief often leads to conflicts, appeals, and students' negative attitudes. Thus, the transparency is very important.

As said by Stiggins (2005), the clear and precise communication for the students' achievements builds trust. The effective communication between teachers and parents contributes to better understanding of the criteria for assessing the students' achievements. The parents meetings, the written feedback, and the individual discussion on students' accomplishments increase the transparency and lower the possibility to misunderstanding. The regular communication affects the trust (Epstein, 2001). A lot of studies showcase that the students who have supportive parents develop higher academic freedom and better motivation. The parents who stress the effort and not only the grades provide more balanced psychological expansion. In this vein, Henderson & Mapp (2002) claim that the family support improves the academic success.

The transparent assessment signalize that the criteria, assignments, and outcomes should be evidently explained. The parents who are informed for the assessing process have a bigger trust in the teachers and in the school. Opposite, the lack of information leads to doubts on biases. When teachers and parents collaborate, the students get balanced support in school and at home (Epstein, 2001). The supportive communication lowers the possibility for conflict and increases the motivation. This type of communication is a precondition for objective and fair assessment (Epstein, 2001; Stiggins, 2005). Hoover-Dempsey & Sandler (1997) showcase that the parents' involvement depends on their beliefs for their own responsibility in the education of their children.

The complexity of the assessment process opens the need of a deeper elaboration of its objectivity and validity. This paper focuses on the parents' opinions of the students' assessment in the Republic of North Macedonia. The sample consists of 200 participants with different age, sex, and professional background, which provides different perspectives on the topic. The method used for collecting the data is a survey and the method for analyzing the data relies upon the thematic analysis.

2. Broader research context

Considering that the assessment is one of the most complex components of the educational system, it is a subject of constant interest among various foreign and domestic researchers. Through their research, they aim to define its functions, challenges and the impact on the students' achievements. A substantial amount of research is directed toward the examination of the parents' perceptions and attitudes, in relation to the assessment. These inquires claim that the subjective experience of the grade has a direct impact on students' motivation and success.

Kohn (1993) argues that as a type of award, the grades affect the learning process counterproductive. He states that when students are focused to achieve higher grade, their interest for the teaching material is reduced, they become less directed toward intellectual risks and look for the easiest way to succeed. Therefore, according to him, the system of awards and punishments does not motivate the students to improve themselves. This system simply trains them to be obedient, which in a long term destroys their natural curiosity and their inner desire for knowledge.

Crook (2001) indicates that the parents experience the assessment as unfair when the criteria are not apparent and when there is an impression that the teachers implement different standards for different students. In these cases, the grade is not perceived as a reflection of the knowledge, but rather as a result of the subjective judgment. McMillan, Myran & Workman (2002) conclude that the type of the school significantly influences the criteria which teachers consider as most relevant when forming the grade. They reveal that the primary school teachers evaluate more the efforts, the engagement in the activities and the students' progress, while the high school teachers tend to be more objective and rely only on the students' attainments. Thus, according to them, as the students advance thorough the educational system, the assessment is less concentrated on the individual development and more on the standardized devices. As said by Cassady & Johnson (2002), the fear from grading can decrease the concentration and this may lead to lower results. They further claim that this anxiousness impacts negatively the students' efficacy. Observing the assessment as a complex moral and ethical act for the teachers, Zoeckler (2007) stresses out that teachers constantly experience internal conflicts in situation when they need to find balance between the objective standards and the personal students' circumstances. This research showcases that the teachers often sacrifice the objectivity in order to save the students' motivation or to award their efforts and thus, the grade becomes a type of pedagogical tool for support and not only for measurement of their achievements. The research emphasizes that it is almost impossible to achieve absolute neutrality in the classroom. Harlen (2007) says that the transparency in the assessment is a basic premise for building the trust among teachers, students and parents. If the criteria are not clear and not well explained, then, the opportunity for doubts and dissatisfaction is increased. Brookhart (2008; 2013) reveals that the feedback is also connected with the assessment process. Hattie (2009) claims that the primary school students are especially sensitive to judgments and comparisons. She further explains that the grades may support students' motivation, but also they can cause stress.

Epstein (2001) states that as active factors in the educational process, the parents develop clear attitudes for the quality of the teaching and assessment. These perceptions largely lean on the experiences of their children and on the level of transparency in the communication with the school. She points out that the unclear and undefined criteria result in parents' distrust and dissatisfaction. Janusheva & Pejchinovska (2011) suggest the usage of different techniques, strategies, and activities for teaching and assessing the students' accomplishments, in order to improve the validity and objectivity of the grades. Talevski & Janusheva (2011) elaborate on the assessment of the higher process skills (critical thinking, creative thinking, and the students' competencies to express themselves in a written form). They propose various criteria and indicators to increase the assessment objectivity of these skills. However, they stress that due to the complex nature of these skills, their assessment and their objective measurement is almost impossible. Tippin, Lafreniere & Page (2012) disclose that the students who are oriented toward the grades and are motivated only from the final results have higher level of stress, while the student who are oriented toward the learning and the knowledge declare consciousness and openness toward new experiences. According to them, the students experience the teachers as a less competent or unfair if they do not recognize and award their perceived effort and this indicates that the perception for the objectivity of the assessment is deeply related to the individual characteristic and academic goals. Harris & Brown (2013) analyze the parents' and students' attitudes toward the assessment and determine that the transparency is among the critical factors which enable the trust in the teachers' judgment. As reported by them, the parents evaluate the assessment positively when they receive obvious feedback and when they can monitor the students' evolution. Gajikj, Markov, Radulovikj & Stojanovikj (2014) analyze the use of the tests for assessing the students' knowledge and highlight that the assessment should not be reduced only to checking the facts, but it should be an indicator for encouraging the critical thinking. They further say that the tests cause stress and pressure among students and this can lead to learning for a grade instead of learning for knowledge. They also argue that the educational system needs various forms for students' achievements assessment which will evaluate their practical skills and their activity. Boner (2016) states that the teachers are constantly feeling pressured to be objective, although their professional ethics pull them toward more flexible and more supportive assessment. She reveals that the way teachers resolve this conflict significantly affects on the students' and parents' opinion on whether this process is mechanically or fair. Zenuni-Idrizi (2016) believes that oral and written feedback, peer assessment, posing questions and a dialogue will contribute to the objectivity of the students' assessment. Löfgren & Löfgren (2017)

claim that the moment when the students get their first grade represents a twist for their identity, which is formed largely by their "parents' eyes". They further reveal that the students experience the grade as a measure of their value in the family context where the higher grades are celebrated as a success of the whole family while the lower grades cause shame. Instead of being only information for the students' development, the grades become a powerful symbol which defines the student – parent relationship, forcing the students to focus on parents' satisfactions and expectations. Dimovski, Malcheski & Malcheska (2019) also concentrate on the objectivity of students' assessment, pointing out the clear criteria and the different methods for teaching and learning, which will encourage students' motivation and intellectual growth.

3. Methodology

According to Sandelowski (2010) and Janusheva (2022), the research question is a key of each research because it enables collecting qualitative data and determines the whole research process. In line with these insights, the research question of this paper is:

How the parents perceive the objectivity of the assessment?

The formulation of the research question is in line with the view that the qualitative research focuses on the understanding and interpretation of the participants' attitudes and experiences (Creswell, 2014).

In agreement with Creswell's (2014) view, the aim of the research refers to what can be done or what is done in order to answer the research question. Consistent to this insight, the aim of the paper is to analyze the parents' perceived attitudes toward the objectivity of the assessment.

As for the sample, the paper leans on Yin's (2011) and Gentles et al.'s perspective that the sample represents the "sources of information" and "participants" based on their relevance to get answer to the research question. The parents constantly monitor their children and have direct insights in their achievements. They also continuously communicate with the teachers. In relation to this understanding, the sample consists of 200 participants, and it is purposeful sample, which is in accordance with Lincoln & Guba (1985) who state that each sample is collected to fulfill certain goals. This determination of the sample enables collecting different opinions and experiences which contributes to more holistic insights of the analyzed phenomenon. The number of the participants is treated not as statistically representative but as meaningful to recognize dominant motives, attitudes, and problematic aspects related to the objectivity of the assessment.

The collection of the data is made through a survey, which in accordance with Nunan (1992) that the survey is the most widely used instrument in the qualitative research. The survey enables the participants to express their opinions freely and honestly and protects their privacy (Flick, 2009). The survey consists of 3 open questions which refer to parents' perception of the objectivity of the assessment.

The analysis of the data relies upon the qualitative content analysis (Mayring, 2014) which means that the participants' responses are grouped in thematic categories. The categories are formed inductively, which means that they arise from the reading of the answers. In the analysis, the interpretative-inductive method used by Thomas (2006) and Kahlke (2014) is exploited as well.

4. Results, analysis and discussion

As a result of the thematic analysis, several themes and subthemes are identified.

First thematic category: Subjectivity of teachers' assessment

Almost all of the parents perceive the assessment of the students' achievements as unfair and subjective and relate it to various factors.

Subtheme 1: Perceived subjectivity of the assessment

All parents state that the grade is not always reflecting the real students' knowledge, and that it is affected by subjective factors.

> *I have an impression that the grade largely depends on teachers' personal opinions and not on knowledge.*

Sometimes, teachers grade the discipline and the behavior instead of the knowledge.

The assessment is not always objective and consistent.

There are students who are privileged, in relation to the family position or to the political party they belong.

The teachers' personal preferences affect the objectivity of the assessment and they demonstrate that the effort and the knowledge are not important. What is important is the closer connection with the teachers.

If the student get the etiquette of a bad student from the teachers, it is almost impossible to change that attitude even though the student demonstrates high quality knowledge.

These views are clear indicators that the parents' trust in the educational practices of assessment is disrupted. They also signalize that there is a problem connected with the parents' feel of injustice in the assessment. These results are in relation to the research of Harlen (2007) and Harris & Brown (2013) who indicate that if the assessment is not transparent, it creates doubts in its objectivity.

Subtheme 2: Motivation

Many parents point out to the relation between the subjectivity in the assessment and the motivation. When the students' grades do not reflect their real competencies or their efforts, the desire for further learning may be decreased.

If the students have an impression that the teachers are subjective or favor certain student, their motivation for further growth may be lowered. They may not be interest for the teaching and to think that they cannot fulfill the teachers' expectation.

The assessment which leans largely only on tests decrease the students' motivations.

These insights are in correlation with Kohn's (1993) view that students focused on higher grades have a lower motivation to improve themselves.

Subtheme 3: Anxiety

Some parents state that there is a deep connection between the subjectivity of the assessment and the anxiousness.

If students feel from the start that they are rejected by their teachers, they may develop anxiety.

The assessment generates stress and the feel for injustice.

These opinions are in accordance with the research of Cassady & Johnson (2002) who said that the fear from assessment can cause anxiety, and with the research of Brookhart (2013) who claims that the assessment should support the learning and not be source of fear. Further, these views support the findings of Tippin et al. (2012) and Gajikj et al. (2014) who claim that the students learning only for grades are more exposed to stress.

Subtheme 4: Professional aspects

Numerous parents further think that the subjectivity of the assessment can lead to professional discouragement.

The teachers' subjectivity ruins the students' self-confidence. They start to believe that they are not capable to involve in certain profession and base their self-assessment only on the teachers' grade.

Subtheme 5: Parents' pressure

Some parents relate the teachers' subjectivity with their own pressure for higher grades of their children.

The grades are often a result of the pressure parents put on teachers. They want higher grades for their children, thus the teachers "share" a lot of "fives" (grade 5) which are unrealistic.

Subtheme 6: Methods

A lot of parents talk about the methodological limitation which refers to the test as the one of the most used instrument for assessment of the students' achievements.

The assessment is mostly conducted via tests, and the other methods are neglected.

It is difficult to prepare a test which will assess the students' competencies for problem solving. The tests largely contain questions in which the correct answer should be circled or questions which answer should be added.

The grades from the tests are partial indicator for the students' knowledge because they often focus on memorizing the facts and do not demonstrate the competence for critical thinking and real life problem solving.

The students' curiosity is very important for their learning. In my opinion, the use of only one tool for assessment enlarges the students' stress and pressure. Students may also develop fear of mistake and show lower curiosity. Therefore, the learning becomes an obligation which causes neurosis and not satisfaction form revealing new insights.

The teachers should evaluate the students' effort and not only the final result.

The dialog between the teacher and the students, the school engagement in the class activity, the homework, and the project activity should be taken into account when forming the final grade.

These results confirm the previous findings of Janusheva & Pejchinovska (2011) that using various methods for assessing the students' accomplishments affects positively the validity and the objectivity of the assessment.

Second thematic category: Unclear and inconsistent criteria

Many parents indicate that the clearly defined criteria affect the objectivity of the assessment.

The criteria are not presented in advance.

The criteria change from topic to topic without an announcement.

The criteria are not implemented.

There is a manipulation with the criteria depending on the private connections someone have with the teachers.

The criteria should be clearer, and the assessment should be transparent.

These views are directly supporting the results of Epstein (2001) and Stiggins (2005) according to who fair and clearly defined criteria are among the most significant base for fair and objective assessment. Further, these insights are in accordance with the findings of Cassidy & Johnson (2002)

who state that parents tend to experience the assessment as unfair when the criteria are unclear and when they feel that teacher apply different standards for different students.

Third thematic category: Unclear feedback

Among the factors which contribute to the objectivity of the assessment, the parents mention the clear and effective feedback.

The students do not get effective and quality feedback.

The parents do not know how the final grade is formed.

This is in line with Brookhart (2013) who find out that the feedback is most essential component for the improvement of the teaching and affects the objectivity of the assessment. Further, these insights support the view of Harris & Brown (2013) who reveal that the parents perceive the assessment more positively if they get clear and effective feedback.

Conclusion

The research results confirm that the assessment of the students' accomplishment is a complex topic which depends on many factors. The results also demonstrate that although the assessment is considered as vital regarding the students' growth, there is an apparent parents' critical attitude toward its objectivity and capability to reflect the real knowledge. The parents' attitudes reveal the gap between the prescribed standards and the real teaching practice. Instead of development stimulation, the assessment is often experienced as a mechanism which leads to campaign learning, where the focus is on memorizing facts and not on critical thinking.

The research results also support the view that the usage of only one methodological tool provides a partial picture of the students' knowledge and this is not enough to assess the competence for solving real life problem situations.

The obtained results may be useful for the educational institutions and the creators of the educational politics in their efforts to reform the actual assessment system which will increase the transparency and the objectivity. In the same time, these insights open the space for further investigation on parents' attitudes, by enlarging the number of the questions and the units of the sample.

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BRIDGING LEAD ERSHIP AND DATA LITERACY FOR EFFECTIVE SCHOOL IMPROVEMENT IN CONTEMPORARY K–12 EDUCATIONAL CONTEXTS

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Abstract

Contemporary educational systems increasingly emphasize the use of data to support school improvement and accountability processes. However, despite the widespread availability of assessment tools and digital learning platforms, many schools struggle to transform data into meaningful instructional and organizational change. This challenge is often linked to limited leadership capacity and insufficient data literacy among school leaders. While data-driven decision-making has become a global priority in education, the effective integration of leadership practices and data literacy remains underexplored in practical school contexts.

The purpose of this research is to examine the relationship between leadership and data literacy in school improvement processes and to propose a practice-informed framework that bridges these two domains. The study is guided by the research question: How can leadership and data literacy be integrated to enhance school improvement in K–12 educational settings?

A qualitative, practice-informed analytical approach was employed, drawing on documented leadership practices, assessment cycles, and data-use processes within a K–12 school context. The analysis is informed by multiple data sources, including standardized assessment data, digital learning platform analytics, structured data meetings, and reflective leadership practices. Rather than focusing on statistical generalization, the study emphasizes analytical insight derived from real-world educational practice.

The findings suggest that leadership plays a decisive role in shaping data culture, enabling meaningful data interpretation, and supporting teacher capacity for data use. The proposed framework highlights leadership vision, structured data processes, and continuous feedback mechanisms as key components of effective data literacy. The study concludes that bridging leadership and data literacy is essential for sustainable school improvement and recommends targeted leadership development and structured data-use models as practical strategies for educational institutions.

Keywords: Leadership, Data literacy, School improvement, Data-driven decision-making, educational leadership

1. Introduction

The increasing availability of educational data has significantly transformed how schools approach planning, evaluation, and continuous improvement. Standardized assessments, digital learning platforms, and student information systems now generate extensive datasets intended to support instructional decision-making and organizational development. At the policy and system levels, data-driven decision-making has become a central expectation, often linked to accountability, transparency, and school effectiveness. However, despite these developments, research and practice indicate that the mere presence of data does not automatically lead to improved educational outcomes.

Many schools continue to face challenges in interpreting data accurately, translating findings into instructional action, and sustaining data-informed practices over time. Data is frequently underutilized, misunderstood, or used primarily for reporting purposes rather than for guiding teaching and learning. In some contexts, educators experience data fatigue, fragmented data systems, and limited opportunities for meaningful reflection. As a result, data use may remain superficial and disconnected from classroom practice, limiting its potential impact on student learning and school improvement.

A key factor influencing the effectiveness of data use in schools is leadership. School leaders play a critical role in setting priorities, shaping school culture, allocating resources, and guiding teachers in the use of data for improvement. Effective leadership can foster collaborative data practices, encourage reflective dialogue, and align data use with instructional goals. Conversely, when leadership practices focus predominantly on compliance, monitoring, and reporting, data use may become procedural rather than purposeful. In such cases, teachers may perceive data as an external requirement rather than a meaningful tool for professional learning and instructional growth.

Data literacy has emerged as an essential component of effective educational leadership. Data literacy in leadership extends beyond technical skills related to data collection and analysis; it includes the ability to interpret data within context, ask meaningful questions, support collaborative sense-making, and make informed decisions based on evidence. Leaders with strong data literacy are better positioned to guide instructional improvement, support teacher development, and establish coherent school-wide data cultures. However, leadership data literacy remains uneven across educational contexts and is often insufficiently addressed in leadership preparation and professional development programs.

The purpose of this research is to explore how leadership and data literacy can be integrated to support school improvement processes in K–12 educational settings. The study aims to contribute to the field by proposing a practice-informed framework that connects leadership actions with systematic and meaningful data use. Rather than emphasizing specific tools or technologies, the research focuses on leadership practices that enable data to be used as a driver of continuous improvement. This approach responds to the growing need to move beyond tool-centered models toward leadership-driven data cultures that prioritize learning, collaboration, and sustainability.

The research is guided by the following research question: How can leadership and data literacy be integrated to enhance school improvement processes in K–12 schools? To address this question, the study employs a qualitative, practice-informed analytical methodology based on documented leadership practices and data-use processes within a school context. The paper examines leadership roles, structured data practices, and reflective analysis of improvement initiatives. While the findings are context-specific and not intended for statistical generalization, they offer transferable insights and practical implications for school leaders seeking to strengthen data-informed improvement efforts.

1.1. Leadership challenges in data-informed school improvement

School leaders are increasingly expected to base strategic and instructional decisions on data derived from assessments, digital platforms, and monitoring systems. While this expectation reflects a broader shift toward evidence-informed practice, many school leaders face significant challenges in responding effectively to these demands. One of the primary challenges is limited preparation in data literacy, particularly in interpreting complex datasets and understanding their instructional implications. Leadership preparation programs have traditionally emphasized administrative and managerial competencies, often providing insufficient focus on analytical skills and data-informed decision-making.

In addition to limited data literacy, time constraints represent a persistent challenge for school leaders. The growing scope of leadership responsibilities—including instructional supervision, staff management, accountability reporting, and community engagement—often restricts opportunities for deep engagement with data. As a result, data analysis may be conducted superficially or delegated without sufficient guidance, reducing its potential to inform improvement initiatives meaningfully. Research suggests that such constraints can lead to fragmented data practices and inconsistent implementation of improvement strategies (Talevski, 1981; Trajkovski, 1985).

Another critical challenge relates to the availability and quality of professional development opportunities focused on data use. In many educational contexts, professional development emphasizes compliance with assessment requirements rather than the development of analytical competencies. Without targeted support, school leaders may struggle to establish coherent data strategies or to model effective data use for teachers. Consequently, data-informed school improvement efforts may lose focus, limiting their impact on teaching and learning.

1.2. The need for data literacy in educational leadership

Data literacy refers to the ability to collect, interpret, analyze, and apply data in ways that support informed decision-making and continuous improvement. In the context of educational leadership, data literacy extends beyond technical skills associated with data management or statistical analysis. It includes the capacity to contextualize data, recognize patterns and trends, ask critical questions, and engage stakeholders in collaborative interpretation of evidence.

For school leaders, data literacy is closely linked to instructional leadership and organizational development. Leaders with strong data literacy are better equipped to align data use with instructional goals, identify areas for targeted intervention, and support teachers in using data to refine practice.

Moreover, data-literate leaders can foster a culture of trust and inquiry by framing data as a tool for learning rather than evaluation. This approach encourages reflective dialogue and shared responsibility for improvement.

Strengthening leadership data literacy is therefore essential for sustainable school improvement. When leaders possess the knowledge and confidence to guide data use effectively, they can create structured processes for data analysis, support professional learning, and ensure that data informs both short-term decisions and long-term strategic planning. Developing data literacy as a core leadership competency contributes to more coherent, transparent, and impactful school improvement practices.

2. Literature Review / Broader Research Context

Educational research increasingly emphasizes the role of data-driven decision-making as a central mechanism for improving school effectiveness and instructional quality. Across diverse educational systems, data is viewed as a means of identifying learning gaps, monitoring student progress, and informing strategic planning. Studies suggest that when data is used systematically and purposefully, it can support targeted instructional interventions, enhance teacher collaboration, and contribute to improved student outcomes (Mitrevski, 2013; Trajkovski, 2014). As a result, data use has become a defining feature of contemporary school reform initiatives.

Despite this emphasis, the literature reveals considerable variation in how data is interpreted and applied in practice. While some schools demonstrate coherent and sustained data use, others rely on fragmented or episodic approaches. Research indicates that data is often used for accountability and reporting purposes rather than for instructional improvement. In such cases, data-driven decision-making becomes a procedural requirement rather than a meaningful process, limiting its potential to influence teaching and learning. This variability suggests that access to data alone is insufficient and that additional factors influence the effectiveness of data use in schools.

Leadership has been consistently identified as a key factor shaping how data is perceived, valued, and utilized within educational organizations. School leaders influence data practices by establishing priorities, allocating resources, and modeling expectations related to data use. Petrovski (2012) reveals that leadership commitment to data-informed practice significantly affects teacher engagement and the development of a positive data culture. When leaders actively participate in data analysis and support collaborative interpretation, teachers are more likely to view data as a tool for reflection and growth.

Conversely, when leadership engagement with data is limited or compliance-oriented, data use tends to be superficial. Mitrevski (2013) agrees with the view that leadership practices largely determine whether data serves as a mechanism for learning or as an instrument of control. In environments where data is associated primarily with evaluation and accountability, teachers may experience increased pressure and reduced willingness to engage in open dialogue about instructional challenges. Such conditions can undermine trust and restrict the transformative potential of data-driven improvement.

The concept of data literacy has emerged as a critical lens for understanding effective data use in education. Data literacy refers to the ability to collect, interpret, analyze, and apply data in ways that inform decision-making and support improvement. Research indicates that many educators require structured support to develop these competencies, particularly in relation to interpreting assessment results and translating findings into instructional strategies (Biemmi, 2015). Without adequate data literacy, educators may misinterpret data, focus on surface-level indicators, or overlook contextual factors influencing student performance.

While much of the existing literature focuses on teacher data literacy, recent studies highlight the importance of leadership data literacy as a foundational element of school-wide improvement. Leaders play a crucial role in framing data use, guiding interpretation, and creating conditions for collaborative sense-making. Leadership data literacy enables school leaders to ask meaningful questions, identify relevant data sources, and align data use with instructional and organizational goals. Moreover, leaders with strong data literacy are better positioned to support professional learning, facilitate effective data conversations, and ensure coherence across improvement initiatives.

The literature further suggests that data literacy should be understood as a social and contextual practice rather than a purely technical skill. Effective data use involves collaboration, dialogue, and shared interpretation among stakeholders. Leaders who recognize the relational dimensions of data use

are more likely to foster inclusive data cultures that promote trust and collective responsibility. This perspective underscores the need to integrate leadership and data literacy within broader frameworks of instructional leadership and school improvement.

