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The Procedure at the executive level for the approximation of Albanian legislation with the EU acquis

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Abstract

The opening of the membership negotiations by the European Union (EU) with the Republic of Albania in July 2022 is a very important stage for the process of integration into the EU. It requires the commitment of the country's institutional structure in many new directions. One of the most important issues for a country's full membership is the approximation of national law with the EU acquis. For this purpose, during the years this process is undergoing, important legal changes have been made. This article will analyze the changes made at the executive level of two important acts: 1. Law No. 9000, date 30.1.2003 "For the Organization and functioning of the Council of Ministers" and 2. Decision of Council of Ministers No. 584, date 28.8.2003 "For the approval of the Regulation of the Council of Ministers" (Regulation of CoM), as amended. These acts have been changed many times to define the necessary elements a project act aiming at approximation should contain.

The purpose of this paper is to identify, analyze, and compare with the previous provisions these changes. The object of this paper is related to one of the topics of this conference as it analyzes an important legal basis that is part of the Albanian approximation framework during the integration process towards the EU. More specifically, this paper analyzes the role of the Council of Ministers (CoM) in the approximation of national law with that of the EU.

For this paper, the author has conducted a study in two phases: that of desk-based research and the analysis of the data collected. During the desk-based research, the legal framework in force and the concrete changes it underwent were identified. The phase of analysis of the data collected enabled the identification of the impact of the changes of the two above acts bringing in the approximation of the national legislation process and the relevant recommendations for its improvement. These approaches used by the authors are in function to identify the results and implications that this paper aims to bring.

Keywords: executive power, approximation, act, integration process.

1. Introduction

Membership of a country in the EU is not only a political and economic matter but also a legal one. The legal aspect involves a comprehensive and multidimensional process of approximating national legislation with EU law. This process also promotes cooperation in the political and economic fields.

The Republic of Albania is obliged to approximate its legislation to EU law as per the Stabilization and Association Agreement (SAA) from 1 April 2009, when it entered into force