Taken together, the reviewed literature highlights three interrelated themes: the growing importance of data-driven decision-making in education, the central role of leadership in shaping data use, and the critical need for data literacy as a leadership competency. While existing studies provide valuable insights into these areas, there remains a need for practice-informed frameworks that explicitly connect leadership actions with data literacy in real school contexts. Addressing this gap is essential for understanding how data can be transformed from an accountability requirement into a meaningful driver of sustainable school improvement.

2.1. Leadership roles in data use

Leadership roles in data use extend beyond the technical management of assessment results or reporting requirements. Effective school leaders play a strategic role in shaping how data is introduced, interpreted, and utilized across the organization. One of the primary leadership responsibilities in this area involves establishing clear expectations for data use that align with the school's instructional vision and improvement priorities. By articulating the purpose of data use and linking it explicitly to teaching and learning, leaders can help ensure that data serves as a meaningful resource rather than a procedural obligation.

In addition to setting expectations, school leaders are responsible for allocating resources that support effective data use. These resources include time for collaborative data analysis, access to relevant data systems, and professional development opportunities focused on data interpretation. Research confirms that when leaders prioritize structured time for data discussions and provide the necessary tools and support, teachers are more likely to engage in reflective and purposeful data use (Mitrevski, 2013; Trajkovski, 2014). Conversely, the absence of such support can result in fragmented practices and limited instructional impact.

Facilitating collaborative data discussions represents another critical leadership role. Leaders who actively participate in data meetings and model reflective inquiry contribute to the development of a shared understanding of data and its instructional implications. Through guided questioning and collaborative sense-making, leaders can support teachers in identifying trends, examining underlying causes, and planning targeted interventions. Studies indicate that leaders who engage directly in data analysis and model reflective practices foster stronger data cultures characterized by trust, openness, and collective responsibility (Mitrevski, 2013; Trajkovski, 2014).

2.2. Data literacy as a leadership competency

Data literacy is increasingly recognized as a core competency for educational leaders operating in data-rich environments. As school improvement efforts become more reliant on evidence, leaders are expected to interpret complex datasets, evaluate multiple sources of information, and make informed decisions that impact instructional practice and organizational development. Leaders who possess strong data literacy are better positioned to guide instructional improvement, support teacher development, and align data use with strategic goals.

The literature suggests that data-literate leaders are able to move beyond surface-level analysis and engage in deeper interpretation of data within context. This includes understanding the limitations of data, recognizing patterns over time, and considering qualitative and contextual factors that influence student outcomes. By applying these skills, leaders can help ensure that data informs meaningful action rather than isolated or reactive responses.

Furthermore, data literacy enables leaders to support teacher learning by facilitating effective data conversations and modeling analytical thinking. When leaders demonstrate confidence and competence in data use, they contribute to a culture in which teachers feel supported in exploring data and reflecting on practice. Integrating data literacy into leadership preparation and professional development programs has therefore been identified as a key strategy for enhancing school improvement outcomes. Developing leadership data literacy not only strengthens individual decision-making but also promotes coherence, transparency, and sustainability in school-wide improvement efforts.

3. Methods

This research adopts a qualitative, practice-informed analytical approach designed to examine the integration of leadership and data literacy within a K–12 school context. The study is not structured as a traditional empirical investigation with experimental or statistical procedures. Instead, it focuses on the systematic analysis of leadership practices and data-use processes as they occur in real educational settings. This methodological approach is appropriate given the study's aim to generate analytical insight and practical understanding rather than statistical generalization.

The research is grounded in the author's professional engagement with school leadership and improvement processes. A practice-informed perspective allows for the examination of leadership actions, decision-making processes, and data practices as interconnected elements of school improvement. This approach emphasizes reflective analysis of documented practices and aligns with qualitative traditions that value contextual understanding and depth of interpretation.

The study focuses on leadership-driven data practices, including the use of assessment cycles, structured data meetings, and digital learning platforms to inform instructional and organizational decisions. Data sources include standardized assessment results, learning analytics generated through educational platforms, documented protocols from data meetings, and reflective leadership notes related to planning and implementation processes. These sources provide multiple perspectives on how data is collected, interpreted, and applied within the school context.

Data analysis involved a systematic review of the collected sources to identify recurring patterns and themes related to leadership actions, data interpretation, and improvement outcomes. Particular attention was given to how leaders framed data use, facilitated collaborative analysis, and supported teacher engagement with data. The analysis sought to uncover relationships between leadership practices and the effectiveness of data use in guiding instructional improvement.

The analytical approach is informed by established theories of educational leadership and data-driven decision-making, which provide a conceptual lens for interpreting observed practices. Rather than testing predefined hypotheses, the study aims to describe and analyze how leadership and data literacy are integrated in practice and to develop a framework that can inform similar educational contexts. This framework is intended to be transferable and adaptable rather than prescriptive.

Ethical considerations were addressed throughout the research process. Institutional references were anonymized, and the analysis focused on systemic practices rather than individual performance. The study does not evaluate or compare individual teachers or students, thereby minimizing ethical risk. By emphasizing organizational processes and leadership practices, the research maintains professional integrity and respects confidentiality while contributing meaningful insight into school improvement practice.

4. Analysis, Results and Discussion

The analysis of leadership practices and data-use processes reveals that the effective integration of leadership and data literacy is not incidental but depends on structured processes, clearly articulated expectations, and ongoing reflective practice. Data becomes meaningful and actionable when school leaders actively shape how it is interpreted, discussed, and applied within instructional and organizational contexts. Rather than functioning as isolated metrics, data gains value through leadership-guided sense-making and collaborative engagement.

The findings indicate that leadership plays a decisive role in transforming data from an accountability-driven requirement into a tool for school improvement. When leaders establish a clear vision for data use and align it with instructional priorities, data practices become more coherent and purposeful. Leaders who frame data as a resource for learning—rather than evaluation—create conditions in which teachers are more willing to engage in open dialogue, examine instructional challenges, and reflect on practice. This finding is consistent with previous research emphasizing leadership influence on data culture and teacher engagement (Petrovski, 2012; Mitrevski, 2013).

A central result of the analysis is the importance of structured data processes. Regular assessment cycles, scheduled data meetings, and clearly defined protocols for data discussion contribute to sustained and consistent data use. In contexts where such structures are present, data analysis moves beyond surface-level review toward deeper examination of trends, patterns, and instructional implications. The absence of structure, by contrast, often leads to fragmented practices and inconsistent follow-through, limiting the impact of data on improvement efforts.

The analysis further highlights the role of leadership-supported capacity building in strengthening data literacy across the school. Leaders who invest in professional learning opportunities focused on data interpretation and application enable teachers to develop confidence and competence in using data. This support includes modeling analytical thinking, guiding collaborative inquiry, and providing feedback on data-informed instructional decisions. These practices reinforce the view that data literacy is a collective responsibility supported by leadership, rather than an individual technical skill.

Based on the analysis, the findings support the development of a practice-informed framework that bridges leadership and data literacy through interconnected components. These components include leadership vision for data use, structured data processes, capacity building for educators, and continuous feedback mechanisms. Together, these elements create a coherent system in which data informs both short-term instructional decisions and long-term strategic planning. The framework reflects the interconnected nature of leadership actions and data practices, emphasizing alignment, collaboration, and sustainability.

The discussion of these findings underscores their relevance to existing literature on school improvement and educational leadership. Consistent with previous studies, the results suggest that data use is most effective when embedded within leadership practices that prioritize collaboration, reflection, and instructional focus (Trajkovski, 2014). The findings also extend existing research by illustrating how leadership data literacy functions as a mediating factor between data availability and meaningful improvement outcomes.

In addition to confirming established research, the analysis identifies implications for practice and future research. For practitioners, the findings suggest that strengthening leadership data literacy and establishing structured data processes are critical steps toward effective school improvement. For researchers, the study highlights the need for further investigation into leadership-driven data practices across diverse educational contexts. While the findings are context-specific, they offer transferable insights that can inform leadership development, policy initiatives, and school improvement strategies.

Overall, the analysis demonstrates that bridging leadership and data literacy is essential for transforming data into a driver of sustainable school improvement. When leaders actively guide data interpretation, support capacity building, and embed data use within coherent structures, data becomes a powerful tool for learning, reflection, and continuous improvement.

.1. Leadership-driven data practices

Leadership-driven data practices emerge as a central mechanism through which data literacy is translated into meaningful school improvement. The analysis indicates that effective leaders do not treat data as a standalone technical artifact but embed it within a broader instructional and organizational vision. Establishing a clear purpose for data use is a foundational leadership practice. When leaders explicitly communicate that data is intended to support learning, reflection, and growth, rather than evaluation or control, educators are more likely to engage with data openly and constructively.

One key leadership-driven practice involves the intentional organization of regular data meetings. These meetings are structured opportunities for teachers and leaders to collaboratively examine assessment results, identify patterns, and discuss instructional implications. In effective contexts, leaders guide these conversations by posing reflective questions, such as identifying areas of student strength, recognizing learning gaps, and exploring possible instructional responses. Rather than focusing on individual performance, the emphasis remains on collective responsibility and shared problem-solving. This approach encourages teachers to view data as a shared resource that informs instructional planning rather than as a judgment of effectiveness.

Another important leadership practice relates to supporting teachers in interpreting assessment results. The analysis reveals that teachers often require guidance in understanding what data represents and how it can inform instruction. Leaders who possess data literacy are able to model analytical thinking by interpreting trends, comparing data across time, and contextualizing results within classroom realities. For example, leaders may support teachers in examining assessment growth patterns across multiple cycles or in triangulating quantitative assessment data with qualitative classroom observations. Such practices deepen teachers' understanding of data and enhance their capacity to use evidence to inform instructional adjustments.

Leadership-driven data practices also include aligning data use with instructional priorities and improvement goals. When leaders ensure that data discussions are directly connected to curriculum,

instruction, and student learning objectives, data becomes embedded within daily practice. The analysis indicates that data use is most effective when it informs targeted instructional strategies, such as differentiated instruction, intervention planning, or curriculum refinement. Leaders who maintain this alignment help prevent data fatigue and ensure that data use remains purposeful and relevant.

Overall, the findings suggest that leadership-driven data practices are characterized by clarity of purpose, structured collaboration, and sustained support. These practices enable data to function as a catalyst for reflective practice and instructional improvement, reinforcing the role of leadership as a driver of data-informed school cultures.

4.2. Implications for school improvement

The findings of this study suggest that leadership data literacy has significant implications for school improvement, particularly in promoting coherence, collaboration, and continuous learning. When leadership and data literacy are integrated effectively, data use becomes a systematic and sustained process rather than a series of isolated activities. This integration supports informed decision-making at both instructional and organizational levels, contributing to more consistent and strategic improvement efforts.

One important implication relates to organizational coherence. Leadership-driven data practices help align assessment, instruction, and professional development within a unified improvement framework. When leaders consistently use data to inform priorities and decisions, schools are better positioned to maintain focus and continuity across initiatives. This coherence reduces fragmentation and ensures that improvement efforts are grounded in evidence rather than intuition or external pressure.

Another implication concerns collaboration and professional learning. The analysis indicates that leadership-supported data practices foster collaborative cultures in which teachers engage in shared inquiry and reflective dialogue. Data meetings become opportunities for collective learning, allowing educators to exchange perspectives, challenge assumptions, and co-construct solutions. Such collaborative environments contribute to professional growth and enhance instructional quality by encouraging continuous reflection and adaptation.

The findings also highlight the role of leadership data literacy in supporting sustainable improvement. Data-literate leaders are able to establish feedback mechanisms that monitor progress over time and inform ongoing adjustment. Rather than treating improvement as a one-time initiative, leaders use data to support cyclical processes of planning, implementation, evaluation, and refinement. This approach aligns with research emphasizing the importance of continuous improvement and leadership influence on data culture and instructional quality (Mitrevski, 2013; Trajkovski, 2014).

From a broader perspective, the integration of leadership and data literacy has implications for leadership development and policy. The findings suggest that leadership preparation and professional development programs should place greater emphasis on developing data literacy as a core leadership competency. Strengthening leaders' capacity to interpret and use data effectively can enhance school improvement outcomes and contribute to more equitable and informed educational practices.

In summary, the analysis demonstrates that leadership-driven data practices and leadership data literacy are essential for transforming data into a meaningful driver of school improvement. By fostering coherence, collaboration, and continuous learning, leaders can ensure that data supports sustained instructional improvement and organizational growth.

5. Conclusion

This study examined the integration of leadership and data literacy within school improvement processes and proposed a practice-informed framework to support this integration in K–12 educational contexts. The findings demonstrate that data alone does not lead to meaningful improvement; rather, it is the presence of leadership practices that guide interpretation, foster collaboration, and align data use with instructional goals that transforms data into purposeful action. Leadership emerges as a central mechanism through which data literacy is operationalized and sustained within schools.

The analysis highlights that leadership-driven data practices—such as establishing a clear vision for data use, organizing structured data processes, supporting capacity building, and maintaining continuous feedback loops—contribute significantly to coherent and sustainable school improvement. When leaders prioritize data as a tool for learning and reflection rather than evaluation, they create conditions that encourage professional dialogue, instructional adaptation, and collective responsibility for improvement. These findings reinforce the importance of leadership data literacy as a foundational element of effective school leadership.

This research contributes to the field by extending existing literature on data-driven decision-making and educational leadership through a practice-informed perspective. By explicitly connecting leadership actions with data literacy, the study addresses a gap in current research that often treats data use as a technical or teacher-centered issue. The proposed framework offers a practical lens for understanding how leadership and data literacy can be integrated to support continuous improvement and instructional coherence.

While the findings are derived from a specific educational context and are not intended for statistical generalization, they offer transferable insights for school leaders, leadership development programs, and policymakers. Future research may explore empirical validation of the proposed framework across diverse educational settings and examine how leadership data literacy develops over time. Further investigation into the relationship between leadership preparation, data literacy, and school improvement outcomes would also strengthen the evidence base in this area.

In conclusion, strengthening leadership capacity in data literacy should be considered a strategic priority for educational institutions seeking sustainable improvement. By investing in leadership development that emphasizes analytical thinking, collaborative data use, and reflective practice, schools can enhance their ability to use data effectively and promote long-term instructional and organizational growth.

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FACTORS CONTRIBUTING TO ADOLESCENTS'EMOTION REGULATION IN SOME SELECTED SECONDARY SCHOOLS OF HARARI REGIONAL STATE, ETHIOPIA

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Abstract
The study aimed to examine factors contributing to adolescent emotional regulation in secondary schools of Harari Regional State. The study pursued a correlational research design where two standardized tests (Family Adaptability and Cohesion Evaluation Scale IV and Emotion Regulation for Adolescents) are employed to measure family cohesion and emotion regulation. For this purpose, data were collected from 311 grade nine and ten students using a stratified random sampling technique from the total secondary schools in Harari Regional State. Both descriptive and inferential statistics were used to analyze the data. The analysis employed SPSS version 20 to calculate the Pearson Correlation Coefficient, one-way ANOVA, two-way ANOVA, and stepwise multiple regression. The Pearson correlation results indicated that family cohesion is an important variable in determining adolescent emotion regulation. Results of the one-way ANOVA also showed that adolescents' emotion regulation differs as a result of their parent's educational level. In addition, the two-way ANOVA indicated that adolescent's emotion regulation changed as a function of the combined effects of family structure and gender. The multiple regressions revealed that family cohesion added significant value to the prediction of emotion regulation. To conclude, gender, family structure, family cohesion, and parents' educational level contribute to adolescent's emotional regulation.

Keywords: Cohesion, Emotion, Family, Regulation, Structure

1. Introduction

Although adolescence is a life span that is socio-culturally constructed, it is viewed as the years between the onset of puberty and the beginning of adulthood (Cooper, Shaver, & Collins, 1998). It is a developmental stage characterized by a rapid spurt in physical growth accompanied by sexual maturation & cognitive, emotional, and behavioral changes. This change includes attachment patterns which can change emotional experiences about self, parents, and peers (Cooper *et al*., 1998). These transitional periods can bring up issues of independence and self-identity, increased self-understanding, identity exploration, and emotional changes are the hallmarks of adolescents' development. One of the fundamental socio-cognitive changes that make adolescence transition take a special developmental overtone is the emergence of heightened emotional responses.

Teenagers have a more sophisticated awareness of emotions than children (Casey, Jones, & Hare, 2008). Though there is no consensus among scholars as to how emotion regulation is measured and conceptualized, emotion regulation is the ability to modify one's emotional responses and conform to social norms and goal-oriented performance (Gross & John, 2003). Gottman, Conan, & Swanson (1998) also viewed adolescents as having the capacity to modulate their emotional reactions to other people in times of stressful situations. Emotion regulation generally refers to a deliberate attempt to modulate, modify, or inhibit actions and reactions toward a more adaptive end, altering inner states actively and intentionally to more desired rational choices among alternative courses of action (Thompson, 2010; Garner, 1995; and Barkley, 1997).

Although humans have an impressive capacity for emotion regulation, failures are common, and especially adolescents lose control of their emotions in a wide variety of circumstances. Such failures are impulsivity and numerous other poor social-psychological outcomes (Buckner *et al.,* 2003; ., 2006). Despite the importance of emotion regulation in adolescent's daily life situations, little is

known about its development, associated factors, and its overarching influence on other developmental aspects of adolescents. Several factors influence adolescent's capacity for emotion regulation. Of these, socio-demographic variables (gender, age & education level) and familial situations (family cohesion and adaptability) are notably associated with adolescent's emotion regulation. Even though the relationship between emotion regulation and gender is complex, a shred of evidence indicates that males and females differ in terms of emotion regulation as a result of the socialization process (Chaplin &Aldao, 2013). Concerning this, the majority of the studies found that girls tend to be better self-regulators than boys (Saarni *et al.,* 1999). Not only gender but also age is found to be an important factor for emotion regulation. Studies indicate that age is positively correlated with emotion regulation. That is, as age increases, the ability to modulate and direct emotional responses will at the same time increase and advance (Barkley, 1997; Saarni, 1999; Moilanen, 2007). Consistent with this idea, Barkley (1997) stated that during adolescence the prefrontal cortex experiences tremendous growth and this in turn helps them maintain awareness of their own and others' emotions, engage in regulation strategies, and develop plans to pursue personal goals.

Existing studies also indicated that adolescent's emotional regulation could also be determined by family structure. Family structure is a concept that indicates whether the family includes a single parent or two parents and whether the adolescent is biologically related to each parent. Studies unveil inconsistent findings as to how family structure relates to adolescent's emotion regulation. For example, Demo &Acock (1996) reported that adolescents in first-married families have slightly higher levels of emotion regulation than adolescents from single-parent families or stepfamilies. Amato (2005) also found that children growing up with two biological parents are more likely to better regulate their emotions than their peers from households with only one biological parent. On the contrary, Vandewater and Lansford (1998) found no statistically significant difference in emotion regulation among groups of adolescents with different family structures. Moreover, family cohesion (the emotional bonding that family members have toward one another) is also associated with adolescent's emotional regulation. Families with warm bonds and proper expressions of affection help adolescents to function well in their social environment and develop the capacity to regulate and modulate their emotions (Eisenberg, 2005; Ward & Zabriskie, 2011; Garner and Power, 1996).

The other most important gap that can be easily noticed in the majority of the studies of adolescent emotion regulation is the methodological gap. The majority of the studies conducted on emotion regulation are dominated by qualitative research orientations, characterized by interviews and a small number of study participants. Those studies with a quantitative research approach were not comprehensive. For example, Jabeen, Haque & Riaz (2013) in their study of adolescents' emotion regulation took their samples solely from early adolescent, middle-class families. It was very difficult to generalize the findings of these studies to the general population. Furthermore, the data was only collected from a private school excluding adolescent's public schools. Regarding local studies, there is very limited research that examines the associated factors of adolescents' self-regulation (Belay, et al, 2014) though not focused on family cohesion. Moreover, the majority of the studies regarding adolescent emotion regulation were carried out dominantly in Western societies (Jabeen *et al.,* 2013). Along with the arguments so far, we may need to examine the emotion-regulatory behavior of adolescents in the Eastern parts of Ethiopia and its associated factors.

Therefore, given the importance of the issue and because there are few studies carried out on this issue, with mixed and contradicting findings, the issue of adolescents' emotion regulation triggers a need to undertake further inquiry. Hence, the current study examined the factors contributing to adolescent emotion regulation in some selected secondary schools of Harari Regional State. These scholars also pinpointed that there was a latent necessity for documenting the development of emotion regulation processes in children and adolescents living in different countries with different social, psychological, and economic influences. Thus, to fill the gaps noted so far, this study tried to examine the factors contributing to adolescents' emotional regulation in some selected secondary schools of Harari Regional State of Eastern Ethiopia.

Research Question

This section dealt with the basic research question as follows.

1. Which of level parental education makes a difference in adolescents' emotional regulation?

2. What was the relationship between family cohesion, demographic variables (gender, age, and educational level), and adolescent emotion regulation in secondary school students of Harari Regional State?

3. What was the main and interaction effect of gender and family structure on adolescents' emotion regulation?

4. To what extent did age, gender, and family cohesion predict adolescents' emotion regulation in the area under the study?

Review of Related Literature

Gender as a Determinant of Emotion Regulation among Adolescents

The relationship between emotional development and gender is complex. Some studies have shown differences in male and female emotional styles are due to norms and socialization processes (Chaplin & Aldao, 2013). Emotional disparities are evident among males and females in that females are more of having emotional awareness and empathy, while, males are more confident, adaptable, optimistic, and use internal and cognitive drive mechanisms for managing emotion (Chaplin & Aldao, 2013). Regarding emotional disparities, different studies noted that girls tend to be better self-regulators than boys (Chaplin & Aldao 2013). There is also evidence of sex differences in emotion regulation. For example, boys have been found to use more avoidant emotional coping strategies than girls. There is evidence for gender-specific preferences in emotion expression and emotion regulation that seem not to start before middle childhood or adolescence (Chaplin & Aldao, 2013). Females more often report using social support, rumination, and primary control strategies. Males more often use avoidance or with increasing age passivity (Barkley, 1997).

In addition, for female adolescents, maternal behavioral control was significantly and positively related to limited access to emotion-regulatory strategies, and difficulties engaging in goal-directed behavior (Neuman & Koot, 2011). Even though very limited in number, studies were conducted in the local context. For instance, a study conducted in some selected junior secondary schools of Harari regional state, Ethiopia, by Amare (2019) evident that there is no statistically significant difference between males and females in their emotion regulation. Another study conducted in Addis Ababa reported inconsistent finding that states that there is a significant difference in emotion regulation concerning their gender, in favor of females (Belay, et al, 2014).

Age as a Determinant of Emotion among Adolescents

Adolescence is an age period with fast and fundamental alterations in biological, cognitive, social, and emotional domains (Lerner & Steinberg, 2009). During this developmental phase, many areas of life are accompanied by intense negative emotions in daily life (Silk, Steinberg & Morris, 2003) with often unstable peer or romantic relationships (Furman & Collins, 2009), and a decrease in perceived support from parents (Furman & Buhrmester, 1992). However, there is also variation within the adolescent period. In particular, early adolescence is characterized by a higher rate of conflicts with parents (Laursen, Coy, & Collins, 1998) and a higher variability of negative emotions compared to late adolescence (Larson, Moneta, Richards, & Wilson, 2002). In contrast to early adolescence, during middle adolescence the conflicts with parents become more emotional Laursen *et al.* (1998), and agreeableness and conscientiousness both decrease whereas neuroticism increases (Soto, John, Gosling & Potter, 2011). In particular, early adolescence is characterized by a higher rate of conflicts with parents and a higher variability of negative emotions compared to late adolescence (Larson *et al*., 2002).

In contrast to early adolescence, during middle adolescence, the conflicts with parents become more emotional agreeableness and conscientiousness both decrease whereas neuroticism increases (Soto *et al*., 2011). Emotion regulation includes all processes that are involved in changing current or expected emotional states regarding their intensity, quality, duration, speed of elicitation, and recovery in the service of adaptation (Thompson, 2010). Emotion-regulatory functions begin to develop during infancy and are influenced by individual temperament and endowment; as well as social factors such as caregiver-infant interactions and attachment (Kobak & Sceery, 1988). Emotion regulation abilities continue to increase as children develop through adolescence. During adolescence, the prefrontal cortex experiences tremendous growth, which stimulates the development of hindsight and forethought

(Barkley, 1997). These reflective skills allow adolescents to evaluate past and future events and support the development of more sophisticated plans.

The focus on peer relationships creates a heightened sensitivity to the evaluation of others, which may increase the intensity of certain self-conscious emotions such as pride or shame (Elkind & Bower, 1979). They also have a heightened awareness of the interpersonal consequences of certain emotional displays, which influence decisions regarding how they express their emotions (Fuchs & Thelen, 1988). For example, a decision to express emotion is more likely for adolescents when they anticipate a supportive reaction. Adolescence is a time where increased maturation and the need to navigate complex social interactions with peers and potential romantic partners become central developmental milestones. The ability to regulate emotions and manage emotional expression is important to establishing and maintaining relationships (Saarni, 1999). Therefore, the ability to recognize, label, and regulate their own emotions as well as accurately identifying the emotions of others and anticipating responses to emotional displays become key skills for successful development during this period and important preparation for transition into adulthood. A prominent use of and the maturation of adolescents' capability for regulating emotions makes adolescents a logical target population when developing a measure to understand the regulation strategies that are used to navigate emotions during a period filled with transition and increased environmental demands.

Parents' Educational Level as a Determinant of Emotion among Adolescents

Parental-level education is believed to be an important predictor so far as child development is concerned. In this respect, though not directly related to adolescents' emotional regulation, the parental level of education has important implications for adolescents' educational achievements. The family is the main factor influencing the lives and outcomes of students. A parent's educational level is a powerful factor influencing children's academic success. As Lazarus and Elizabeth, (1984) indicate, mothers' and fathers' level of education is statistically and significantly correlated with the child's performance. It has been established that generally, the educational level of parents is greatly connected to the educational attainment of their adolescents. This indicated that parents with more education are more involved in their adolescents' education though some uneducated parents are also involved in their children's education.

There are some studies conducted in Ethiopia that support this argument. For instance, the 2000 and 2005 Ethiopian Demographic and Health examined the role of parental-level education on adolescents' development through several pathways such as parental knowledge of health, maternal health-seeking behavior, family planning, and reproductive behavior. Their results indicate that parental-level education works through all paths except health-seeking behavior. To substantiate this further and how it might have been working with the young lives of adolescents over the last decade or so, we use parental level education as one of the most important grouping variables throughout the analysis. From the literature reviewed in this sub-section, it is possible to conceive that parental level of education has played an important role in student's academic success and motivation. Academic motivation and success are not similar to emotion regulation. However, the contribution of parental education that kinds of literature noted on different variables motivates this study to consider this particular study.

Family Structure as a Determinant of Emotion Regulation among Adolescents

Family structure is defined by whether the family includes a single parent or two parents and, among two-parent families, whether the adolescent is biologically related to each parent. These analyses consider family structure's associations with both caregiver and adolescent reports of the adolescent's concurrent physical health, behavior, and emotional well-being. In different research scholars try to see the various variables related to emotion regulation among these variables family structure was the major variable. Accordingly, Demo, and Acock (1996) reported that adolescents in first-married families have slightly higher levels of emotion regulation than adolescents from single-parent families or stepfamilies. Amato (2005) showed that children growing up with two continuously married parents are less likely to experience a wide range of cognitive, emotional, and social problems than their peers from households with only one biological parent. In contrast to the previously mentioned studies, Vandewater and Lansford (1998) found no emotional regulation differences between the investigated family structure groups.

Adolescents may receive less parental time and attention in both single-parent families and stepfamilies. Single parents appear to exert weaker control and make fewer demands on their children than married parents which leads adolescents to have low emotional stability in their environment (Thompson, 2010). Stepparents, on the other hand, generally provide lower levels of warmth and support to adolescents in comparison to their original parents. Research suggests that children and adolescents who spend time in these (single-parent and step-family types exhibit lower average levels of emotion regulation during both childhood and adulthood than do those who spend their entire childhood living with both of their biological parents (Amato, 2005). Recent investigations examine whether emotion regulation also differs by parental marital status for children living in two-parent families as well as by children's experience of family structure transitions. Research results showed that adolescents of the joint family systems were more emotionally mature as compared to those who live in the nuclear family system. A joint family system has a positive impact on emotionality and emotion stability increases with age.

Family cohesion as determinants of emotion adolescents

Family cohesion is the emotional bond that family members have toward one another. This is often reflected in supportive family involvement, family bonding, and family climate (Amato, 2005). This bounding enables families and adolescents to react to daily experiences in a more tolerant and flexible way (Thompson, 2010). Thus, emotion regulation has an important role in social adaption and functionality of family. Family members with this skill can discern when it is appropriate to express emotions immediately versus when it may be more appropriate to wait until the intensity of the situation is attenuated to address strong feelings. A strong bond between the family and child is important for family cohesiveness. Children are well-served when they feel a strong bond with the adults most responsible for their physical and psychological development (Lewis, Jones, & Barrett, 2008). Strong bonds with family members help teenagers to function well in their social environment like peers, parents, and teachers. In different research across several countries and cultural groups, family leisure is important to strengthening families (Ward & Zabriskie, 2011).

Another mechanism through which the family impacts children's emotion regulation is through the amount of emotion, both positive and negative, expressed verbally and nonverbally in the family. Most research on family expressivity has focused on parental expression of emotion. However, the emotional self-expression of each family member contributes to overall family expressiveness and the emotional climate of the family. There is a burgeoning amount of evidence suggesting that parental expression of emotion is related to children's socio-emotional development. Parental expression of positive emotion has been linked to children's pro-social behavior, social competence, emotion understanding, positive emotionality, and quality of the parent-child relationship (Eisenberg et al, 2003). Specifically, mild and moderate degrees of negative emotional expression may aid children in learning about emotions and emotional regulation by exposing them to a variety of emotions and how emotions can be managed. In contrast, high levels of negative emotional expression likely have a deleterious impact on children's development. Because of the distress caused by this level of negative expression, children not seeing their parent's model of successful regulation. There is also evidence that children of parents who are emotionally expressive in the family are more likely to be emotionally expressive themselves (Halberstadt et al., 1999).

Empirical Finding

Scholars and policymakers interested in work-life balance frequently lament that families do not spend enough time together. The concern over the lack of family time reflects a prevalent feeling in contemporary society that getting together has become a major challenge for many families because both parents and children are *extremely* busy (Buckner *et al*., 2003). The perception that families in which both parents are employed have scant time is troubling because family time is considered beneficial to family functioning and individuals' well-being. In this regard, research findings indicate that adolescents are engaged in risky behaviors like early age sexual engagement, and drug and substance abuse (Belay *et al*, 2014) this causes them to suffer from HIV/AIDS, unplanned pregnancy, and abortion research findings. However, the factors contributing to adolescents' emotion regulation were not particularly examined in the Ethiopian context. Therefore, there is a need to investigate if emotion-regulatory behavior can be lower among adolescent students in Harar, and if the associated

factors (age, gender, family structure, parental educational level, and family cohesion) would operate similarly in the Ethiopian (Harar) context.

Conceptual Framework

The framework presented below is developed based on the theoretical explanations and empirical findings reviewed so far in this chapter. Thus, determinants of emotion regulation among adolescents in Harari regional state secondary schools.

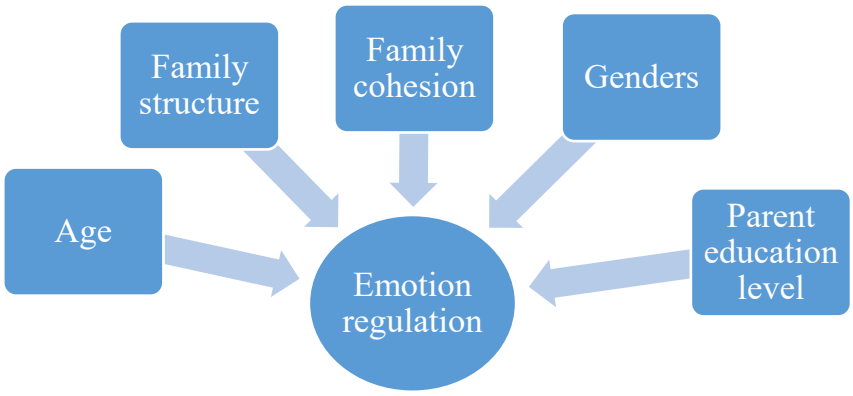


Figure 1. Factors Contributing to Adolescents' Emotion Regulation

Methods

A correlational research method design was employed to measure the relationship among age, family cohesion, family structure, gender, parental education level, and adolescent emotion regulation in Harari Regional State's secondary schools. Thinking that, this would best help fill the methodological gap inherent in existing literature and serve as a stepping stone to meaningfully address practical problems pertinent to the area. As many scholars in the field suggested, there is a multitude of issues that researchers need to consider while determining a research design since it is a glue print that holds all elements of the research together (Kothari, 2004). Accordingly, in this particular study, there is no way that the researcher assigns participants randomly to different groups, as there is no treatment component to be tested. This research design was chosen for its' appropriateness of the topic which primarily aims at examining the relationship between variables of interest. In terms of data collection, a cross-sectional approach was used.

The total number of secondary schools in Harari Regional State is 15. From fifteen general secondary schools (grades 9 to 10), seven were selected by using simple random sampling because simple random sampling gives an equal chance to all the schools. The total number of students from the seven selected schools is 1689. Thus, the researcher will take 323 (19 %) students once the researcher determines the sampling frame from all schools by using Taro 's formula. As the total number of participants to be included in the study, the population was stratified by gender. Regarding the selection of individual participants, a systematic random sampling technique was used to choose respondents from each stratum (males and females) because of comprehensive and representative of the population. According to Creswell's (2002) recommendation, it is possible to use a minimum sample size that detects moderate effect size with a 5-10 % level of significance for most research. In addition, the sample size by using a simplified formula of population proportion based on a 95% confidence level (Taro, 1967).

The researcher followed the procedures of Taro's (1967) formula to determine the sample size and it was indicated in the next formula. $n_i = \frac{N_i}{1 + N_i(\alpha^2)}$ where N_i is the total number of population; n_i is the total sample size to be included where α is the sampling error with α value of 0.05. Accordingly, the total sample size taken from the population is 323 as it was indicated below.

$$. n_i = \frac{N_i}{1 + N_i(\alpha)^2} = \frac{1689}{1 + 1689(0.05)^2} = \frac{1689}{1 + 1689(0.0025)} = \frac{1689}{1 + 4.2225} = \frac{1689}{5.2225} = 323$$

Out of the total target population, 1689, a total of 323 respondents were selected from randomly selected secondary schools of Harari Regional State as summarized below.

Table 1. Summary of participants selected from secondary schools

No	Names of Secondary Schools	Population (N_i)			Sample size (n_i)			Sampling techniques
		Male	Female	Total	M	Female	Total	
1.	Alhabesha	29	39	68	6	8	14	Stratified
2.	Bethelhem	76	99	175	15	19	34	Stratified
3.	Hamersa	308	217	525	59	42	101	Stratified
4.	Hira	18	37	55	3	7	10	Stratified
5.	Hi-tech	63	75	138	12	14	26	Stratified
6.	Lutheran	12	26	38	2	5	7	Stratified
7.	Shekib	356	334	690	68	64	132	Stratified
	Total	862	827	1689	165	158	323	

Self-reporting questionnaires were used as a major data-collecting instrument due to their convenience in collecting adequate information on the relationship between family cohesion and adolescent emotion regulation. The questionnaire has three major parts. The first part is composed of a series of questions prepared to assess the demographic variables; the second part is the family cohesion and adaptability scale that was used to examine family cohesion as perceived by adolescents and the third part is the emotion regulation questionnaire. Before the actual data was collected from the selected participant preliminary test was made. This test is used to check the reliability and validity of an item. As part of the research process, validating, standardizing, and contextualizing the instruments will be employed before trying to collect data from the actual study population.

FACES III (Family Adaptability and Cohesion Evaluation Scales III) is a measure of family functioning in terms of family cohesion and family flexibility. The instrument contains statements. Each item has five alternative responses: from 1 (Never to always). FACE III has internal consistencies that are fairly high r =.76 as well as high test-retest reliability r =.80. The Emotional Regulation Index for Children and Adolescents is a 17-item composed of three subscales. These are Emotional self-awareness, emotional control, and Situational Awareness of emotion. Respondents answer each item on a 5 –5-point Linker type scale ranging from 1(strongly disagree) to strongly agree (5). The original instruments in the English version were given to four judges from different backgrounds and educational qualifications. Before letting judges rate the items, raters were informed to think over two important points. One of which was to do the pools of items incorporated in the instrument measure the constructs under scrutiny (social adjustment and acculturation experiences of migrant returnees?). Therefore, for this particular question, respondents were requested to respond YES or NO. After, speculating on this, they were also informed to think over the strength of the items in measuring the aforementioned variables of interest. After the required data was collected, it was analyzed using SPPS version 20.

The data analysis involved both descriptive and inferential statistics. More specifically, the following methods of data analysis were employed. To organize and summarize data tabulation, mean, standard deviation, and percentage were used. To see the relationship between socio-demographics, family structure, family cohesion, and adolescent emotion30 regulation, Pearson product-moment correlation was used. Then to examine the effect of gender and family structure on adolescents' emotion regulation two ways ANOVA and one-way ANOVA were used to compare the mean difference between parental level of education and emotion regulation. To examine the effect size of variables (age, gender, and family cohesion) of interest on adolescents' emotion regulation multiple regressions were employed.

Results

Examining the association between socio-demographic variables (gender, age, educational level, and family structure) and emotion regulation was one of the major objectives of the current study. Accordingly, in the following subsequent sections of the chapter, the emotion regulation score was

statistically compared across the different levels of the independent variables (gender, age, educational level) were collected, and below was a tabular presentation of the socio-demographic characteristics of the participants. After the data clearance was made, the first thing that the researcher summarized was the socio-demographic features of the participants. In doing so, a total of 311(96.28%) cases were included among 323 (100%) in the current study whereas 12 (5.72%) cases were excluded because of the incompleteness of the returned questionnaires. As part of the socio-demographic variables, sample characteristics other than the study variables (gender, age, parents' educational status, and family structure) were collected, and below is a tabular presentation of these socio-demographic characteristics of the study participants.

Table 2. Summary of participants' personal information (n = 311)

Variables		Male		Female		Total	
		N_i	%	N	%	N	%
Family Education	Basic education	43	13.83	30	9. 65	73	23.47
	Elementary school	22	7.07	35	11.25	57	19.61
	Secondary school & above	86	27.65	95	30.55	181	58.20
	Total	151	48.55	160	51.45	311	100.00
Family structure	Nuclear Family	79	25.40	87	27.97	166	53.38
	Single parent family	40	12.86	27	8.68	67	21.54
	Step Family	16	5.14	18	5.79	34	10.93
	Extended Family	16	5.14	28	9.00	44	14.15
	Total	151	48.55	160	51.45	311	100.00

Table 2 indicates that the total number of participants was 311. Among these 160 (51.45%) were female and 151 (48.55%) of them were male respondents. Among all parents' level of education, the majority of them 181 (58.20%) were in Secondary and above followed by basic education 73 (23.47%) and elementary school 61 (19.61%). Regarding the family structure, participants of this study were from nuclear families 166 (53.38%), single parents 67 (21.54%), extended families 44 (14.15%), and stepfamilies 34 (10.93). Concerning the age of participants, the average age of the participants was 15.93 with a standard deviation of .98 and a range of 4 (14-18).

Table 3. A descriptive statistics of overall emotion regulation scale its sub-scale variables (N=311)

No.	Variables	Items	Range	Minimum	Maximum	Mean	SD
1.	Emotion regulation (ER)	17	33	43	76	52.26	8.62
2.	Emotional control (EC)	8	27	9	36	21.07	4.99
3.	Emotional awareness (EA)	5	20	6	26	16.31	3.58
4.	Environmental response (Env. R)	4	20	5	25	13.50	3.60

Table 4 indicated that the variables of interest of this study were emotion regulation (17 items) and its sub-scales (emotional control, 8- items; emotional awareness, 5 items; and environmental awareness, 4- items) with a five-point Likert scale. For all, descriptive statistics were computed and presented in the table. The computed mean and standard deviation scores of participants in the overall emotion regulation measure (M = 52.26, SD 8.62) were almost equal compared with the expected average (3*17= 51), maximum (5*17 = 85), and minimum (1*17= 17) scores. Therefore, visually inspecting the magnitude, emotion regulation scores among participants were similar. This means participants' level of emotion regulation is fairly good. Unlike in the overall emotion regulation measure, a slight mean difference was observed on the sub-scales. The participants' mean and standard deviation score on emotional awareness were (M =16.31; SD =3.58) and that of the environmental response were (M = 13.50; SD = 3.60) found to be slightly higher than the expected mean whilst a slightly lower score was observed on emotional control (M =21.07, SD = 4.99) compared to their expected means (3*5 =15), (3*4 =12) and (3*8 = 24) respectively. This result suggests that participants are better at emotional awareness and environmental response than emotional control.

Gender and Emotion Regulation

Before any parametric statistics were run, the dependent variable (emotion regulation) was tested whether or not it complies with the assumption of normality. To check this out, skewness and kurtosis z-values, Shapiro Wilk test p-value, histograms, and box plots were numerically and visually inspected. Hence the skewness and kurtosis z-values (the statistics divided by the standard error) were somewhere between -1.96 and +1.96. Accordingly, the emotion regulation scores were approximately normally distributed for both males and females, with a skewness of 1.53 (SE = .197) and kurtosis of 1.19 (SE = .179) for males and a skewness of .47 (SE = .192) and a kurtosis of 0.20 (SE =.891) for females. Moreover, the Shapiro Wilk test indicated that emotion regulation scores were approximately normally distributed, as the p-values for both males and females were above .05. It was also visually inspected in box plots and histograms that emotion regulation score was approximately normally distributed across gender, as the box plots were almost symmetrical and the curve in the histogram was bell-shaped.

Table 4. Comparison of emotion regulation scores across the parental level of education

No	Variables	N	M	SD	SV	SS	df	MS	F	Sig.
1.	Basic education	73	49.55	8.33	Between groups	860.57	2	430.29	5.16	0.01
2.	Primary education	67	51.54	9.63	Within groups	25687.26	308	83.40		
3.	Secondary & above education	181	55.70	8.30	Total	26547.83		310		
	Total	311	52.28	8.62						

After making sure that the assumption of normality is met, a one-way analysis of variance was computed to see if there exists a significant difference among the different educational levels of parents of the participants (basic education, primary education, and Secondary education and above) in terms of overall emotion regulation. Educational level is considered to be a factor for adolescents' emotion regulation, $F(2, 308) = 5.16$, $p < 0.05$. As variances and group sizes were Baunequal. The Games-Howell post hoc test was used to know where exactly the difference lies. Accordingly, post hoc comparisons of the Games-Howell test indicated that participants whose parents have secondary education and above (M = 55.70, SD = 8.30) were different in emotion regulation scores compared with participants from basic education (M = 49.55, SD =8.33) and primary education (M = 51.54, SD =9.63). On the contrary, the difference was not statistically significant for participants from basic education (M = 49.55, SD =8.33) and primary education (M = 51.54, SD = 9.63). Thus, the Games-Howell post hoc result concluded that adolescents whose parents have secondary education and above scored higher in the emotion regulation measure, which in turn is an indication that these groups of participants had better emotion regulation skills.

Table 5. Relationship among variables (sex, age, family cohesion, and emotion regulation (n =311)

No	Variables	1	2	3	4	5	6	7
1.	Sex (Male & Female)	1	.14*	-.08	-.06	-.10	-.04	.01
2.	Age		1	.06	.07	.10	-.01	.05
3.	Family cohesion			1	.84**	.59**	.72**	.61**
4.	Emotion regulation				1	.73**	.84**	72**
5.	Emotion control					1	.37**	.15**
6.	Emotion awareness						1	.64**
7	Environment regulation							1

** Correlation is significant at the 0.05 level (2-tailed).*

*** Correlation is significant at the 0.01 level (2-tailed).*

Table 5 shows that Pearson product-moment correlation was used to compute and identify the relationship among variables. Accordingly, predictors such as age and sex did not have any statistically

significant relationship with emotion regulation. However, family cohesion was found to have a positive and significant relationship with emotion regulation, r (309) = .84**, p<0.05. This means that the higher level of cohesiveness that a family develops would probably facilitate the likelihood of adolescents having higher emotion-regulatory skills. To summarize, family cohesion may have a predictive value on emotion regulation but on the contrary, age and sex did not have any significant relationship with emotion regulation.

Table 6. Male and female adolescents' emotion regulation scores by their family structure

No	Family structure	Emotion regulation								
		Male			Female			Total		
		N	Mean	SD	N	Mean	SD	N	Mean	SD
1.	Nuclear	79	62.01	8.63	87	64.51	7.82	166	63.26	8.23
2.	Single parent	40	50.76	8.82	27	53.04	10.89	67	51.90	9.86
3.	Stepfamily	16	43.94	7.02	18	46.75	8.55	34	45.36	7.79
4.	Extended family	16	47.13	7.09	28	49.71	10.12	44	48.42	8.61
	Total	151	50.96	7.89	160	53.50	9.35	311	52.26	8.62

Table 6 reveals that the mean and standard deviation (M = 62.01, SD = 8.63) of emotion regulation scores of males from the nuclear family structure is the highest followed by single-family (M = 50.76, SD = 8.82), extended family (M = 47.13, SD =7.09) while stepfamily (M = 43.94, SD = 7.02) is the lowest one. Like males, females' emotion regulation score from the nuclear family (M = 64.51, SD =7.82) is the highest followed by parent (M = 53.04, SD =10.89) and extended family (M = 49.71, SD =10.12). To determine whether this difference is significant or not and to see the interaction effect of the two main effects, two-way ANOVA was computed (Table 6).

Table 7. Main and interaction effects of sex and family structure on Adolescents' emotional regulation

No	Sources of Variation	Sum of Squares	df	Mean Squares	F	Sig.
1.	Corrected Model	2046.16	7	292.31	3.62	.001
2.	Intercept	532941.33	1	532941.33	6590.62	.000
3.	Sex	367.62	1	367.62	4.55	.034
4.	Family structure	1057.24	3	352.42	4.36	.005
5.	Sex * Family Structure	1354.75	3	451.58	5.59	.001
6.	Error	24501.67	296	82. 78		
7.	Total	562268.77	311			
8.	Corrected Total	26547.83	310			
R Squared = .77 (Adjusted R Squared = .76)						

As the two-way ANOVA results showed, there was a statistically significant sex difference, F (1, 310) = 4.55, p< .05) on the mean scores of male (50.96) and female (53.50) participants' emotion regulation in favor of females. The result suggests that gender affects adolescents' emotional regulation. Similarly, a statistically significant mean difference was observed, F (3, 310) = 4.36, p< .05 was also found on the mean score of participants' emotion regulation from nuclear (62.01) single parent (51.90), step-parent (45.36) and extended family (48.42) family structure. This indicates family structure has a significant effect on participants' emotional regulation. Likewise, as the factors (main effects) are significantly influencing emotion regulation, those factors are also producing significant interaction effect F (3, 310) = 5.59, p < .05, on emotion regulation.

Table 7. Scheffe's pairwise comparison test results in emotion regulation among adolescents from diverse family structure

No	(I)Family Structure	(J) family structure	Mean difference (I-J)	SE	*Sig.*
1.	Nuclear	Single parent	11.36	1.30	.000

		Stepfamily	17.90	1.69	.001
		Extended family	14.84	1.53	.012
2.	Single parent	Nuclear	-11.36	1.302	.000
		Stepfamily	6.54	1.89	.650
		Extended family	3.48	1.75	.995
3.	Stepfamily	Nuclear	-17.90	1.69	.001
		Single parent	-6.50	1.89	.227
		Extended family	-3.00	2.06	.296
4.	Extended family	Nuclear	-14.80	1.53	.012
		Single parent	-3.48	1.75	.101
		Step family	3.06	2.06	.295

Table 7 shows that there was a statistically significant mean difference between genders in adolescents' emotion regulation found in adolescents from nuclear and single-family structures. Likewise, there was a statistically significant mean difference in adolescents' emotion regulation from the nuclear family and adolescents from the family favoring the nuclear family. Furthermore, there was a statistically significant mean difference was found in adolescents' emotional regulation from nuclear and extended family in favor of again nuclear family. In general, as observed in the above pairwise comparison tests, the direction of group mean difference favors adolescents from nuclear family structure.

Table 8. Contributions of variables on emotion regulation

Effects	Standardized Coefficients (Beta)	R	R^2	t	*Sig.*
Family Cohesion	.84	.84	.7056	26.58	.001

Multiple regressions were conducted to determine the combined effects of all the predictor variables on emotion regulation. It was found that about 70.56% (R^2= .7056) of the variance in emotion regulation is explained by family cohesion. Thus, the variables other than those studied in this study accounted for 29.44% of the variability in adolescents' emotion regulation. The test of beta weights indicates among others, only family cohesion, $F (3, 310) = 238$, $p < .004$ makes a significant contribution to emotion regulation. In conclusion, family cohesion has a positive effect on emotion regulation. Family bonds and family togetherness are important for adolescent emotion regulation. No other variable could be entered in the further steps.

Discussion

This part deals with the discussion of the results of the study in comparison with other studies reviewed so far. It also provides general possible explanations for the findings. The major discussion topics are related to the research questions raised in the study. These include looking at the relationship between family cohesion and demographic variables, the main interaction effect of gender and family structure, and the predication value of age, gender, and family structure in emotion regulation. Among the research questions, one of the present studies posed was the relationship between family cohesion, demographic variables, and emotion regulation. Pearson's product-moment correlation was calculated to examine the relationship between the predictor variables (gender, age, family cohesion) and criterion variables (emotion regulation).

In the current study, gender does have a statistically significant relationship with emotion regulation. In comparing the means score females have better emotion regulation than males. Likewise, gender was found to make a significant difference in emotion regulation; supporting this study showing females being more emotion-regulated than males (Gottfredson and Hirschi, 1990). Furthermore, research stated studies found that girls tend to be better emotion regulators than boys. As mentioned, there is some variability in how females and males regulate their emotions, for example, females use different emotion regulation strategies to a larger degree than males (Shields & Cicchetti, 1997). Females have also been found to use both putatively adaptive and maladaptive emotion regulation strategies to a larger degree than males (Shields & Cicchetti, 1997). On the contrary, boys are likely to have more regulation difficulties and display more externalizing behavior compared to girls. In the

present study, age has no statistically significant relationship with adolescents' emotion regulation. This shows age has no contribution to adolescent emotion regulation. On the contrary, Laursen *et al.* (1998) show adolescence is characterized by a higher rate of conflicts with parents and a higher variability of negative emotions compared to adulthood. Emotional stability seems to be low during adolescence and is still not yet established during emerging adulthood. This emotional change shown during early and middle adolescence may be caused by biological changes with an increased reward dependency and intense hormonal influences. In supporting the findings Silk, Steinberg, and Morris (2003) found no age differences in the use of emotion regulation strategies from early to middle adolescence, whereas Zeman and Shipman (1996) reported more use of emotion regulation in 14-year-olds compared to 11- and 17-year-olds.

The result of the study indicated that family structure has a statistically significant effect on participants' emotion regulation. Likewise, as the factors (main effects) are significantly influencing emotion regulation, those factors are also producing significant interaction effects on emotion regulation. In support of this study, Demo and Acock (1996) have also stated adolescents in nuclear families have higher levels of emotion regulation than adolescents from single-parent families or stepfamilies. Similarly, Amato (2005) showed that children growing up with two continuously married parents are less likely to experience a wide range of cognitive, emotional, and social problems than their peers from single-parent families.

It might be because adolescents may receive less parental time and attention in both single-parent families and stepfamilies. Single parents appear to exert weaker control and make fewer demands on their children than married parents (Amato, 2005). In contrast to the previously mentioned studies, Belay *et al.* (2014); and Vandewater and Lansford (1998) found no differences between the investigated family structure groups. Furthermore, Stepparents, on the other hand, generally provide lower levels of warmth and support to children, in comparison to original parents, and may therefore not fully substitute for the original parent. Research suggests that children and adolescents who spend time in these (single-parent and step-family types exhibit lower average levels of emotion regulation during both childhood and adulthood than do those who spend their entire childhood living with both of their biological parents (Amato, 2005).

Parental-level education is believed to be an important predictor so far as child development is concerned. In this respect, though not directly related to adolescents' emotional regulation, the parental level of education has important implications for adolescents' educational achievements. The family is the main factor influencing the lives and outcomes of students. A parent's educational level is a powerful factor influencing children's academic success. As Lazarus and Elizabeth, (1984) indicate, mothers' and fathers' level of education is statistically and significantly correlated with the child's performance. It has been established that generally, the educational level of parents is greatly connected to the educational attainment of their adolescents' (Elizabeth and Lazarus, 1984). This indicated that parents with more education are more involved in their adolescents' education though some uneducated parents are also involved in their children's education. From the literature reviewed in this sub-section, it is possible to conceive that parental level of education has played an important role in student's academic success and motivation. Academic motivation and success are not similar to emotion regulation. However, the contribution of parental education is that literature.

Conclusions

From the results of the descriptive and inferential statistics, the following major points can be inferred.

- Among parental levels of education being a family member of high school and above, including grade nine to twelve through a university degree, makes a difference in adolescents' emotion regulation score.
- Females are more likely to have better emotion-regulatory skills than their male counterparts whereas, age does not have a significant relationship with adolescents' emotion regulation.
- Adolescents' whose families are cohesive enough in their lives are likely to have higher emotion regulatory skills than those of families who are not.
- Gender and family structure are important factors that could produce important effects both separately and jointly together on adolescents' emotion regulation. It is because of females and

nuclear family structure that the main effects produce separate and interaction effects on adolescents' emotion regulation scores.

- Family cohesion alone is an important variable among others that add up to the majority of the variability on adolescents' emotion regulation while age and gender are not able to predict emotion regulation. This means that family bonds and family togetherness are important for adolescent emotion regulation.

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LIBRARIES WITHOUT BORDERS: REGIONAL AND EUROPEAN COLLABORATIONS FOR CULTURAL DIVERSITY

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Abstract

This paper explores the roles and significance of libraries as bridges for cultural diversity through regional and European collaboration. Libraries, as borderless institutions, promote the protection and preservation of cultural values and traditions in the era of globalization. Various forms of partnerships, projects, and networks enabling the exchange of resources, knowledge, and experiences among libraries from different countries are analyzed. Special attention is given to how libraries contribute to cultural inclusion and support for minority communities through joint initiatives at the European level. The paper offers recommendations for enhancing cooperation and outlining future directions for the development of library services, grounded in the principles of multiculturalism and tolerance.

Keywords: library, cultural diversity, regional collaboration, European collaboration, cultural inclusion, multiculturalism.

Introduction

In the contemporary era characterized by globalization, rapid technological development, and increased human mobility, libraries have evolved from traditional repositories of knowledge into dynamic, socially engaged institutions that actively contribute to cultural dialogue and intercultural understanding. As public spaces open to all members of society, libraries play a crucial role in promoting inclusivity, lifelong learning, and access to information regardless of social, cultural, or linguistic differences (Calhoun, 2014).

Within the European context, libraries are increasingly recognized as key actors in preserving cultural diversity while simultaneously fostering cross-border collaboration and shared cultural identity. Their mission extends beyond safeguarding cultural heritage to facilitating communication between communities and supporting marginalized and minority groups (Jakimovska-Toshikj, 2021).

This paper explores the role of libraries as bridges for cultural diversity through regional and European cooperation. Special attention is given to collaborative initiatives such as Erasmus+ programs, bilateral partnerships, cross-border cultural projects, and regional library networks. By analyzing these forms of cooperation, the study highlights how libraries contribute to cultural inclusion, intercultural dialogue, and the strengthening of European values such as tolerance, diversity, and solidarity.

Regional Library Partnerships

Regional cooperation among libraries represents a fundamental mechanism for strengthening institutional capacity, improving services, and fostering cultural exchange. In this context, collaboration is not limited to national frameworks but extends across borders, enabling libraries to share knowledge, resources, and best practices. Such partnerships contribute to the professional development of librarians and the modernization of library services (Varga, 2016).

One of the most prominent examples of regional cooperation is the Regional Network for Cultural Diversity (READ), supported by the Goethe-Institut and implemented in several Balkan countries. This initiative promotes multilingualism, supports local authors, and enhances access to literature through mobile libraries and cultural events (Goethe-Institut Skopje / LOJA, 2020–2024).

Furthermore, regional collaboration is often facilitated through international conferences and professional networks. The Library Association of Macedonia plays a significant role in this process by organizing annual conferences that bring together librarians from Southeast Europe. These events serve

as platforms for exchanging experiences, discussing common challenges, and developing joint strategies for the advancement of library services.

Such partnerships are particularly important for countries in transition, where libraries face challenges related to funding, digitization, and modernization. Through regional cooperation, these institutions gain access to international expertise and innovative practices, thereby improving their role as cultural and educational centers.

Bilateral Projects

Bilateral cooperation between libraries represents a more focused and structured form of collaboration, often supported by governmental or institutional agreements. These projects typically aim to promote cultural exchange, translation of literature, and strengthening of international relations.

A notable example is the project "Polska na Polica" (Poland on the Shelf), implemented in cooperation with the Polish Book Institute and supported by the Ministry of Culture of North Macedonia. This initiative significantly enriched Macedonian libraries with translated works of Polish literature, thereby enhancing cultural exchange and promoting literary diversity.

Beyond the donation of books, the project included a wide range of activities such as literary events, author presentations, and professional training for librarians. These activities contributed to the development of intercultural competencies among both librarians and users, fostering a deeper understanding of Polish culture and literature.

Moreover, the exchange visits between Macedonian and Polish librarians represent an important dimension of professional development. Exposure to different library systems, such as the University Library in Wrocław and specialized institutions like mediatheques, enables participants to adopt innovative practices and improve their own services (Calhoun, 2014).

Bilateral projects, therefore, not only promote cultural diplomacy but also strengthen institutional capacities and professional networks.

Participation in Erasmus+ Projects

Participation in European programs such as Erasmus+ plays a crucial role in the modernization and internationalization of libraries. These projects provide opportunities for mobility, training, and knowledge exchange, enabling librarians to develop new skills and competencies.

The project "The Library Against Bullying and Cyberbullying" represents an example of how libraries address contemporary social challenges. Through participation in training activities, librarians acquire tools and methodologies for supporting young users in dealing with issues such as digital violence and online safety. This demonstrates the expanding role of libraries as institutions that respond to societal needs beyond traditional information services.

Another significant initiative, "Sasas Jekhvar Jekh – Once… and Now", focuses on the preservation of Romani cultural heritage. By collecting and sharing oral traditions, this project contributes to the visibility and recognition of minority cultures within the European cultural space. Such initiatives align with European policies promoting inclusion and diversity (Mironska-Hristovska, 2021).

Through Erasmus+ participation, libraries strengthen their role as agents of social change, promoting equality, inclusion, and intercultural dialogue.

Cross-Border Cultural Projects

Cross-border cooperation represents a key dimension of cultural integration in Europe, particularly in regions with shared historical and cultural ties. Libraries play an essential role in facilitating such cooperation by organizing joint cultural events and initiatives.

The project "Listen to the Lake", implemented by libraries from Ohrid, Struga, and Pogradec, illustrates how cultural heritage can serve as a unifying element. By bringing together poets and artists from different countries, this initiative promotes intercultural dialogue and mutual understanding.

These projects are often supported by national ministries and international organizations, reflecting the recognition of culture as a strategic area for regional cooperation. Furthermore, they contribute to the development of cultural tourism and the strengthening of local communities.

Cross-border initiatives also provide opportunities for knowledge exchange and professional collaboration. Librarians participating in such projects gain valuable experience in organizing international events and working in multicultural environments.

COBISS and Regional Conferences

The implementation of the COBISS system represents a significant achievement in regional library cooperation. Developed in Slovenia, this system enables shared cataloguing and resource management across multiple countries, including North Macedonia.

By participating in the COBISS network, libraries improve the efficiency of their operations and enhance access to information. The system facilitates the exchange of bibliographic data and supports the development of a unified library information infrastructure in the region (EIFL North Macedonia, 2014).

In addition, regional conferences organized within the COBISS network provide opportunities for professional development and knowledge exchange. These events bring together librarians from different countries, fostering collaboration and strengthening regional ties.

Such initiatives demonstrate the importance of technological integration in modern library systems and highlight the role of digital tools in supporting cultural diversity and access to information.

Libraries and Cultural Diversity in the European Context

At the European level, libraries are supported by various policies and initiatives aimed at preserving and promoting cultural diversity. Programs such as Creative Europe and Europeana play a crucial role in facilitating access to cultural heritage and supporting cross-border collaboration.

These initiatives emphasize digitization as a key strategy for preserving cultural resources and making them accessible to a global audience. Digital libraries and online platforms enable users to explore diverse cultural content, thereby promoting intercultural understanding and education (Calhoun, 2014).

Furthermore, European policies highlight the importance of cultural inclusion, particularly for minority and marginalized communities. Libraries contribute to this goal by providing access to multilingual resources, organizing cultural events, and supporting community engagement.

In this context, libraries serve as mediators between local and global cultures, ensuring that cultural diversity is preserved while also contributing to a shared European identity.

Conclusion

Libraries in Europe play a vital role in preserving and promoting cultural diversity through regional and international cooperation. By participating in initiatives such as Erasmus+, Creative Europe, and cross-border cultural projects, libraries contribute to the development of inclusive and culturally diverse societies.

North Macedonia actively participates in these processes, demonstrating the importance of collaboration in strengthening library services and promoting cultural heritage. Through partnerships, digitization efforts, and professional networks, libraries enhance their capacity to serve diverse communities and respond to contemporary challenges.

Future developments should focus on strengthening international cooperation, investing in digital infrastructure, and promoting inclusive policies that ensure equal access to cultural resources. In this way, libraries will continue to serve as bridges between cultures, connecting past traditions with future innovations.

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THE APPLICATION OF COGNITIVE LINGUISTICS (CL) PRINCIPLES IN THE DIGITAL LANGUAGE CLASSROOM: AN ONLINE ELT TEACHERS' PERSPECTIVES

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Abstract

Cognitive Linguistics (CL) is regarded as an interdisciplinary field of science which focuses on explaining the relationship between language, mind and experiences. A growing body of research has attempted to incorporate cognitive linguistics principles into language teaching context. To date, most pedagogical applications have been largely concentrated on the traditional classroom settings, with relatively very few studies considering the digital environment.

This paper investigates online teachers' familiarity with the concept of cognitive linguistics. Moreover, it explores teachers' perspectives on the employment of activities derived from the application of cognitive linguistics principles in the online language classroom. The quantitative data reveal that although teachers report limited knowledge of CL principles, they display strong awareness of digital pedagogy. Most participants view CL - based activities as adaptable and engaging, supporting deeper conceptual understanding and greater learner involvement. Despite these positive attitudes, several constraints were identified including insufficient training, time constraints, digital resources scarcity and curriculum - related restrictions. However, the majority of respondents expressed a clear interest in further professional development related to CL. This paper offers preliminary insights into how cognitive linguistics may be integrated with digital pedagogy and calls for more extensive empirical research to evaluate and refine CL – informed practices in virtual settings.

Keywords: Cognitive linguistics, ELT, digital pedagogy, cognitive linguistics informed activities

1. Introduction

It is necessary here to first clarify exactly what is meant by *cognitivism* before we discuss cognitive linguistics principles and their relevance to the digital language classroom. Cognitivism is generally defined as a theory of learning that focuses on the human mind, thinking, and mental processes connected to them. (Akhmedova, 2020) Cognitive linguistics has become an interdisciplinary branch of cognitive science closely related to cognitive psychology and linguistics its purpose being the study and analysis of language as a cognitive action. (Najimova & Kartbaeva, 2020) (Gascón & García, 2018) It can be said that cognitive linguistics is a modern approach originating in the late 1970s and the early 1980s in response to traditional, particularly Chomskyan approaches. (Gascón & García, 2018) (Holme, 2009) Studies in this approach have been focusing on the notion that we learn language the same way as we learn other information about the world. (Taylor & Littlemore, 2014) (Rao, 2021) (Ellis, 2006) Two main figures associated with this field, George Lakoff and Ronald Langacker, heavily contributed to the concepts of cognitive linguistics with the intention o

f implementing those concepts in language teaching or transforming the approaches of language teaching. (Taylor & Littlemore, 2014) (Robinson & Ellis, 2008) In this study, I attempt to make a connection between cognitive linguistics principles and the digital ELT. Due to practical constraints and the limited literature on digital pedagogy, the discussion presents a focused, exploratory overview rather than a comprehension review. The reader should also bear in mind that the opinions in this paper are based on theoretical insights, teachers' survey findings as well as my online teaching experience.

Throughout this paper, the term CL will refer to cognitive linguistics, DP will refer to digital pedagogy, ELT to English language teaching, and ACL to applied cognitive linguistics.

2. Literature review

2.1. Revisiting cognitive linguistics principles

As was pointed out in the introduction to this paper, George Lakoff and Ronald Langacker initiated the opposition to the Generative Grammar and Formal Semantics through their field of cognitive linguistics. (Evans, 2012). Being part of cognitive psychology, cognitive linguistics also examines the functional approach to language. (Zhao, 2016) It is imperative to emphasise that cognitive linguistics is a multidimensional field; to clarify, its focus is not solely on one theory, yet, it includes a

variety of theories. (Gascón & García, 2018) These theories are referred to as commitments and thesis, which concentrate on the connection between human language, the mind, and the sociophysical experience. (Evans, 2012) (Nga, 2023)

2.2. Cognitive Linguistics Commitments

Central to Cognitive linguistics are two main commitments: the Cognitive Commitment and the Generalisation Commitment. (Rao, 2021)

- The Cognitive Commitment

According to cognitive commitment, the principles of linguistic structure need to be in accordance with the knowledge of human cognition derived from other cognitive sciences such as psychology, artificial intelligence, cognitive neuroscience, and philosophy. (Evans, 2012)

- The Generalisation Commitment

The Generalisation Commitment rejects the idea that various aspects of linguistic knowledge come from separate modules of the mind; instead, various aspects of linguistic knowledge derive from a common set of human cognitive abilities. (Evans, 2012)

Consequently, these two commitments gave rise to five central hypotheses:

- The thesis of embodied cognition
- The thesis of encyclopaedic semantics
- The symbolic thesis
- The thesis that meaning is conceptualization
- The usage - based thesis (Evans, 2012) (Taylor & Littlemore, 2014) (Croft & Cruse, 2004)

a. The Thesis of Embodied Cognition

As explained by Evans (2012), one aspect of this thesis suggests that reality is not objectively presented, yet it is shaped by our individual embodiment - the synthesis of embodied experience. To be more specific, recalling or contemplating concepts happens when our brain reactivates neural patterns that are recorded as part of our embodied experience. These reactivations are called simulations. Simulations are deeply rooted in the brain states, resulting from our interaction and action with the sociophysical environment.

b. The Thesis of Encyclopaedic Semantics

Similar to the previous concept of embodied cognition, this thesis, as elaborated by Evans (2012) also consists of two aspects. The first aspect focuses on the relationship between the semantic representations, known as semantic structure, and the conceptual representations. The second aspect looks at views that language concepts are part of a structured knowledge, referred to as semantic potential and likened to an encyclopaedia.

c. The Symbolic Thesis

The following thesis posits that the fundamental unit of grammar is a form - meaning pairing or a symbolic unit. (Langacker, 2008 as cited in Dolgova, 2016, p.1) In addition, the symbolic thesis maintains that mental grammar consists of a form, a semantic unit and a symbolic connection between the first two. Stated differently, our mental grammar contains units of pairings of form and meaning.

d. Meaning is Conceptualization Thesis

As asserted by cognitive linguists, meaning conveyed through language includes the process of conceptualisation. To further explain, one understands language via the process of conceptualisation, which covers linguistic and nonlinguistic cognitive activities. (Pavlović, 2010) This thesis holds that during the process of language understanding, symbolic units are combined resulting in nonlinguistic units of meaning. Two approaches to meaning constructions have been developed by the cognitive linguistics: the first looks at the types of nonlinguistic mechanisms called ‘backstage cognition’. Backstage cognition is then clarified through two theories: Mental Space Theory, which explains the creation of mental spaces, and Conceptual Blending Theory, which deals with their integration to produce new meanings. (Evans, 2012)

e. The Usage - Based Thesis

The core concept of this thesis is that the mental grammar of a language user is shaped through abstraction of symbolic units from language use in real life situations. A significant outcome of accepting this thesis is that there is no straightforward difference between knowledge of language and

use of language for knowledge derives from usage. Therefore, knowledge of language is knowledge of how language is used. (Evans, 2012)

3. ELT in the Digital ERA

Recent world happenings, such as the Covid - 19 pandemic outbreak and the continuing advancements in AI, have had a profound influence on language teaching and language learning. Consequently, the communicative aspect of language suffered a major impact by the practice of 'social distancing' (Li & Lan, 2021). Li and Lan (2021) point out that such practice brought about cognitive disturbances and difficulties in language learning for both children and adults. However, these challenges have been successfully being dealt with the help of digital technologies. Additionally to this, these rapid technological developments have resulted in Digital Language Learning (DLL) as a standard educational practice in all sectors. (Li & Lan, 2021) The emphasis on the use of technology for language learning and teaching has shifted across different periods. As explained by Warschauer (2004), the behaviourist movement was predominant between 1970s and the 1980s and during this period the 'computer learner' was perceived as part of the stimulus - response relationship resulting in the drill - and - practice being the main method. It was then in the 1980s and the 1990s when the cognitive approach rejected the behaviourist views that the focus turned to communication and fluency. At the same time, CALL (computer – assisted language learning) started to expand. Later on, in the 2000s, a greater emphasis was placed on the authentic context of learning and social interaction as well as the socialcognitive scopes on learning. This authentic context encompassed social media and multimedia technologies and language was no longer considered isolated from the environment yet embedded in the context. (Li & Lan, 2021)

3.1. The rise of digital pedagogy

The Covid - 19 pandemic, as mentioned earlier, reset world education and posed challenges that caused a shift in educationalists' perspectives. 'Digital pedagogy' is one intriguing example, 'outcome' or blended concept containing two notions, 'digital' and 'pedagogy'. Digital pedagogy refers to online, blended, and physical environments and combines views and methods that include the application of digital technologies. (Giannikas, 2020) As such, it centres around the pedagogical impact these technologies have on language learning and cognitive development. Similarly, Mishra describes 'digital pedagogy' as a field that unites technical and theoretical information, as well as education and pedagogical criticism. (Mishra & Mishra, 2019) Additionally to this, multiple studies refer to this pedagogy as innovative digital pedagogy.

3.2. Where Cognitive Linguistics meets ELT: Implications in online ELT

CL is built upon cognitive, social, and communicative theories i.e. it lays emphasis on how humans convey their experiences from their interactions with the physical world into language. (Evans & Green, 2006) This process suggests that perceptions are shaped before linguistic meaning and form are created in the human mind. (Evans & Green, 2006) Studies in CL maintain that language mirrors how people construct social events in their experiences. From the aforementioned, we can deduce that CL has certain implications for the ELT field. As implied by Zavalniuk, Bohatko, Pavlyuk, Kholod, and Horobets (2021) these implications gave rise to a distinct field of applied cognitive linguistics (ACL). Furthermore, the attention of the new field is directed towards the convergence of ACL and foreign language teaching. Given this, the practical applications of CL may improve language teaching as well as offer solutions to issues in language learning. (Bui, 2019) In order to support this, it is necessary to activate the theoretical and empirical research of CL and build it into pedagogical practices. Despite the growing research in CL and ELT, little data has been found associating CL and online ELT. Therefore, I intend to base this paper on the employment of a selection of CL related activities and share my insights into their utilisations in the online ELT along with the perspectives of a number of online EL teachers.

Holme (2009) draws our attention to specific activities that language teachers can employ in the language classrooms:

Language teaching and embodiment (Holme, 2009)

Embodied learning points out to strategies that employ movements and body to achieve effective language learning. (Jusslin, S., et al, 2022) Moreover, it looks at the creation of activities that

encompass the exploratory process. That is, linguistic meaning and symbols will be more memorable to learners if they are accompanied by movements, gestures, and imagery from which they derived.

a. language as rhythm and movement (Holme, 2009)

Dalcroze's views on music, as given in Holme (2009), suggest that music should be experienced not only through the movement of the body, but also through mime and dance, called eurytmics. Holme (2009) provides an example of language activity reflecting this view:

Activity: Feeling the stress

The teacher introduces a new vocabulary item by inserting it into an iambic line. For example: 'cupboard': The˘re i¯s a˘ cu¯pbo˘ ard in¯ my˘ ho¯use. The teacher walks and says the line at the same time. They try to say it by taking a small quiet step when the syllable is unstressed, then stamping when is stressed. The teacher then asks a student to repeat exactly as they do. They ask the class to tap out the stress with their hands on the table. This activity can be used across all age groups, as stated by Holme. (2009) and also incorporated into the online context.

b. Language and mime, enactment, and movement (Holme, 2009)

Activities that include movement, stress and rhythm, also connect language with the body's ability to express meaning through symbols. According to researchers, 'vocabulary learning can be helped by the physical enactment of vocabulary'. (Craik and Lockhart 1972; Duffelmeyer 1980; Boers and Lindstromberg 2005, in Holme 2009). Drama and storytelling as teaching methods have been practiced by the ELT teachers for a long time. Thus, they can utilise the same activities, for instance, telling a story and instructing students to mime it. My personal online experience witnesses the use of mime in the online classroom for storytelling activities, grammar and vocabulary teaching.

Activity: Moving through language

The teacher gives the class a short story that can be easily divided into the sequence of Abstract, Orientation, Complicating Action, Evaluation, Resolution, Coda (Labov and Waletsky 1967, in Holme, 2009). The teacher asks the class to divide the text into appropriate discoursal moves, for example: I had rather a strange journey home yesterday (abstract); And, as you know, I only live a few streets away from school (orientation); When waiting at the lights, I saw a man lift a wallet from a lady's shopping bag (complicating action); He didn't look threatening (evaluation); So I decided to follow him without saying anything (complicating action); Then something totally unexpected happened (evaluation); Suddenly he seemed to notice me, turned and held out the wallet and said, 'here' giving me the wallet before running into the crowd (complicating action) I handed the wallet into a police station but of course there was no money in it (resolution);And I'm still amazed at the nerve of the man (coda). (Holme, 2009)

This activity can be realised in online breakout rooms where the teacher will assign the roles and then have a group check. The teacher checks that each group produces an acceptable analysis. A pair of students leaves the 'class'. The teacher calls them the narrators, takes their texts from them and gives them the moves only. Then, the teacher asks them to recall the text and write it down, filling in each move. The teacher assigns one or more moves to each group at random until each move has been given out. In groups (in breakout rooms), the students rehearse their move as a mime. The narrator comes back into 'class'. Each group performs their mime out of order. The narrator assigns each group a number according to where the group's mime occurs in the story sequence. They can ask a group to repeat their scene as often as needed. The narrator moves among the class pointing to each group to ask them to mime their part of the story. The narrator then says what has been shown and the class corrects.

c. Rethinking TPR

TPR is an approach that began in the 80s whose main objective is to prompt students to physically respond to language without any output. Considering that TPR as a language approach recognises the CL principle of embodiment, we have the have the following activities (Holme, 2009):

Activity: What am I doing?

The teacher asks the class to think of some simple (and sensible) action that they want another student to perform, such as cleaning the board or opening a window. The teacher asks one student to instruct another how to perform it without saying what it is, whilst the other carries it out movement by movement and never doing more than instructed. (Holme, 2009)

Activity: What am I?

The teacher gives students a card telling them they are some functional artefact (e.g. a washing machine). The teacher tells them to think how they would imitate and express the object's function,

taking it through its functional cycle (e.g. wash, rinse, dry), then how they would ask another student to mime that cycle. In pairs and by turn, student A tells student B how to mime the cycle without saying what the cycle is. The class guess what the mime is about by saying what is happening at any given moment. (Holme, 2009)

Use of Gestures in Language Teaching

Gestures are an inseparable part of human communication. Therefore, in recent years, there has been considerable interest in the use of gestures in language, particularly by cognitive linguistics. According to CL views, gestures are crucial as they provide clues to the conceptualisation during language use. For instance, gestures are often used when teaching tenses. As given in Holme (2009), pointing to the behind of the student denotes the past, whereas pointing to the front refers to the future. Similarly, present perfect can be illustrated through down - beat of the hands. As such, these types of activities can also be 'performed' in the online classroom. Below is the example of Lindner, (cited in Holme, 2009, p. 59)

• 'up' as an expression of movement or a path: raising the hand above the head;

• 'up' as a static location: hand held above the head;

• 'down' as an expression of movement or a path: index finger moving down below the waist in the direction of the ground;

• 'down', as a static location: hand below the waist, palm flat towards the ground.

• 'across' (hand flat and palm down sweeps over the floor);

• 'over' (hand extends and arm arches up and over);

• 'through' (hand pushes effortfully forward).

• 'across' (flat, rapid and dismissive);

• 'over' (rising intonation on the first syllable, fall on the second, extension of the first syllable o___ver);

• 'through' (effortful, as if pushing against an obstacle). (Holme, 2009)

Gesture and English articles

Teaching English articles can be challenging for teachers, especially if the learners' native language does not constitute the concept of definiteness and indefiniteness. Here is an activity that could simplify the delivery of this grammar topic:

Activity: Determined gesture

The teacher shows the class similar but distinguishable sets of objects such as books on a shelf or pictures on a wall. The teacher asks students to select objects by pointing to them and using the definite article ('I want the red book on the right'). After a few objects have been distributed, the teacher asks other students to ask each other for them using phrases of possession ('I want the red book that Jane has'). (Holme, 2009)

Language, culture and conceptualisation in the classroom

Two CL tenets embody the following: first, that meaning is conceptualised and as such needs to be shared among individuals so as to support communication; second, that language, culture, and meaning are interconnected.

Activity: What we do with it

In groups, students select an international trend or product associated with a target language culture. For example a Hollywood film or international restaurant chain. Out of class, the groups research local responses to the product, assessing how the same entity may be differently perceived. (Holme, 2009)

Activity: Cross-cultural meanings

The teacher compiles a list of abstract words that represent key socio-cultural concepts, for example: friendship, family, love, home... In groups, the teacher asks the students to come up with statements for each word on the list as follows: In the USA friendship is … In my country, friendship is….The groups should discuss why they have said what they have, and provide supporting anecdotes where possible. The teacher asks each group to make a presentation on the meaning of one of the concepts in one country then in a target-language country. (Holme, 2009)

Construal and Language Teaching

Another major focus of Cognitive Linguistics is the construal i.e. the different ways of conceptualising a scene. (Langacker, 1987 cited in Holme, 2009) For cognitive linguists, there isn't a

true synonymy since a different choice of words will achieve a different construal. Hence, language is conceptual instead of perceptual.

Activity: The room

The teacher asks students to close their eyes and listen to the following text: She went into a room. There was some old furniture and a fire burning. A cat lay purring on the carpet. The teacher asks the class to listen again and note down all the nouns, starting with the most comprehensive category in the description, for example, 'the room' . . . Working in pairs, students should describe what the first noun names and take notes. Thus for 'room' the students say how the room looked, what was in it, and where it was situated. They should detail the furniture, whilst asking the teacher to supply unknown vocabulary. (Holme, 2009)

Activity: My what?

The teacher teaches a question and answer routine as follows: the teacher says 'my table has.. .' using countable nouns, the student responds 'your table has what?' the teacher responds: 'my table has one leg' the teacher practises with other nouns. After a few minutes practice, the teacher responds by asking: 'the book has four pages that..? ' to elicit 'that what?' to get for example, 'that are difficult to understand'. The teacher stops here, or asks someone to repeat the entire sentence so far and extend with another relative pronoun in the same way as before: 'My book has four pages that are difficult to understand but which . . .' (Holme, 2009)

Metaphor and language teaching

Block (cited in Holme, 2009, p. 135) observes the way teachers and students use different metaphors in order to construe the language learning task.

Activity: Keeping it together

When introducing new abstract lexis or an idiomatic phrase, the teacher identifies a conceptual metaphor in which the forms could be said to originate. After identifying an appropriate metaphor, the teacher places it in the middle of the board and brainstorm for forms that derive from it. As they produce new forms they write them on the board around the conceptual metaphor, thus producing a type of mind map. Either in speech, writing, or both, students try to come up with sentences that use the brainstormed forms. (Holme, 2009) This activity can be adapted to the online context the difference being in using specific platforms for brainstorming.

Teaching Encyclopaedic Meaning

Teaching vocabulary involves more than solely finding native language equivalents and matching the meaning to the L2. In order to build encyclopaedic meanings, students first have to uncover the different meanings words express in various contexts and then create more extensive categories.

Activity: What it really is

The teacher divides the class into two or three teams. The teacher tells them that they are going to build knowledge about a particular item but that if they call out what they think the item is, they will be disqualified. The teacher divides the working sheet into columns marked by: 'how we use it', 'how I use it', 'what it must have', 'what mine has'. The teacher thinks of the specific example of a category that is known or unknown to the class. For example, their house, a favourite chair, or book. The teacher asks the class to suggest sentences that describe what they think the object is. The sentences must fit one of the headings written on the board. When the class has produced enough knowledge about the item to build a complete category description, the teacher asks them to describe it orally, in writing, or both, using the notes on the board. (Holme, 2009).

Teaching Constructions

According to Goldberg's definition (as cited in Holme, 2009, p.178), a construction is a meaning that 'combines others to create one that cannot be predicted from the combined parts'. He further illustrates the definition with the prepositional phrase, consisting of a preposition 'to', the definite article 'the', and the noun 'house' as in 'to the house'. Constructions can be fully filled, where all the words are specified (e.g. idioms) or partially filled, where only some elements are fixed, such as bound morphemes or inflections. For example, idioms can be taught through activities where students explore and present the roots of idioms as project work. (Holme, 2009).

Activity: Pride and prejudice

The teacher brainstorms for the 'cognitive' verbs: 'think, realise, wanted, hoped (for), know, expect, imagine'. The teacher brainstorms for adjectives that describe somebody's character. The teacher asks students to remember somebody who they got wrong and to say why they did or did not like this person. The teacher asks them to make constructions using examples as a model (He is wiser than I thought). The teacher repeats the exercise with things they bought and subsequently found disappointing and/or places they visited or events they attended that were a let-down. The teacher provides the verbs, 'mean, intend, plan, and expect' then repeat with an idea that 'turned out better than planned'. (Holme, 2009)

4. Research

Due to practical constraints, this paper cannot provide a comprehensive review of teachers' perspectives regarding the application of the aforementioned teaching activities. Hence, a short anonymous survey was conducted as a preliminary quantitative study to explore online teachers' preview on their understanding of CL as well as their knowledge of CL principles applications in the online classroom. The survey included ten online English language teachers with whom I work in the same institution and who teach English as a second language across the world. These ten teachers teach students at all ages and levels, yet, due to mentioned limitations, the survey did not cover a specific age and/or level, yet, it only required the participants to be solely teachers of English who teach in an online setting. The survey was undertaken to examine general perceptions of the CL principles and their employment in the digital language classroom. Therefore, it offered fifteen single and multiple choice questions based on the prior theoretical review.

5. Results and discussion

The results show that teachers possess limited theoretical understanding of cognitive linguistics. The majority of teachers reported only basic familiarity with the approach, whereas fewer exhibited moderate understanding and one indicated minimal or no knowledge. Knowledge of specific cognitive linguistics principles was limited; however, some participants identified core concepts such as The Cognitive Commitment, The Thesis of Embodied Cognition, The Thesis of Encyclopaedic Semantics, Meaning is Conceptualisation Thesis, and The Usage Based Thesis. Even though the participants demonstrated limited theoretical background, most of them recognised the application of CL principles in language teaching. By contrast, teachers displayed strong familiarity with the concept of digital pedagogy with almost all acknowledging experience with the technology – supported teaching practices. These findings indicate readiness to incorporate innovative methodologies in the online environments.

Overall, teachers expressed positive attitudes toward the suggested CL-based activities, with the majority indicating likelihood of employing them in the online classroom. The activities were regarded as engaging, flexible fostering deeper understanding and active participation. Participants highlighted the pedagogical significance of the tasks considering them innovative and adaptable to different ages and proficiency levels. However, several practical and structural obstacles were identified, including insufficient training, time limitations, scarcity of digital resources and curricular constraints. A few teachers questioned the suitability of some of the activities for absolute beginners.

In general, the findings point to a gap between teachers' theoretical knowledge of CL and their willingness to engage with cognitively informed practices.

Despite practical challenges, teachers' readiness and generally positive attitudes show promising potential for integrating CL principles in the digital ELT context.

6. Conclusion

The main goal of the current study was to establish a connection between CL principles in the online language classroom. Furthermore, the aim was to explore teachers' perspectives on CL principles in the online language classroom. Despite its limited research scope, the essay could still offer preliminary findings for further research. One of the more significant findings to emerge from this study is that CL principles could be favourably applied in the online language classroom. As mentioned in the literature review, CL is a promising approach in language methodology. (Nga, 2023) To my knowledge, this is the first time that CL has been explored in the digital context and the conclusion is drawn from the literature review, the short survey and personal beliefs. Hence, this paper and its findings

can be considered preliminary. My experience suggests that if teachers receive adequate training then the digital context will be richer with a new approach, in this case applied CG, more specifically, applied digital CG. A greater focus on cognitive linguistics, language acquisition, language and image processing, and language education research is therefore needed to suggest an integration of the results of cognitive aspects into a model which will be called 'cognitive language pedagogy'. (Roche as cited in Taylor and Littlemore, 2014, p. 344)Whether this model can be accepted in the dynamic digital pedagogy, remains to be determined by future research.

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TEACHERS' JOB SATISFACTION AS A PREREQUISITE FOR QUALITY TEACHING OF NATIVE AND FOREIGN LANGUAGES

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Abstract

Nowadays, everyone seems to have entered a state of apathy, because dissatisfaction is felt everywhere. Someone is constantly complaining about something or someone and they can be rarely seen smiling and cheerful. According to statistics at the global level, one in five people is dissatisfied with their job or dissatisfied at work. It is an undeniable fact that most of the day, or rather most of the life, of every employee spends at work and we should be aware that the dissatisfaction felt at work is also transmitted home, to the circle of loved ones, friends, etc. On the other hand, from another aspect, native and foreign language teachers must invest their maximum effort in order to succeed in creating generations that will be of high quality and capable and will cope with all the challenges that the future will bring. One of the conditions is job satisfaction, that is, the satisfaction that native and foreign language teachers feel at the workplace.

Keywords: language learning, dissatisfaction, job satisfaction, native and foreign language teachers

INTRODUCTION

Employment is a concept that has a dual value in our society. On the one hand, it is an economic tool that provides the economy with a capable and sustainable workforce, and on the other hand, it serves as an instrument for inclusion and integration that breaks isolation and fulfills people's needs for their participation, as well as for them to have their own meaning. In every educational institution that sees itself as successful and productive in its vision for the future, it is necessary to pay great attention to human resource management. Employees are the ones who, with their knowledge, skills and abilities, constitute "the invaluable wealth that the organization possesses" (Bahrami-Habibzadeh, 2017), all the more so when they have a built and strengthened organizational culture. If they are satisfied with their work and motivated, they will invest in learning more, enabling quality teaching regardless of the subject in question, and in our case, language teaching. The quality of working life directly increases job satisfaction and offers more opportunities for learning at work and allows employees to cope with organizational changes more easily. Nowadays, more than ever, there is a great difference in the level of quality of working life (in our country as well as worldwide). The essential differences can mainly be found in: employment contracts, job security, work autonomy, in terms of material and non-material compensation, in the duration of work, as well as in the possibility of career development of the employees themselves. In this paper, we want to show the impact of teachers' job satisfaction on quality language teaching. The subjects of the educational process are the ones who can feel the mood of their teachers the most, because they mostly want to be respected and valued.

Quality of working life

The quality of working life is defined in many ways, and basically this term implies a result/state that depends on several factors, namely: the workplace and its flexibility, job satisfaction, abilities, skills, lifelong learning and career development opportunities for employees, equality in the

workplace, health, safety and security at work, material/non-material benefits, work-life balance. In business manuals, the quality of working life is defined as "the degree of personal satisfaction with work, which depends on the extent to which the employee feels valued and significant, motivated and empowered in the workplace, and also pays great attention to job security, career development opportunities, work tasks and work-life balance".

Nadler and Lawler define the term as "a way of thinking about people, work, and organizations, where the main elements are: concern for the impact of work on people and organizational effectiveness and the idea of participation in solving organizational problems and making decisions."

Hackman and Oldhams place special importance on defining the quality of work life and they argue that it depends directly on the nature of the work/work tasks because it highlights the connection between the work environment and the personal needs of the employee. They indicate that a work environment that is able to fulfill and satisfy the needs of employees is able to provide positive interaction, which will lead to an excellent quality of work life. Their view is that the personal needs of employees are satisfied when the rewards from the organization, promotion, recognition and development meet their expectations.

Job dissatisfaction

In the workplace, we need to direct our energy and express our creativity. If we feel dissatisfied with our work, it can have harmful consequences on our health, causing us to be absent from work due to illness or our work will not fulfill the assigned tasks, that is, we will not be productive. It is for these reasons that managers of every organization strive to reduce or eliminate job dissatisfaction among their employees. To succeed in this, the factors or sources that lead to it must be identified, all' in order to take the necessary steps in a timely manner. Consequences arise not only when employees are satisfied with their work but also vice versa, when they do not feel any satisfaction from their work.

Dissatisfaction is a feeling that originates within the individual, and for this reason, many who have studied these results have focused on individual differences. Individuals who are highly susceptible to dissatisfaction show higher levels of hostile moods such as anger, contempt, disgust, guilt, fear, and nervousness in both work and non-work contexts. Individuals who are highly prone to dissatisfaction tend to focus only on negative aspects of themselves and others around them. Such individuals have significantly higher levels of anxiety in a given situation than others, indicating that some people bring dissatisfaction to their work. Numerous studies show that choosing to be unhappy in adolescence predicts overall dissatisfaction in adulthood. Compared to those with a positive outlook on life, people who are prone to dissatisfaction have little hope that finding a new job will lead to better results. Recruitment and selection should assess the extent to which each candidate has a history of chronic dissatisfaction with their employment through interviews. For example, if a candidate states that they are dissatisfied with their previous five jobs, the employer will certainly not be able to find a reason or even think that this particular job will be different from the others. This also confirms the fact that dissatisfaction with other aspects of life is reflected in the workplace. This means that workers who, for example, have problems in their family can transfer this tendency to dissatisfaction with their job or with the entire organization.

Job satisfaction

Job satisfaction is a term that describes whether employees are satisfied, happy, and have their needs and desires met at work. Satisfied employees are more motivated and have a positive attitude towards their job. Job satisfaction is a complex approach that includes certain assumptions and beliefs about work as the cognitive component, feelings about work as the affective component, and the assessment of satisfaction itself as a component. Satisfaction is more than an attitude, it is an internal state that is associated with the employee's achievements at work. Some employees will be satisfied with some aspects of their job, while others will not be with those same aspects, and therefore it is very difficult to objectively measure job satisfaction.

The level of job satisfaction is influenced by several variables, including: personal, social, organizational, cultural and external factors. Personal factors include the person himself, education, intelligence, marital status and work orientation. Social factors include relationships with co-workers, group work, the opportunity for interaction. Cultural factors include the basic attitudes, beliefs and values held by employees. Organizational factors include; organizational structure, relationship with employees, nature of work, technology, working conditions, leadership style of management. External factors include environmental factors such as: economic factors, social and the impact of technological development (Cohen, Chaput & Cashon, 2002).

Job satisfaction can also be described as "a pleasant feeling that arises from the perception that a job fulfills or enables the fulfillment of an individual's important business values." This definition includes the following three important aspects of job satisfaction: preference, importance of value, and perception. Value is defined as "consciously or unconsciously what the individual wants to achieve." Different employees have different values that they consider important, which is crucial in determining the nature and level of their job satisfaction. For example, one person may value salary above all else, while another person may value the opportunity to travel abroad as part of their job. The third aspect, perception, is the situation at a given moment in time in relation to the value that they value. However, it is not necessarily an accurate reflection of the present because different people may view the same situation differently.

Job satisfaction is closely related to the ability to meet employees' needs and can relate to the following factors: coworkers, job content, salary, working conditions, working hours, education, recognition, status, success, responsibility, security, and ability to develop. Research and numerous surveys have shown that satisfaction factors can best be grouped into two categories: organizational and personal job satisfaction factors.

We can look at all of the above in two ways. One way is to focus on the employees themselves - the teachers - and how they feel in their jobs, and the other way is to put ourselves in the role of a direct observer or a directly affected parent who entrusts their child to the teachers and expects the greatest benefits for their child from them.

But, under no circumstances should we forget that a teacher is just a human being who has his own needs, desires, and problems outside of work hours.

RESEARCH METHODOLOGY

The subject of this research is the influence of job satisfaction on the performance of employees in educational institutions, which is directly related to their work and private lives. Performance is directly related to productivity, and productivity is related to the performance of employees. The management of each institution has an important role in which it strives to satisfy the desires and needs of its employees so that their investment in the performance of everyday tasks and obligations would be of great importance for the purposes of teaching. Hence, finding measures and activities that will influence the increase in job satisfaction among teachers.

The aim of the research is to show that every teacher needs to feel a high level of job satisfaction in order to be able to provide a high level of quality in their teaching.

Based on the subject of research, the methodology used during the research is determined, and the methods will be combined depending on the content, i.e. the element being researched.

The research is developmental in nature, with the aim of determining whether native and foreign language teachers from our city and the wider region have a high level of job satisfaction.

According to the content, this research is social, as it treats a phenomenon that is occurring at the same time in the Southwestern region of the Republic of North Macedonia.

According to the time duration of monitoring the research phenomenon, this research is transferable, as it will be realized in a short period of time, in different places, under different conditions.

Primary and secondary sources are used to prepare the paper. Secondary sources refer to professional literature, scientific papers in the field of human resource management, language learning curricula, in theory and practice.

The general scientific methods used in data processing are:

Analytical-synthetic method - analysis of certain phenomena, breaking them down to their basic parts, grouping them according to common characteristics and, based on that, drawing and presenting new specific conclusions.

Inductive-deductive method - establishing general conclusions through individual specific views and observations, and vice versa, arriving at new specific conclusions through general views.

Descriptive method - as a procedure for describing or presenting the subject of scientific research with scientific interpretation and explanation is one of the goals of science (along with prediction and explanation). The descriptive method, as the name suggests, describes objects and phenomena. Descriptive methods can be observational methods, surveys and case studies. Descriptive research can be explained as a description of the state of things at the moment when the researcher observes them without changing any of the variables. In doing so, various aspects of a phenomenon or object, their characteristics and/or behavior are described. Extensive scientific and professional literature and specific research by prominent experts from the country and abroad were used in the description.

Statistical method - the collected data were statistically processed, interpreted and then analyzed, based on which appropriate conclusions will be drawn about the researched phenomenon. The statistical method and its application will enable sorting and organizing the previously collected data according to various criteria, all of which will be supported by statistical tables and graphical displays in order to more easily and clearly determine the relations of conditionality of this phenomenon.

For the purposes of this paper, analysis was used as a procedure, which, with the help of a survey questionnaire, allowed for the collection of data for the research of native and foreign language teachers in the Southwestern region of the Republic of North Macedonia.

The obtained data were analyzed both qualitatively and quantitatively.

- Methods of scientific knowledge

The interpretation of the obtained data is based on several methods of scientific inference, namely:

a. basic procedure of scientific inference

- analysis;

b. auxiliary procedure of scientific inference:

- comparative analysis.

Staffing plan:

Teachers who teach a language were randomly selected and surveyed.

Timeline:

The research was conducted from September 2025 to December 2025 according to the following schedule:

1. Technical preparation of the survey questionnaires;
2. The survey questionnaires were delivered to and answered by randomly selected respondents.
3. Collection and classification of survey questionnaires.

The results of the research will be beneficial for parents, teachers who teach native and foreign languages, but also for the entire social community.

RESEARCH RESULTS

The research included 100 randomly selected respondents, teachers of native and foreign languages. They were sent questionnaires electronically, consisting of three parts: demographic data, suggested answers and evaluation. The completed questionnaires were sent again by e-mail. After they were processed, conclusions were drawn.

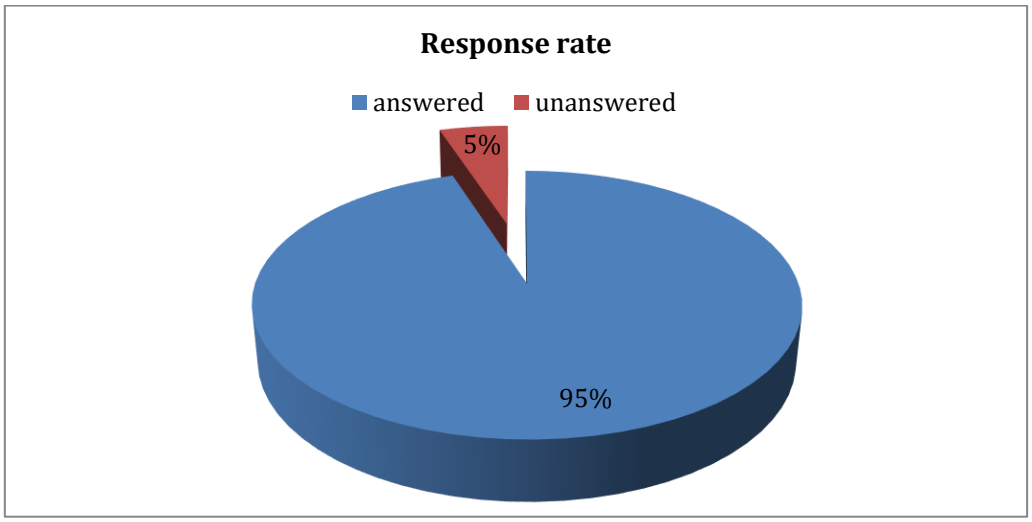


Chart No. 1. Structure of respondents according to the response rate to the survey questionnaire

From the survey questionnaires sent to the respondents, native and foreign language teachers, we received a response rate of 95%, which in our opinion is a satisfactory percentage.

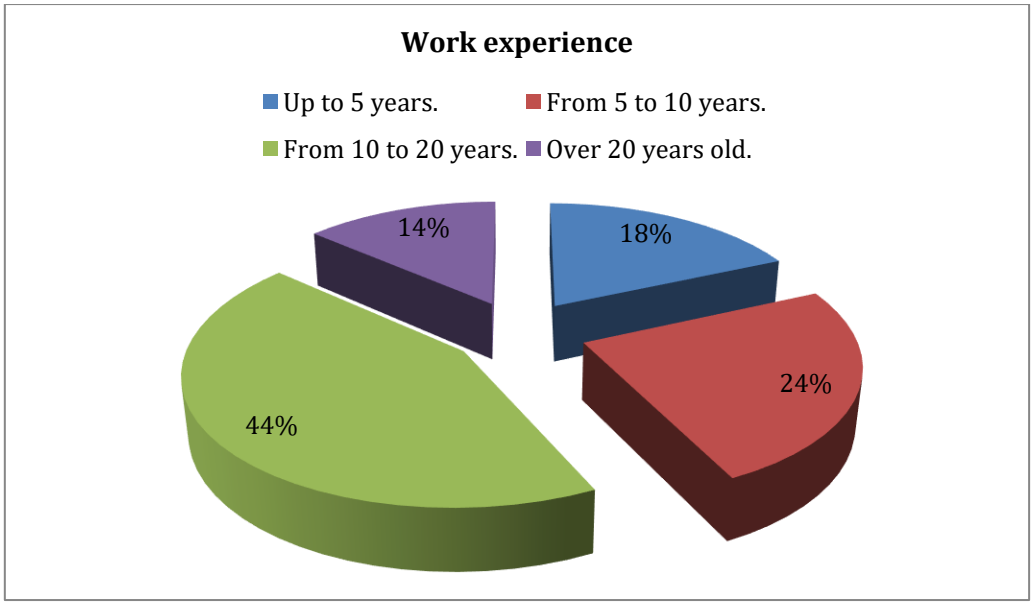


Chart No. 2. Structure of respondents according to work experience

Chart number 2 graphically presents the percentage of years of work experience of the respondents. With work experience up to 5 years, 18% of the total number, with 5 to 10 years of experience, are 24%, with 10 to 20 years of work experience are the largest number, namely 44%, and the smallest percentage, 14%, are employees who have worked for over 20 years.

It can be concluded that employees account for the largest percentage of respondents with work experience of 10 to 20 years, which also includes some employees with over 20 years of work experience.

Chart No. 3, which is presented on the next page, contains the results of the survey question, i.e. the survey statement - I know the work I do well and I do it without difficulty, the respondents were required to rate it with a score from 1 to 5. 2% said it was sufficient, 4% said it was good, 32% said it was very good, and the largest number of respondents, as much as 62%, said that they know their job very well and do it without difficulty.

It can be concluded that native and foreign language teachers have received the necessary training and know their job.

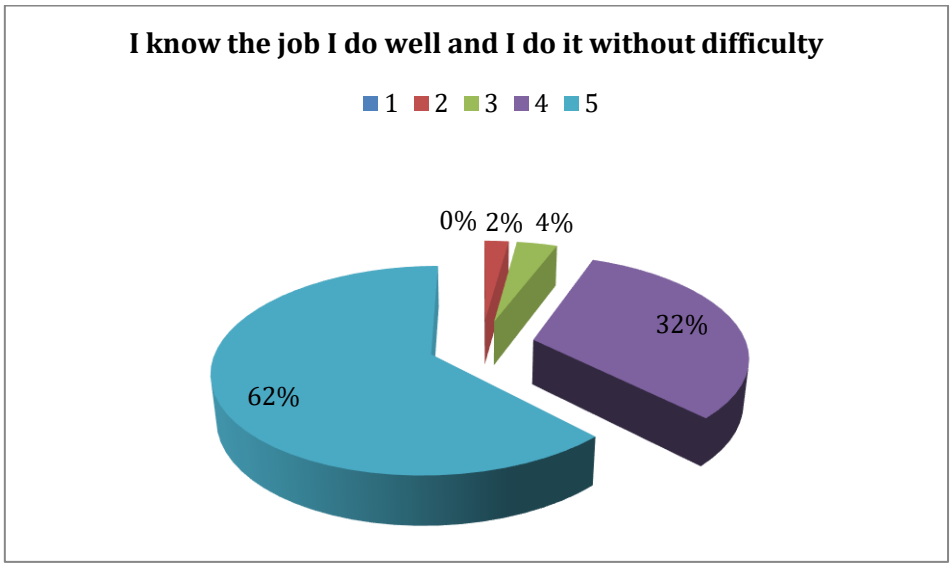


Chart No. 3. I know the work I do well and I do it without difficulty.

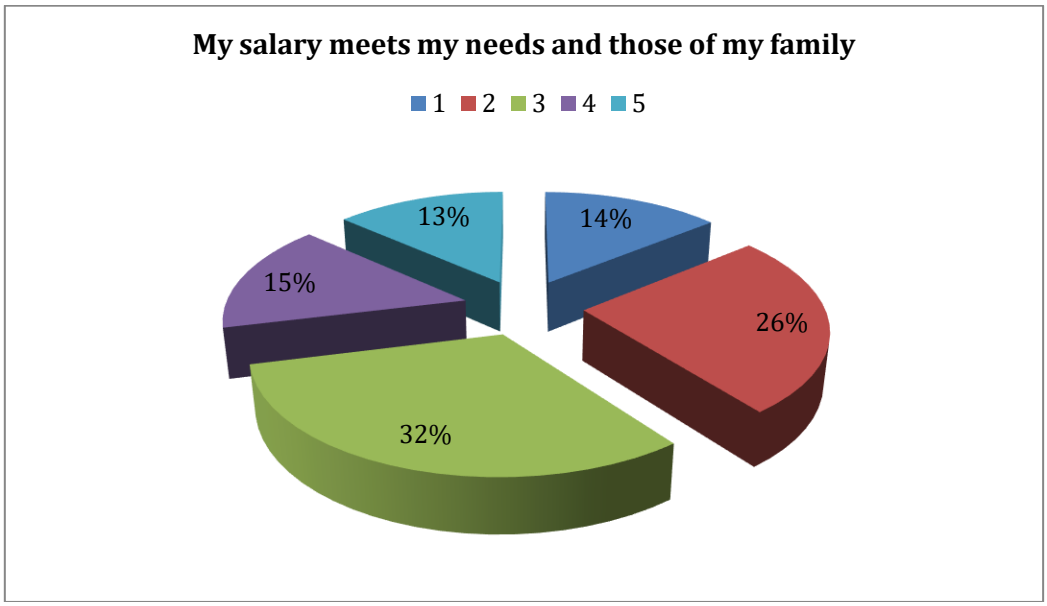


Chart No. 4. My salary meets my needs and those of my family

The survey conclusion - how much the respondents' salary satisfies their and their families' needs, is graphically presented in graph number 4. The following can be noted: of the total number of respondents who were included in the survey, 14% declared themselves with an unsatisfactory rating,

26% declared themselves with a sufficient rating, the majority of them declared themselves with a good rating, namely 32%, 15% declared themselves with a very good rating, while 13% of the total number of respondents declared that their salary is sufficient to satisfy their and their families' needs.

It can be concluded that some of the respondents need to work additional jobs to earn additional income.

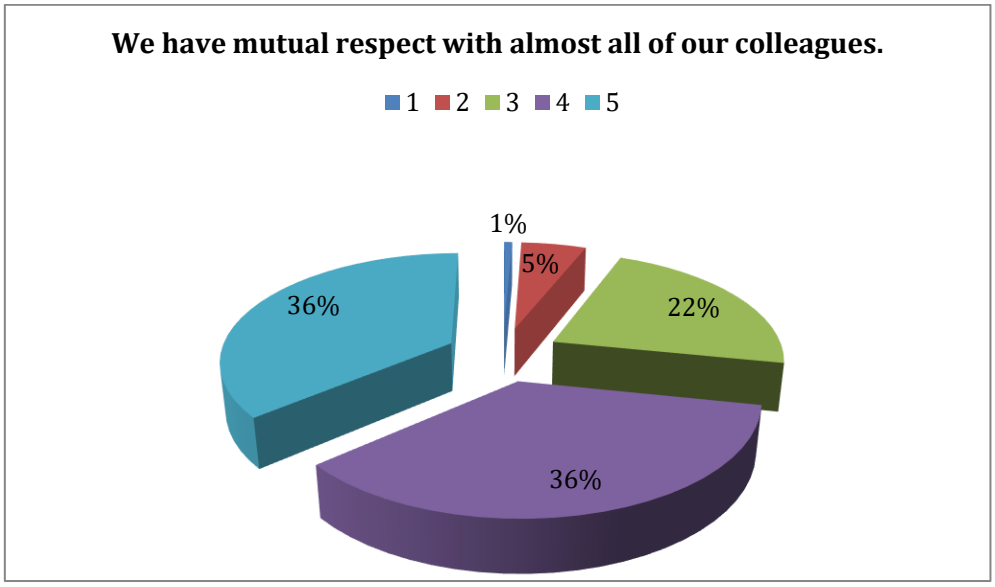


Chart No. 5. We have mutual respect with almost all our colleagues

Graph number 5 graphically presents the percentage of respondents' responses to the survey statement on how much they have developed mutual respect with their colleagues. It can be noted that most of them declared themselves with the highest grade of very good and excellent, 36% each, and only 5% declared themselves unsatisfactory, i.e. 1% declared that they do not have mutual respect for their colleagues.

It can be concluded that teachers are aware of how important respect for their colleagues is in making their work easier.

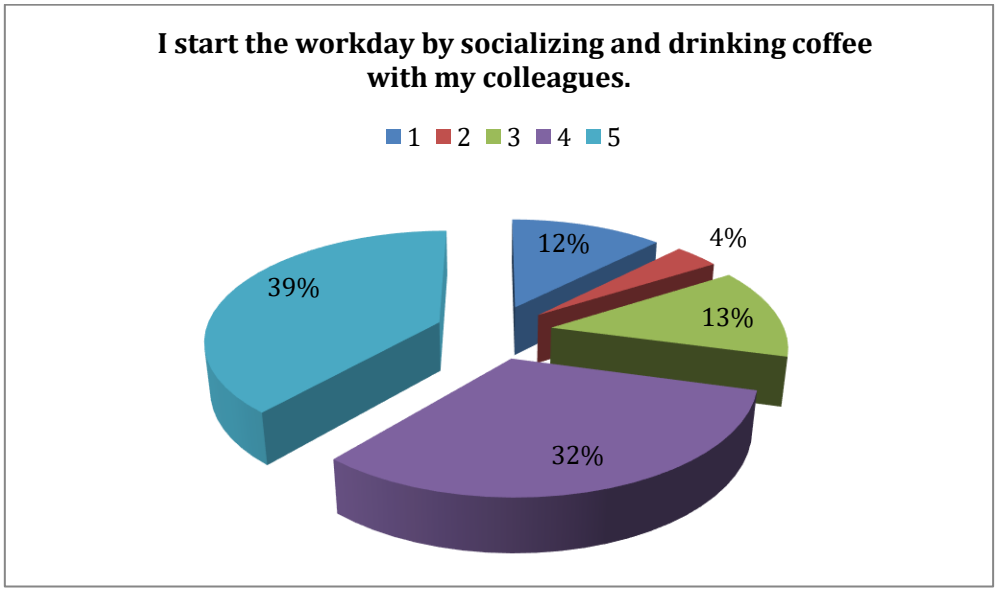


Chart No. 6. I start the workday by socializing and drinking coffee with my colleagues.

Chart number 6, which is presented above, graphically presents the results of the respondents on the survey question of how they start the day, whether by drinking coffee

together and socializing with their colleagues. With a score of 5, 39% of the respondents said they start the day by socializing with colleagues, or with a score of 4 – 32% or almost every day, 13% said with a score of 3 that they do it occasionally, and only 12% said that they do not socialize with colleagues over morning coffee.

We can conclude that this ritual is not just a waste of time but also a strengthening of interpersonal relationships and building of social culture.

The next survey finding concerns the presentation of changes in operations before they are implemented. Chart number 7, which is presented on the next page, graphically presents the results of the respondents, as follows: 21% with a score of 5 said that this was done, 29% with a score of 4 almost always, 31% said that it was partially done or a score of 3, 13% said that it was done with a score of 2 and 6% with a score of 1.

It can be concluded that managers take care to prepare their employees in a timely and clear manner for the changes that need to happen. And this has an impact on teachers who, if they feel prepared, will not feel fear and anxiety or show dissatisfaction with their work.

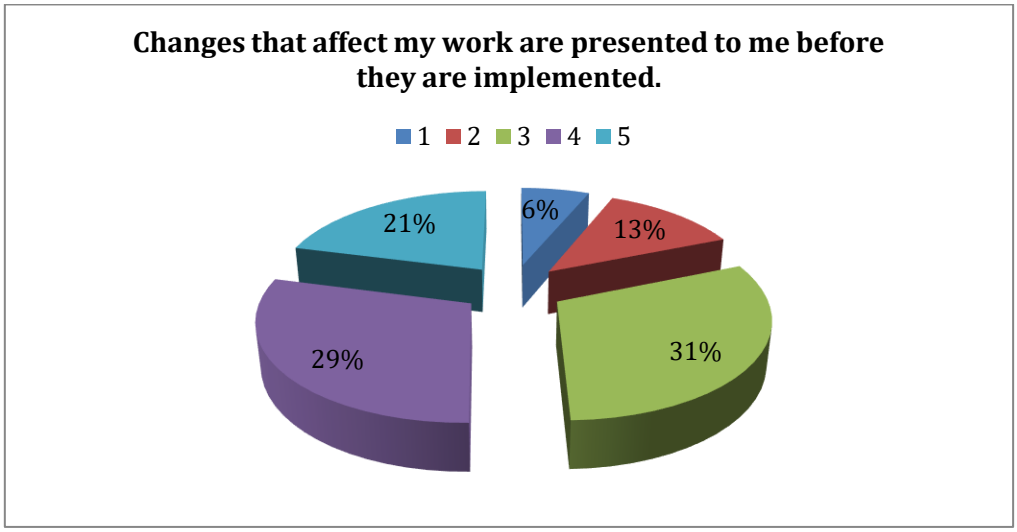


Chart No. 7. Changes related to my work are presented to me before they are implemented

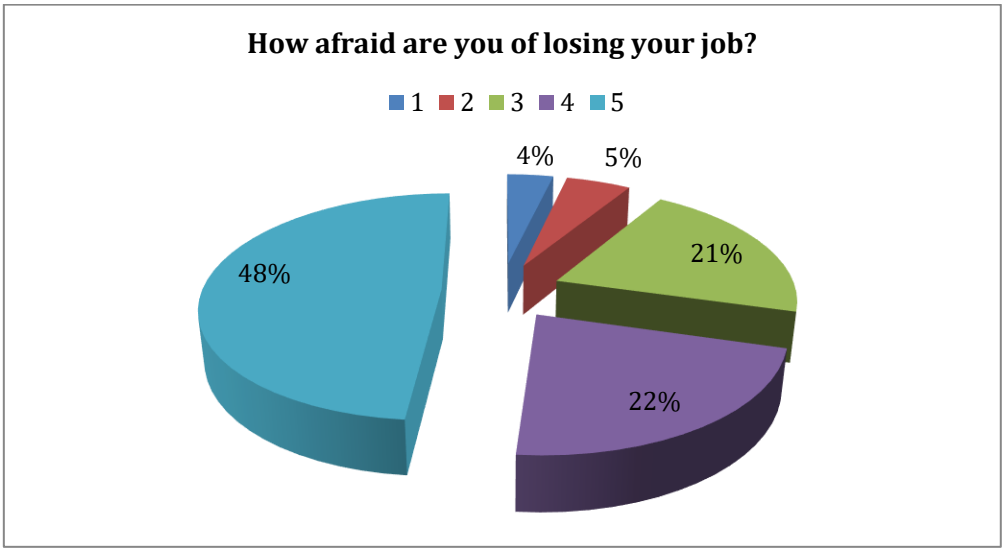


Chart No. 8. How afraid are you of losing your job?

One of the questions asked in the survey questionnaire for this research required respondents to state how secure they feel in their workplace, that is, how afraid they are of

losing their job. Graph number 8, which is presented on the previous page, graphically presents the results, as follows: most are not afraid of losing their job 48%, 22% stated that they have a small dose of fear, 21% stated that they have an equal chance of losing their job, while the remaining 9% stated that they expect to be fired at any moment. It can be concluded that the majority of respondents feel secure in their workplace, and such a feeling will directly affect their job satisfaction.

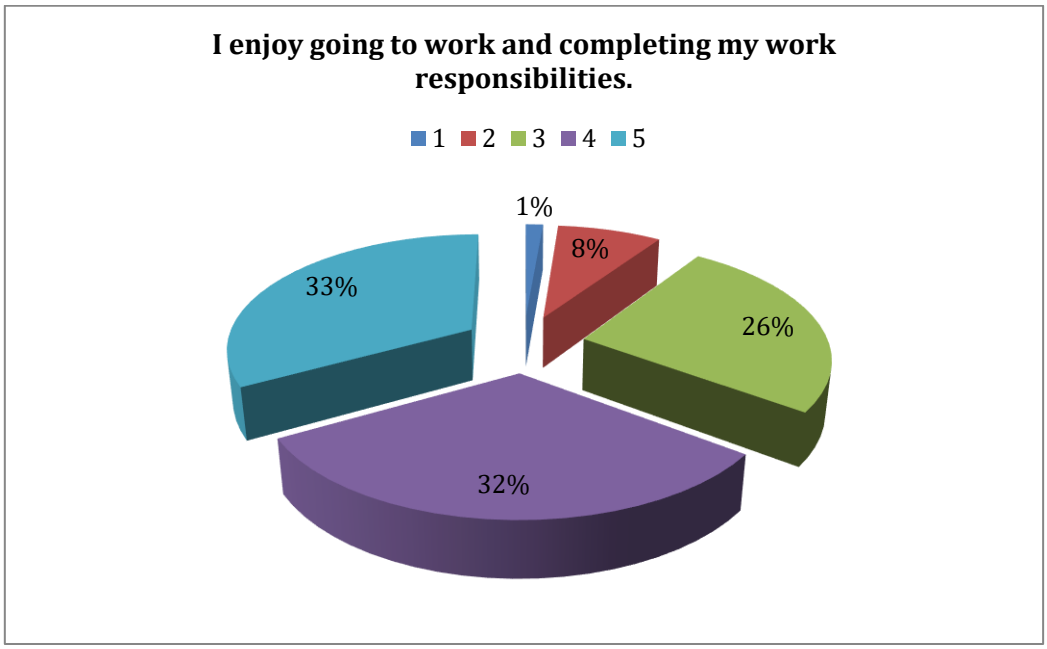


Chart No. 9. I am happy to go to work and complete my work responsibilities.

One of the survey questions included in the survey questionnaire was directly related to how satisfied they are with going to work and completing their work tasks. The results we obtained are graphically presented in chart number 9. As can be seen from their statements, 1% feel dissatisfied when going to work, 8% go with little satisfaction or with a grade of 2, 26% are half satisfied or with a grade of 3, 32% with a grade of 4, while 33% of the total number of respondents go with the highest grade of 5.

It can be concluded that the majority of the respondents - teachers - are happy to go to work and perform their work tasks.

CONCLUSION

It is in human's nature to enjoy one's work and to find in it a chance to develop one's creative abilities. That is why there should be an integration of the goals of individuals and the goals of the organization.

An organization is made up of people and its activities cannot take place without them. The structure, development, efficiency, and functionality of an organization are directly related to the abilities, motives, attitudes, values, and interpersonal relationships among employees.

As the results of the survey conducted among the respondents showed, the result of a quality work life is job satisfaction. Employees need security and protection in the workplace without coercion and clearly defined rules and procedures, i.e. managers who can offer incentives that provide a sense of respect and belonging and the opportunity for development. The results of the survey showed that knowledge of the job makes a great contribution to its

efficient implementation. Timely information from superiors to employees about what is expected of them is also a prerequisite for productive work. Developed friendly relations with superiors and colleagues makes work easier. Salary and salary benefits such as paid overtime, benefits such as paid annual leave and sick leave are strong motivators for employees.

This paper has shown the impact of job satisfaction on employee performance, the more satisfied they are with their work, the more productive they will be in their work. Each of us wants to have a fair working day where, in a pleasant atmosphere with superiors and colleagues, they will complete the assigned tasks, and go home satisfied with their work. This is not always possible, because in everyday work we are sometimes put in situations in which, although we put in our maximum, the end result or the solution to the problem is not in accordance with what our superiors expect. However, if we believe in ourselves, have trust in our colleagues and open dialogue with our superiors, we can more easily deal with all problems at work, and as a final result we will improve the quality of our working life.

To increase the quality of work life, as a recommendation to managers, they should raise the level of the need for self-actualization of employees by giving a certain degree of independence, greater responsibility and autonomy, creative and challenging tasks as well as praise and rewards for good behavior. It can be said that there is no employee who would not want to work in an organization where there is a healthy work environment and where he feels healthy, safe and successful. High quality of job satisfaction is the only way to have healthy, motivated, satisfied and happy employees.

As direct recommendations to employees who are dissatisfied with their work life, we would list the following:

- Change job – change your current job or position to something else. Instead of constantly complaining about your job, submit a request to your supervisor as soon as possible.

- Friendship with colleagues – only befriend positive people, don't befriend negative people. Negative people will only make your already difficult situation even more difficult.

- Self-awareness – you need to be aware of the situation you are in. If you have the opportunity to change jobs, then change them immediately, otherwise, invest more than before.

- Change supervisor – if you think you can do it, and your current supervisor is the obstacle, then ask to be put on another project. Think in advance about how you will do it without criticizing anyone.

- Help your colleagues – without neglecting your own task, help your colleagues. This will make your day full, your colleagues will appreciate you, but most importantly, you will feel better.

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COMPOUNDING IN INTERNET SLANG: WORD FORMATION IN DIGITAL ENGLISH

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Abstract

This paper examines compounding as a word-formation process in contemporary internet slang, drawing on a self-compiled corpus of English-language posts collected from TikTok and X (formerly Twitter) in 2025–2026. Grounded in the morphological frameworks of Katamba (1993), Bauer (2001), and McCulloch (2019), the study analyses a range of single-word and multi-word compounds — including doomscroll, girlboss, face card, and beige flag — according to their morphosyntactic structure and semantic type. The findings confirm that noun-noun compounding is the most productive structural pattern in the data, and that the majority of attested forms are exocentric, with meanings that depend on cultural context, metaphor, and irony rather than compositional logic alone.

Keywords: Internet linguistics, digital English, Slang, digital discourse, word formation processes

1. Introduction

Language has always been a living thing, but the internet has put it on fast-forward. In the space of a few decades, digital communication has given rise to a recognisable variety of English with its own grammar, aesthetics, and lexicon – a lexicon that is updated in near real-time by millions of anonymous contributors across platforms, memes, comment sections, and viral threads. Within this variety, new words are coined at a pace that no dictionary can comfortably keep up with, and they spread, mutate, and sometimes die just as quickly. Understanding how these words are formed is not merely a curiosity for linguists but a window into the cognitive and social dynamics of contemporary digital culture.

Recognizing this, the present study examines one of the most fundamental and productive of all English word-formation processes: compounding, and its role within internet slang. Compounding, the joining of two or more free morphemes to form a new lexical item, has been a cornerstone of the English lexicon since its earliest recorded history (Katamba, 1993). What this paper argues is that compounding has found a particularly fertile new environment in the informal, fast-moving, and often irony-saturated register of digital English. And it is worth studying.

2. Literature review

The study of word formation has long been a central concern in linguistic morphology, and compounding stands out as one of the most ancient and productive processes through which English speakers have expanded their lexicon. This section provides the theoretical grounding for the present analysis, drawing primarily on Katamba's (1993) foundational treatment of morphology, complemented by Bauer's (2001) work on morphological productivity and McCulloch's (2019) examination of digital language.

2.1. Compounding: Basic notions

Compounding is the process by which two or more free morphemes i.e. words that can stand independently, are joined to form a new lexical item with a unified meaning. Katamba (1993) defines a compound as a word that consists of two or more bases, each of which could function as an independent word in the language. What distinguishes compounding from other word-formation processes such as derivation is that both constituent elements carry full lexical meaning, and their combination yields a new concept that is, to varying degrees, semantically greater than the sum of its parts. One example of this is *schoolboy*, which combines two fully independent nouns: school and boy (Katamba, 1993, p. 305) into a single lexical unit denoting a specific kind of boy.

One of the defining features of English compounds is their orthographic instability. Unlike many other languages where compounds have a fixed written form, English permits the same compound

to appear as a single word (also called "closed" word such as *schoolboy*), a hyphenated form (president-elect), or two separate words (also called "open word" as in ice cream), often depending on register, platform, or individual stylistic preference. Katamba (1993) acknowledges this variability and notes that orthography alone cannot serve as the primary criterion for identifying a compound; the decisive test is whether the two elements form a single phonological and semantic unit. In digital contexts, as will be shown in the analysis below, this orthographic fluidity is particularly pronounced.

2.2. Types of Compounds in English

Katamba (1993) classifies English compounds primarily according to two criteria: their morphosyntactic structure, that is, the word classes of their constituent elements, and their semantic relationship to those elements, particularly the question of headedness.

In terms of structure, compounds can be formed from virtually any combination of word classes. The most productive pattern in English is the noun + noun compound, as in schoolboy, policewoman, and post office (Katamba, 1993), but adjective + noun (greenhouse, blackbird), verb + noun (pickpocket, bedroom), and noun + adjective combinations are all well attested. The internal syntactic relationship between the two elements is not overtly marked and must be inferred from context and convention. This is a feature that gives compounding considerable semantic flexibility and, as will be seen, makes it particularly well suited to the free, context-dependent register of internet slang.

Compounds are traditionally distinguished from phrases by their "fixedness". As Plag (2018) notes, it is impossible to insert additional words between the two elements of a compound: while *post office* is a well-formed compound, *post an office* is entirely unacceptable. In this respect, compounds behave similarly to idioms, and Dressler (2007) has termed this property idiom-likeness i.e. the resistance to internal modification that marks a compound as a single, indivisible lexical unit rather than a freely constructed syntactic phrase.

2.2. Types of compounds in English

From a semantic standpoint, Katamba (1993) follows the established distinction between endocentric and exocentric compounds. An endocentric compound, according to him, is one in which the whole is a hyponym of its head: a schoolboy is a kind of boy, a greenhouse is a kind of house, and a policewoman is a kind of woman. Plag (2018: 135) holds that the vast majority of compounds in English can be interpreted such that the left-hand member modifies the right-hand member in some way. In the compound black tea, for instance, black functions as a modifier and tea as the head, such that the compound denotes a specific type of tea rather than a tea that is black in the literal sense. This modifier-head relationship corresponds directly to what Katamba (1993) identifies as the right-hand head rule, whereby the rightmost element of a compound determines both its grammatical category and its semantic class. The meaning of the endocentric compound is largely, if not fully, predictable from its parts.

By contrast, an exocentric compound has no internal semantic head. Katamba's examples are instructive here: a *scarecrow* is not a kind of crow, a *redhead* is not a kind of head but a person with red hair, and a *butterfinger* is not a kind of finger but a clumsy person. The meaning extends beyond either constituent element, frequently relying on metaphor or cultural knowledge. A third, less frequently discussed type is the copulative (or dvandva) compound, in which both elements function as co-equal semantic heads, as in *singer-songwriter,* denoting an entity that is simultaneously both things. Katamba (1993) also lists reduplicative compounds (as in *knock-knock*) and appositional compounds in which each constituent element refers to the same referent rather than one modifying the other.

2.3. Productivity in Word Formation

The concept of productivity is central to understanding why certain word-formation processes are used more than others in specific registers or communities. Bauer (2001, p. 18) defines a word-formation process as productive "if it can be used synchronically in the production of new forms". Crucially, productivity is not a binary property but a gradable one: some processes are highly productive, generating new words freely and frequently, while others are restricted or semi-productive, applying only to limited sets of bases or in constrained contexts. Bauer (2001) further draws an important distinction between productivity and creativity. To him, productivity refers to the largely unconscious, rule-governed generation of new words following established patterns, whereas creativity

refers to the more deliberate and playful coining of forms that may deviate from or extend existing rules. Both are operative in natural language, and both are highly relevant to internet slang.

Katamba (1993) similarly addresses productivity, noting that a morphological rule is productive when it can be freely applied to a large number of bases to produce new words. He observes that productivity is constrained by phonological, morphological, and semantic factors. According to him, the endocentric noun + noun pattern, for instance, as in *schoolboy*, and *teapot*, is among the most productive in English precisely because it imposes minimal phonological or categorial restrictions on its bases.

2.4. The Internet Slang (or Dialect) of Now

The language of the internet is not simply standard, or even, informal English transposed onto a digital medium. On the contrary – it is a distinct register or variety with its own norms, aesthetics, and word-formation tendencies. McCulloch (2019) argues that social media and digital platforms constitute a vast, unedited laboratory of informal writing in which language changes faster and in more inventive ways than in any previously documented context. Crucially, she observes, even the most seemingly absurd or irregular-looking slang found online, follows genuine underlying patterns, which is something that lies in the core of this paper, too.

McCulloch (2019) introduces the concept of internet people, a typology that classifies users according to when and how they came to digital communication, arguing that these different cohorts developed distinct linguistic norms and sensibilities. The youngest cohort i.e. those who grew up with smartphones and social media as a given, are the primary producers and consumers of the slang examined in this study. It is within these communities that compounding proves especially productive.

Generally, compounding plays an important role in English word-formation, and is one of the most frequently used methods to create new words in English. Due to its importance, compounding has been widely and extensively explored from the phonological (Plag, 2018), morphological (Masini, 2009; Scalise and Vogel, 2010), syntactic (Peter and Neeleman, 2010), cognitive (Jarema, 2020; Fehringer, 2012) and computational (Pirrelli et al., 2010) perspective.

The study of internet language and slang has similarly attracted growing scholarly interest. Lihawa et al. (2021) conducted a corpus-based qualitative investigation of Generation Z slang, drawing on Callahan's Generation Z Dictionary as their data source. Their analysis identified eight distinct word formation processes operating within this variety, including fanciful formation, blending, clipping, conversion, suffixation, and reduplication, with compounding being the most prominent. This finding lends direct support to the premise of the present study, namely that compounding is not merely one among many equally active processes in informal Gen Z internet discourse, but rather its primary engine of lexical expansion. The language of internet memes, as a related form of online discourse, was similarly examined by Kostadinovska-Stojchevska and Shalevska (2018), who approached digital language as a coherent and rule-governed communicative system rather than a deviation from standard norms. More recently, Shalevska (2024) has further demonstrated that internet slang is not the exclusive domain of native English speakers, finding that EFL speakers readily adopt and deploy Generation Z slang in their own digital communication. The present study builds on this body of work.

3. Methods

This study adopts a qualitative research approach (Schreier, 2012) in order to examine the structural and semantic properties of compounds found in contemporary internet slang. Rather than seeking to quantify the frequency of particular forms across a large dataset, the qualitative orientation of this study prioritises depth of analysis over breadth, allowing for close morphological and semantic scrutiny of individual examples and the patterns they instantiate. This approach is well suited to the exploratory and descriptive aims of the paper. The data for this study were drawn from a self-compiled corpus of English-language posts collected from two major social media platforms: TikTok and X (formerly Twitter). These platforms were selected on the grounds that they represent two of the most active and linguistically generative spaces in contemporary digital communication, each with distinct but overlapping user communities and content cultures. All posts included in the corpus were published in 2025 or 2026, ensuring that the data reflect the most current stratum of internet English. The sampling procedure was purposeful in nature, following the principles outlined by Lincoln and Guba (1985). Rather than seeking a random or representative sample of all content produced on these platforms,

examples were selected on the basis of their relevance to the research focus. Once collected, the data were organised through thematic grouping into two main analytical categories: single-word compounds and multi-word compounds. Within each of these categories, examples were further classified according to the morphosyntactic structure of their constituent elements. This classification draws directly on the theoretical framework established in the literature review, particularly Katamba's (1993) typology of English compounds.

4. Results and discussion

Following are the compounds identified in the corpus, organised by structural type into single-word and multi-word compounds, and further classified according to their morphosyntactic composition. Within each subsection, individual items are analysed in terms of their constituent elements, their semantic relationship, and where relevant, the social or cultural context that shapes their meaning. The section concludes with a typological overview classifying the attested compounds as exocentric, endocentric, or copulative.

4.1. Single-word compounds

Single-word compounds represent the more morphologically integrated end of the compounding spectrum. In these forms, two or more free morphemes have been fused into a single orthographic and phonological unit, with the resulting compound functioning as a new lexical item whose meaning is not always predictable from its parts.

4.1.1. Noun-noun compounds

Noun-noun compounds are among the most productive structural types in English morphology, and this productivity extends robustly into internet slang. In a noun-noun compound, the rightmost element typically functions as the head, determining the compound's broad semantic category, while the left-hand modifier specifies or restricts that category in some way (Plag, 2018). As the examples below illustrate, however, internet slang frequently pushes against this compositional logic: even structurally transparent noun-noun compounds often carry connotations, ironies, or cultural resonances that no formal analysis of their parts could fully predict. Some of the noun-noun compounds identified in the corpus include:

- Clickbait (click + bait) – content designed to attract clicks through sensationalism or exaggerated framing, prioritising engagement over informational value.
- Ragebait (rage + bait) – content deliberately crafted to provoke anger or outrage in its audience, often circulated to maximise algorithmic visibility.
- Corecore (core + core) – an aesthetic trend on TikTok that mocks the overuse of the -core suffix by applying it reflexively; the compound is notable for being formed from two identical suffix, making it a rare case of reduplicative compounding in internet slang.
- Girlboss (girl + boss) – originally a term of empowerment denoting an ambitious, self-made woman, increasingly used ironically online to critique performative feminism or hollow hustle culture.
- Babygirl (baby + girl) – a term of endearment applied, often with ironic affection, to a male figure perceived as soft, vulnerable, or emotionally expressive; its online usage inverts conventional gender expectations.
- Looksmaxxing (looks + maxxing) – the practice of optimising one's physical appearance through various means; derived from looks (physical attractiveness) and *maxxing*, itself a neo-combining form meaning to maximise. Though the -maxxing element introduces a verbal dimension, the base compound is noun-noun in structure.

4.1.2. Adjective-noun compounds

Adjective-noun compounds are formed when a modifier denoting a quality or property combines with a noun head. In standard English, this pattern is well attested in forms such as *blackbird* (Katamba, 1993), where the adjective restricts or qualifies the head noun. In the internet slang data, adjective-noun compounds show a notable tendency toward semantic drift: the adjectival element

frequently retains only a vestigial or metaphorical connection to its original meaning, and the compound as a whole acquires pragmatic functions (like hedging, and intensifying) that extend well beyond straightforward description. Such compounds include:

- Deepfake (deep + fake) – AI-generated media in which a real person's likeness, voice, or actions are synthetically replaced or fabricated; the adjective *deep* references deep learning, the underlying technology.
- Highkey (high + key) – used as an intensifying adverb or adjective meaning openly, obviously, or to a great degree; *key* here functions as a metaphorical scalar noun, with high marking intensity.
- Lowkey (low + key) – the semantic counterpart to highkey, indicating something subtle, understated, or not fully acknowledged; frequently used to hedge or soften a claim.
- Deadass (dead + ass) – an emphatic adverb or adjective meaning completely serious or absolutely; *dead* functions as an intensifier and *ass* as a reinforcing expletive noun, a pattern common in vernacular English.

4.1.3. Verb-noun and noun-verb compounds

Verb-noun and noun-verb compounds represent a structurally mixed category in which one element carries verbal force and the other nominal force, though the distribution of these roles varies across individual forms. Some compounds in this group originate as nouns that have been reanalysed and put to verbal use through functional shift; others are formed by combining a verb stem with a nominal element to produce a new lexical item, as in:

- Gatekeep (gate + keep) – to withhold information, access, or membership from others, typically to preserve exclusivity; structurally a verb-noun compound reanalysed as a verb.
- Catfish (cat + fish) – to deceive someone by assuming a false online identity, usually for romantic or manipulative purposes; originally a noun (the animal), reanalysed online as a verb through functional shift.
- Brainrot (brain + rot) – a state of mental dullness attributed to excessive consumption of low-quality or repetitive online content; used both as a noun describing the condition and, attributively, to describe the content itself.
- Doomscroll (doom + scroll) – the compulsive act of continuously consuming negative or distressing news online, particularly on social media; functions as both verb and noun.
- Breadcrumbing (breadcrumb + -ing) – the behaviour of giving someone just enough intermittent attention to maintain their interest without genuine commitment; the base compound *breadcrumb* (noun) is verbalised via the inflectional suffix -ing.

4.2. Multi-word compounds

Multi-word compounds differ from their single-word counterparts in that their constituent elements remain orthographically separate, which can make their status as compounds, rather than ordinary noun phrases or collocations, a matter of some analytical debate. The criterion applied here follows the standard diagnostics outlined in the literature review: semantic non-compositionality, fixed internal structure, and the inability to freely modify constituent elements (Katamba, 1993; Plag, 2018). By these criteria, all items in this section qualify as compounds despite their open spelling, as their meanings are conventionalised and not freely derivable from the combination of their parts.

4.2.1. Noun-noun compounds

As in the single-word data, noun-noun compounds represent the largest subcategory among multi-word forms. The structural pattern remains consistent with the modifier-head template described above, but the semantic range is considerably broader. This is exemplified by:

- Lore post (lore + post) – a post dedicated to extensive backstory, world-building, or contextual history, whether about a public figure, a community, or a fictional universe.
- Slop farm (slop + farm) – an account or platform dedicated to producing mass quantities of low-quality, often AI-generated content purely for engagement or monetisation.
- Sleep debt (sleep + debt) – the cumulative deficit of sleep resulting from consistently insufficient rest; borrowed from health discourse.
- Main character (main + character) – the sense that one is, or is performing as, the protagonist of one's own life; applied both sincerely and ironically to describe self-centred or dramatically heightened behaviour.
- Face card (face + card) – one's physical attractiveness regarded as a form of social capital; the phrase *your face card never declines* is a common accompanying expression, extending the financial metaphor.
- Girl dinner (girl + dinner) – a meal consisting of small, miscellaneous, low-effort items assembled rather than cooked, celebrated as a form of chaotic self-sufficiency; the compound carries a tone of ironic domesticity.
- Girl math (girl + math) – a humorous mode of rationalising purchases or decisions through creative, self-serving logic; like *girl dinner,* the *girl-* modifier signals a register of irony.
- Side eye (side + eye) – a sideways glance expressing scepticism, suspicion, or disapproval; used online both literally and as a reaction or commentary label.
- Aura points (aura + points) – a gamified metaphor for social or personal charisma, in which actions are described as gaining or losing points toward one's overall perceived coolness.

4.2.2. Noun-adjective and adjective-noun compounds

As with the single-word adjective-noun compounds discussed in 4.1.2, the adjectival element typically encodes evaluation or degree, though in the multi-word data this evaluative function is often culturally or contextually loaded:

- Rent-free (rent + free) – describing something that occupies one's mind persistently without invitation; from the phrase *living rent-free in my head*, the compound has been extracted and used attributively.
- Red flag (red + flag) – a warning sign of problematic behaviour in a person or situation, drawn from conventional cautionary symbolism and heavily adopted in relationship discourse online.
- Green flag (green + flag) – the positive counterpart to red flag, denoting a reassuring or desirable trait or behaviour.
- Beige flag (beige + flag) – a more recent addition to the flag series, denoting a quirky, neutral, or mildly odd trait that is neither alarming nor particularly positive; the colour choice signals ambiguity and mediocrity.
- Roman Empire (Roman + Empire) – derived from the viral trend in which people reveal how often they think about the Roman Empire; used online to describe any topic, obsession, or cultural artefact that occupies one's thoughts with unexpected frequency.

4.2.3. Verb-noun and noun-verb compounds

The verb-noun and noun-verb compounds in this subcategory are unified by their basis in social action: each one names a practice, a ritual, or a mode of interpersonal conduct that has been identified, labelled, and circulated within digital communities:

- Vibe check (vibe + check) – an informal assessment of someone's mood, energy, or social compatibility; used both as a noun (to conduct a vibe check) and as a verb phrase (to vibe check someone).
- Pick me (pick + me) – a person, typically a woman, who seeks validation from others, particularly men, by distancing themselves from their own group; functions as a noun, adjective (pick-me behaviour), and occasionally verb.
- Sip tea (sip + tea) – to observe or enjoy drama or gossip without actively participating; the image is of watching events unfold while sipping tea as a neutral bystander.

- Spill tea (spill + tea) – the active counterpart to sip tea: to reveal gossip, secrets, or drama; tea here functions as a slang noun meaning insider information, and spill as the transitive verb.

4.3. Compound Types Analysis

The data reveal that the majority of compounds in the corpus are exocentric, meaning that the compound's referent falls outside the semantic class of its head. Terms such as *catfish, brainrot, breadcrumbing, face card, Roman Empire,* and *spill tea* cannot be interpreted through their constituent parts alone; their meaning is culturally or contextually constructed rather than compositionally derived. This aligns with Dressler's (2007) observation that compounds often exhibit idiom-like fixedness, and it reflects the particular pressures of internet slang, where novelty, and metaphorical creativity may be seen as the main drivers of coinage.

A smaller set of compounds is endocentric, with the head element determining the semantic category of the whole. Examples include *clickbait* (a type of bait), *ragebait* (also a type of bait), lore post (a type of post). This transparency does not, however, guarantee full predictability of meaning: clickbait and ragebait are endocentric in that both denote a type of bait, yet the figurative extension of bait from its literal sense (something used to lure an animal) into the domain of online content production requires a degree of cultural contextualisation that purely compositional analysis cannot supply. Endocentric compounds in internet slang thus occupy a middle ground: their structure is interpretable, but their meaning is fully accessible only to users familiar with the practices and platforms that gave rise to them.

One reduplicative compound is also found in the corpus – *corecore*. Reduplicative compounds, in which both constituents are identical, are structurally unusual in English and relatively rare in the general lexicon. In this case, the repetition is not merely formal but semantic: corecore uses the -core suffix against itself, compounding it with its own base to produce a term that simultaneously belongs to the -core aesthetic naming convention and parodies it. Taken together, the data suggest that internet slang exploits the full structural range of English compounding while consistently pushing its semantic possibilities toward the figurative, the ironic, and the culturally embedded. The productivity of compounding in this register reflects what Bauer (2001) identifies as the capacity of word formation processes to exceed their own formal rules: not merely filling lexical gaps but generating new conceptual categories that reshape how speakers perceive and discuss their social world.

5. Conclusion

This paper set out to examine compounding as a word-formation process in contemporary internet slang, and the data *have delivered*. Across both single-word and multi-word forms, the corpus reveals a variety of English that is structurally consistent, semantically inventive, and – it bears saying – genuinely entertaining to analyse. Several findings deserve particular emphasis. First, noun-noun compounding emerges as the dominant structural pattern in the data, confirming at the level of internet slang what Katamba (1993) and Plag (2018) have documented for the English lexicon more broadly: this pattern's minimal formal constraints make it uniquely hospitable to new coinages. Second, the majority of attested compounds are exocentric — their meanings exceed, subvert, or simply ignore what their constituent parts would logically predict. A *catfish* is not a fish. A *face card* has nothing to do with cards. *Girl math* is not mathematics. The internet, it turns out, is as committed to metaphor as it is to memes. What these findings ultimately suggest is that the language of digital natives deserves to be taken seriously as a subject of linguistic inquiry. Internet slang is not a corruption of English; it is an extension of it – an extension that is doing exactly what English has always done, only faster, stranger, and with considerably more self-awareness.

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OVERDETERMINED MATHEMATICAL PROBLEMS AT MATHEMATICS COMPETITIONS

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Abstract

The best way to develop mathematical culture among students and their active participation in mathematics education is the effective organization and management of the teaching process white solving mathematical problems. Through this, students consciously and permanently acquire mathematical knowledge, skills, and habits. This underscores the importance of problems in mathematics teaching, as well as the teacher's competence in effectively organizing and managing the teaching process during solving mathematical problems. In this paper, we are focused on one of the possible inconsistencies in formulating mathematical problems, which may be a real problem in effective use of mathematical problems for achieving the goals of mathematics education.

Keywords: *mathematics competition, mathematical problem, overdetermined problem.*

INTRODUCTION

A common requirement in mathematics is: *From a given set of mathematical objects* U *to separate a subset* S*, whose elements satisfy the given properties.* We say that this requirement defines a *mathematical problem* or simply a *problem*. More precisely, a mathematical problem is understood as a sequence of thoughts by which, in some way, a subset S of a given set U of mathematical objects is defined, requiring:

- if the set S is finite, find it constructively, or
- prove that S is a subset of an already defined subset of the set U, or
- prove that $S = S'$, where S' is a given set, or
- prove that the elements of S can be obtained by a finite application of the compass-and-ruller rules.

For each of the ways of defining S we say that it is a *representation* of S, and for the problem we say it is *determined* in the set U. The set S is said as the *solution set* of the problem in U.
The concept of a problem is related with the following terms:

- *the text of the problem* is the sequence of words from natural language and mathematical symbols which define the set U, the properties of elements in S and the requirement for representing S,
- *the condition of the problem* (A) is the text by which S is defined descriptively, and U is defined descriptively or constructively,
- *the conclusion of the problem* (B) is the part of the problem that indicates the required representation of S,
- *solving the problem* is the activity whereby from the given definition of S in the text one proceeds toward the required representation of S. The result of this activity is a finite

sequence of ways of defining S, which enables obtaining the required representation of S and each such representation is said to be a *solution of the problem* (R), and

- *the basis of the solution of the problem* (C) is the set of theorems, axioms, definitions, etc., and the solution is obtained by their application.

There are several classifications of mathematical problems, but the subject of our discussion will be the classification of mathematical problems according to the condition of the problem. According to *the condition,* problems are classified as *determined*, *underdetermined, and overdetermined*.

- A problem and informations which the condition (A) contains sufficient and only sufficient data to satisfy the conclusion (B) is called a *determined problem.*
- If from the condition (A) of some determined problem some information is omitted, we say we have an *underdetermined problem.*
- If, on the other hand, in the condition (A) of some determined problem a information is added that was not in (A), then an *overdetermined problem is obtained.* If the new information(condition) follows from the condition (A), then the new problem remains determined; but if the new datum contradicts the condition (A), then the new problem has no solution and we say we have a , the new problem has no solution and we say we have a *contradictory problem.*

SEVERAL OVERDETERMINED PROBLEMS FROM THE KANGAROO WITHOUT BORDERS COMPETITION

Overdetermined problems are very rare at mathematics competitions, but they are not entirely excluded. In the following, we will present three such problems given in the Kangaroo Without Borders international competition, all posed in different years in the Cadet category.

1. (Kangaroo Without Borders 2017). Four cousins Emma, Iva, Renata, and Zora are 3, 8, 12 and 14 years old, not necessarily to correspond. Emma is younger than Renata. The sum of the ages of Zora and Emma is divisible by 5. The sum of the ages of Zora and Renata is also divisible by 5. How old is Iva?

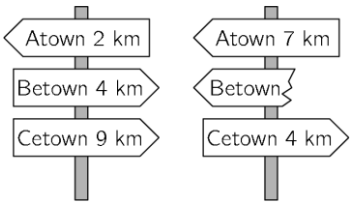
A) 14 B) 12 C) 8 D) 3

E) cannot be determined

Solution. A). Among the numbers 3, 8, 12 and 14 there are only two pairs of girls whose ages sum is a multiple of 5, namely: $3+12=15$ and $8+12=20$. Since one possibility belongs to Zora and Emma, and consecutively to Zora and Renata, we conclude that Emma, Zora, and Renata are 3, 8, and 12 years old. Therefore, Iva is 14 years old.

Comment. As we can see when solving the problem, the condition *Emma is younger than Renata* was not used, meaning it is unnecessary. Therefore, the problem is overdetermined. ■

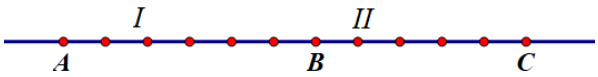
2. (Kangaroo Without Borders 2020). The shortest route from Atown to Cetown passes through Betown. Two signs are placed along the road from Atown to Cetown. What is the distance written on the broken sign?



A) 1 *km* B) 3 *km* C) 4 *km*

D) 5 *km* E) 9 *km*

Solution. A). We represent the positions of the cities and signs on the number line. The distance between any two points is 1 *km*.



From the road signs, we conclude that city town (A) is to the left of signs I and II. If we place city A at the leftmost point, then signs I and II are at 2 and 7 units of distance, respectively. Now city Betown (B) is four units to the right of sign I, meaning the distance between cities Atown and Betown is $2+4=6\ km$. But sign II is 7 *km* from city A town, so city Betown is between sign II and city A town and is at distance $7-6=1\ km$ from sign II. Therefore, the distance written on the broken sign is 1 *km*.
Comment. As we can see, while solving the problem we did not use any information about city Cetown. The problem can also be solved using only the information about cities Betown and Cetown, i.e., without using the information about city Atown. Therefore, the given problem is overdetermined. ■

3. (Kangaroo Without Borders 2015 year). A train consists of a locomotive and wagons. Each wagon has the same number of compartments. Pavel is traveling in the third wagon in the 18th compartment, counting after the locomotive. Matea is traveling in the seventh wagon in the 50th compartment, again counting again after the locomotive. How many compartments does each wagon have?
A) 7 B) 8 C) 9 D) 10 E) 12

Solution. B). Let x be the number of compartments in one wagon. Since Matea is in the seventh wagon in the 50th compartment, we get $50=6x+z$, where z is the ordinal number of the compartment in the seventh wagon where Matea is. Clearly, z is a natural number less than or equal to x. The obtained equation implies $6x<50=6x+z\le 7x$, therefare $\frac{50}{7}\le x<\frac{50}{6}$. But x is a natural number, so $x=8$. Therefore, each wagon has 8 compartments.
Comment. As we can see, while solving the problem we did not use the condition that Pavel is traveling in the third wagon in the 18th compartment counting after the locomotive. This means this condition can be omitted and the problem remains well-defined. ■

By solving the above problems, we established that they are overdetermined and also identified which condition is unnecessary, i.e., which condition should be omitted from the formulation.

OVERDETERMINED PROBLEMS CAN HAVE SIGNIFICANT DIDACTIC VALUE

The previously examined problems can be clearly and appropriately corrected. That would reduce the need for the students to engage in additional analysis that only complicates the problem-solving process and requires more time. It is evident that these examples do not allow for further exploration, and thus they lack significant didactic value.

However, there exist examples of overdetermined problems whose elaboration can be used to improve the quality of mathematical thinking and to enhance students' problem-solving abilities. In the following, we will examine one such problem published in the journal *Mathematical Paper* (XLIV-2), by the Society of Mathematicians of the Republic of Serbia. In the subsequent issue, the provided solution applies all the conditions stated in the problem. We will present it in full, with only minor corrections.

4. The lengths of the legs of a right triangle are positive integers (in centimeters). If the hypotenuse is $20\ cm$, the radius of the inscribed circle is $4\ cm$, and the legs differ by $4\ cm$, find the perimeter of this triangle.

Solution. Let a and b be the lengths of the legs, and c be the hypotenuse of the triangle. From the conditions of the problem it follows that $a = b + 4$.
Furthermore, for the area of the triangle we have

$$P = \frac{ab}{2} = \frac{b(b+4)}{2} \text{ and } P = \frac{a+b+c}{2} r = \frac{(b+4)+b+20}{2} \cdot 4 = 4b + 48,$$

from which we obtain $\frac{b(b+4)}{2} = 4b + 48$, that is $b^2 - 4b = 96$. From the last equation we obtain $b(b-4) = 96$. Since the side lengths are integers and $1 \cdot 96 = 2 \cdot 48 = 3 \cdot 32 = 4 \cdot 24 = 6 \cdot 16 = 8 \cdot 12 = 96$ the unique solution is $b = 12\ cm$. Therefore, $a = b + 4 = 16\ cm$ and $L = a + b + c = 48\ cm$. ■

In the formulation of the above problem the followings are given:

1) the triangle is right-angled,
2) the lengths of the legs are positive integers,
3) the length of the hypotenuse equals $20\ cm$,
4) the lengths of the legs differ by $4\ cm$ and
5) the radius of the inscribed circle is $4\ cm$,

meaning five informations (conditions) are given. Furthermore, in the proposed solution the equation $b^2 - 4b = 96$ is obtained, which is equivalent to $(b-2)^2 - 10^2 = 0$, i.e., to the equation $(b+8)(b-12) = 0$, from which $b = 12\ cm$ follows. Therefore, the condition i.e. 2) — the leg lengths are positive integers — is not necessary. This means that the condition makes the problem overdetermined, something that the problem's author, the journal's editors, the teachers, and the students did not notice. But is this the only information that makes the problem overdetermined? As we know, a triangle is determined when three of its independent elements are known, which means there is one more information, i.e., the problem is overdetermined on multiple grounds. In what follows, we give several reformulations of this problem, each omitting information 2) and one of the other four information.

5. Given a right triangle with hypotenuse $20\ cm$. If the legs differ by $4\ cm$, find the perimeter of this triangle.

Solution. Let a and b be the lengths of the legs, and c be the hypotenuse of the triangle. From the conditions it follows that $a = b + 4$. Now, by the Pythagorean theorem,

$$(b+4)^2 + b^2 = 20^2, \text{ i.e., } 2b^2 + 8b + 16 = 400.$$

The last equation is successively equivalent to

$$b^2 + 4b - 192 = 0,$$
$$(b+2)^2 - 14^2 = 0,$$
$$(b-12)(b+16) = 0.$$

A product of two numbers equals zero if and only if at least one of the factor equals to zero.Therefore, $b - 12 = 0$ or $b + 16 = 0$, that is $b = 12$ or $b = -16$. But siuce $b > 0$, the unique solution is $b = 12\ cm$. Therefore,

$$a = b + 4 = 16\ cm \text{ and } L = a + b + c = 48\ cm. \blacksquare$$

6. The lengths of two sides of triangle ABC differ by $4\ cm$, the length of the third side is $20\ cm$ and the radius of the inscribed circle of triangle ABC is $4\ cm$. Find the perimeter of this triangle.

Solution. Let a and b be the lengths of two sides of the triangle, and $c = 20\ cm$ be the length of its third side. From the given conditions it follows that $a = b + 4$. Furthermore, the semi-perimeter of the triangle is $s = \frac{a+b+c}{2} = \frac{(b+4)+b+20}{2} = b + 12$, so the area of the triangle is $P = sr = 4s = 4(b+12)$. On the other hand, by Heron's formula the area of the triangle is

$$\begin{aligned} P &= \sqrt{s(s-a)(s-b)(s-c)} \\ &= \sqrt{(b+12)(b+12-b-4)(b+12-b)(b+12-20)} \\ &= \sqrt{96(b+12)(b-8)}. \end{aligned}$$

Now, using $b + 12 > 0$, from the last two equalities we successively obtain

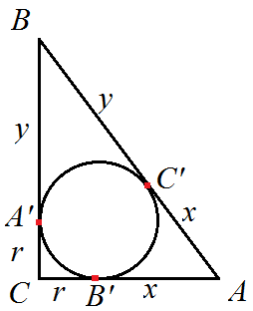
$$\begin{aligned} &4(b+12) = \sqrt{96(b+12)(b-8)}, \\ &16(b+12)^2 = 96(b+12)(b-8), \\ &b+12 = 6(b-8) \\ &5b = 60, \\ &b = 12\ cm. \end{aligned}$$

Therefore, $a = b + 4 = 16\ cm$ and $L = a + b + c = 48\ cm$. ■

7. Let ABC be a right triangle with hypotenuse $20\ cm$. If the radius of the inscribed circle is $4\ cm$, find the perimeter of this triangle.

Solution. Let C', B', A' be the points where the inscribed circle meets to the hypotenuse AB and the legs AC, BC of the right triangle ABC (see the figure). Corresponding then the properties of tangent segments imply

$\overline{AB'} = \overline{AC'} = x,\ \overline{BC'} = \overline{BA'} = y,\ \overline{CA'} = \overline{CB'} = r$.



Furthermore,

$$a = y + r, b = x + r, c = x + y,$$

therefore

$$\begin{aligned} L &= a + b + c = (y + r) + (x + r) + c \\ &= 2r + (x + y) + c = 2r + 2c \\ &= 2 \cdot 4 + 2 \cdot 20 = 48\ cm, \end{aligned}$$

So, the perimetar is 48cm. ■

8. Let ABC be a right triangle with inscribed circle radius $4\ cm$, in which the legs differ by $4\ cm$. Find the perimeter of this triangle.

Solution. Let C', B', A' be the points where the inscribed circle meets the hypotenuse AB and the legs AC, BC of the right triangle ABC (see the figure). Corresponding then from the properties of tangent segments imply $\overline{AB'} = \overline{AC'} = x,\ \overline{BC'} = \overline{BA'} = y,\ \overline{CA'} = \overline{CB'} = r$. Furthermore, $a = b + 4$, $c = x + y = b - r + a - r = b - 4 + b + 4 - 4 = 2b - 4$. Now, by the Pythagorean theorem we obtain the following

$$a^2+b^2=c^2,$$
$$(b+4)^2+b^2=(2b-4)^2,$$
$$2b^2+8b+16=4b^2-16b+16,$$
$$b^2=12b.$$

But $b>0$, therefore $b=12\ cm$. So,

$$a=12+4=16\ cm,\ c=2\cdot 12-4=20\ cm \text{ and } L=a+b+c=48\ cm. \blacksquare$$

Next, we consider one more problem obtained from Problem 4 by omitting two conditions (not including condition 2), whose solution is the same as the solutions of the previous problems.

9. The lengths of the legs of a right triangle are positive integers (in centimeters). If the hypotenuse is $20\ cm$, find the perimeter of this triangle.

Solution. Let a and b be the legs and $c=20\ cm$ be the hypotenuse of the right triangle ABC. By the Pythagorean theorem it follows that

$$a^2+b^2=20^2.$$

Now, since the lengths of the legs a and b are positive integers, without loss of generality we may assume that $a<b$. Accordingly, the ordered triple of natural numbers $(a,b,20)$ is a Pythagorean triple. Using the fact that the unique Pythagorean triple whose largest element is 20 is the triple $(12,16,20)$, we obtain $a=12$, $b=16$ and $L=a+b+c=48\ cm$. $\blacksquare$

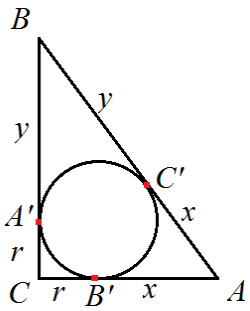
In the formulations of the previous five problems, we simply omitted two conditions from the formulation of Problem 4 and obtained problems that are not overdetermined and have the same solution as Problem 4. In the following, by omitting two conditions from Problem 4 we obtain a problem in which one of the solutions is the solution of Problem 4.

10. The lengths of the legs of a right triangle are positive integers (in centimeters). The radius of the inscribed circle of the triangle is $4\ cm$. Find the perimeter of this triangle.

Solution. Let a and b be the legs, c be the hypotenuse and $r=4\ cm$ be the radius of the inscribed circle of the right triangle ABC. Let $a=y+4$, $b=x+4$ and $c=x+y$. So, x,y are natural numbers greater than 4 and, without loss of generality, we may assume that $y>x$. Now, by the Pythagorean theorem follows the equation

$$(y+4)^2+(x+4)^2=(x+y)^2,$$

which is equivalent to $(x-4)(y-4)=32$. Furthermore, the given conditions and the last equation is equivalent to the following systems of equations



$$\begin{cases} x-4=1 \\ y-4=32 \end{cases} \qquad \begin{cases} x-4=2 \\ y-4=16 \end{cases} \qquad \begin{cases} x-4=4 \\ y-4=8 \end{cases}$$

whose solutions are, respectively, $x=5,\ y=36$; $x=6,\ y=20$ and $x=8,\ y=12$. Therefore, the problem has three possible solutions:

a) $a=40\ cm,\ b=9\ cm,\ c=41\ cm$ and $L=90\ cm$,

b) $a = 24\ cm,\ b = 10\ cm,\ c = 26\ cm$ and $L = 60\ cm$,

c) $a = 16\ cm,\ b = 12\ cm,\ c = 20\ cm$ and $L = 48\ cm$. ■

CONCLUSION

In this paper are presented four overdetermined problems, three of which were posed at mathematics competitions for students of the eighth and ninth grade in nineyear primary education and one in a mathematics journal. The three problems were published after the mentioned competitions were finished and the solution of the fifth problem is given in the next issue of the same journal. Furthermore, for none of the problems was a correction issued, which leads us to conclude that in all cases neither the teachers nor the students noticed that the problems are overdetermined.

It is natural and logical to ask what causes this situation, particularly in the case of Problem 4, for which it is obvious that it is overdetermined, since a triangle is determined by three independent elements. As far as we know, there is no existing research on this topic in the field of methodics of mathematics and mathematics education methodology. Nevertheless, we believe that errors of this kind stem from an incomplete realization of the steps of solving a mathematical problem, and in particular from a lack of thorough understanding of the problem and the additional analysis after it is solved, i.e., the first and fourth step. Furthermore, the presence of overdetermined problems can be an obstacle to students' acquisition of knowledge. However, some overdetermined problems, such as Problem 4, also have high didactic value. We believe that the procedure by which the six determined problems were derived from the overdetermined Problem 4 not only contributes to the conscious acquisition of mathematical knowledge, but it makes a significant contribution to developing the quality of students' thinking. This is especially true for flexibility and critical thinking: finding different ways to solve an overdetermined problem will inevitably reveal that it is overdetermined, and a critical analysis of the problem's conditions will result in identifying several problems, some of which are equivalent to the given one — as is the case with Problems 5–9, which are equivalent to Problem 4.

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INNOVATIONS AND TRANSFORMATIONS IN LIBRARY SERVICES – THE ROLE OF LIBRARY STAFF

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Abstract

Libraries serve as centers of education, knowledge, and culture, playing an essential and responsible role in society. For a library to exist and function effectively, several fundamental elements are required to enable it to operate successfully and achieve its objectives. These elements include library space, equipment, materials, users, and—most importantly—library staff. The role of staff is crucial to the daily operations of libraries, as the quality of library services largely depends on their knowledge and competencies. Therefore, it is vital to pay particular attention to library personnel, who must possess specific expertise, cultural awareness, and professionalism. Research on library users shows that they value knowledgeable librarians who can guide them to the right sources of information, thereby meeting their educational, cultural, and informational needs. Thus, the role of library staff is of great significance in service delivery, and library management should devote considerable attention to staff development, professional growth, and ensuring their motivation.

Keywords: library, library staff, human resources in libraries, human resources development.

Introduction

In contemporary organizational theory, human resources are increasingly recognized as the most valuable and strategic asset of any institution, particularly in knowledge-based and service-oriented sectors such as libraries. Unlike purely technical or production-based organizations, libraries operate within a complex socio-cultural environment where human interaction, professional expertise, and interpretative judgment play a decisive role in delivering high-quality services to diverse user communities (Petrovski, 2007). In this sense, the effectiveness of library services is not determined solely by the availability of collections or technological infrastructure, but primarily by the competencies, motivation, and adaptability of the library staff who mediate access to information and knowledge.

The functioning of libraries is influenced by a dynamic interplay of internal and external factors, including rapid technological developments, changing patterns of information consumption, and evolving user expectations shaped by digital culture. Within such a context, human resource management emerges as a crucial component for ensuring institutional sustainability, innovation, and service quality. Human resources encompass not only the quantitative dimension of staffing but also qualitative aspects such as skills, professional development, creativity, and the capacity for lifelong learning, all of which are essential for responding to contemporary challenges (Velkova, 2018). Consequently, modern libraries must adopt strategic approaches to staff development in order to remain relevant in an increasingly competitive and information-rich environment.

From a historical perspective, the development of librarianship in the Republic of North Macedonia reflects broader socio-political and cultural transformations that have shaped the region. In earlier periods, due to the lack of formally educated library professionals, teachers and educators frequently assumed the role of librarians, which underscores the deep-rooted connection between education and librarianship (Georgievski, 1989). Over time, however, the professionalization of library staff has become a priority, supported by legislative frameworks, institutional reforms, and the establishment of formal educational pathways for librarianship. This transition reflects a broader recognition of the importance of specialized knowledge and competencies in managing library services.

In the contemporary digital age, libraries are undergoing profound transformations driven by digitization, open access initiatives, and the integration of advanced information technologies. These developments significantly expand the scope of library services while simultaneously imposing new demands on library staff. Librarians are now expected to possess not only traditional bibliographic skills but also digital competencies, critical thinking abilities, and communication skills necessary for engaging with users in both physical and virtual environments. As a result, the role of library personnel has evolved into that of information mediators, digital literacy educators, and facilitators of community engagement, highlighting the need for continuous professional development and institutional support.

This paper therefore examines the evolving role of library staff within the context of innovation and transformation in library services, with a particular emphasis on professional development, competencies, and the challenges faced by librarians in North Macedonia.

The Role of Library Staff and Opportunities for Their Professional Development

In the contemporary knowledge society, libraries function as dynamic and multifunctional institutions that support lifelong learning, cultural participation, and equitable access to information. Within this framework, library staff occupy a central and indispensable role as intermediaries between users and information resources. Their responsibilities extend far beyond traditional tasks such as cataloguing and circulation, encompassing advisory services, user education, digital support, and active participation in knowledge dissemination processes (Kotovchevska, 2023). This expanded role reflects the transformation of libraries into interactive learning environments where users seek guidance, not only access to materials.

The modern librarian is expected to possess a broad and interdisciplinary set of competencies that enable effective performance in a rapidly evolving information landscape. These competencies include information literacy, technological proficiency, communication and interpersonal skills, as well as intercultural awareness. Such a skill set allows librarians to respond to the diverse needs of users, who increasingly rely on libraries for navigating complex information ecosystems. Moreover, librarians must demonstrate the ability to critically evaluate information sources and guide users toward credible and relevant content, particularly in an era characterized by misinformation, digital overload, and the proliferation of unverified online resources (Trajanova, 2019).

Professional development is therefore not an optional aspect but a fundamental requirement of modern librarianship. Continuous education enables librarians to adapt to technological innovations, enhance their professional competencies, and improve the overall quality of library services. Opportunities for professional development are diverse and include formal education, specialized training programs, workshops, conferences, and seminars. In addition, digital technologies have significantly expanded access to professional learning through online courses, webinars, and virtual professional communities, allowing librarians to engage in lifelong learning regardless of geographical limitations (Hajdarpašić et al., 2021).

Furthermore, there is a strong correlation between staff development and organizational performance. Libraries that invest in the continuous education and motivation of their employees are more capable of implementing innovative services and responding effectively to changing user expectations. Well-trained and motivated staff contribute to the creation of a positive organizational culture, increased efficiency, and higher levels of user satisfaction, thereby enhancing the overall impact of library services within the community (Velkova, 2018).

Another critical dimension of the librarian's role is adaptability to technological change. Rapid advancements in information and communication technologies require librarians to continuously update their knowledge and acquire new digital skills. This includes familiarity with digital libraries, databases, information retrieval systems, and emerging technologies such as artificial intelligence and data analytics. In this context, librarians increasingly assume the role of "knowledge navigators," guiding users through complex digital environments and facilitating access to relevant information resources.

In addition to technical and professional competencies, ethical responsibility constitutes a core principle of librarianship. Librarians are expected to uphold values such as intellectual freedom, equal

access to information, and the protection of user privacy. These ethical standards are essential for maintaining public trust and ensuring that libraries function as inclusive and democratic institutions.

Collaboration and teamwork also represent essential components of modern library practice. Librarians frequently engage in multidisciplinary cooperation with educators, researchers, cultural institutions, and international organizations. Such collaboration enhances knowledge exchange, fosters innovation, and contributes to the development of new services that address the evolving needs of users.

In the specific context of North Macedonia, continuous professional development of library staff is of particular importance due to ongoing transformations in the library sector. Librarians are expected to align with international standards while simultaneously addressing local cultural and educational needs. This requires a strategic and systematic approach to human resource development, supported by institutional policies, national frameworks, and international cooperation initiatives.

Conclusion

Libraries continue to play a fundamental role in the development of knowledge, literacy, and cultural identity in contemporary society. As institutions that promote education and access to information, they contribute significantly to intellectual growth, social inclusion, and the strengthening of democratic values. Within this framework, library staff represent the key driving force behind the successful functioning and ongoing transformation of library services.

The findings of this analysis indicate that the role of librarians has undergone significant transformation in response to technological advancements and societal changes. Modern librarians are no longer passive custodians of collections but active facilitators of knowledge, educators, and community-oriented professionals. Their ability to adapt to new challenges, integrate digital tools, and continuously develop their competencies is essential for maintaining the relevance and effectiveness of libraries in the digital age.

However, despite their crucial role, library staff in North Macedonia face numerous challenges, including limited financial resources, outdated infrastructure, and insufficient opportunities for continuous professional development. Addressing these challenges requires a strategic approach that prioritizes investment in human resources, technological infrastructure, and organizational capacity building.

International cooperation, particularly with organizations such as UNESCO and European institutions, provides valuable opportunities for knowledge exchange, training, and the adoption of best practices. These collaborations enable libraries to access global expertise and innovative solutions, thereby enhancing the quality and diversity of their services.

Ultimately, investing in the professional development of library staff represents a long-term investment in the sustainability and advancement of libraries as institutions. Through continuous learning, innovation, and collaboration, library professionals can continue to serve as catalysts for cultural, educational, and social development within their communities.

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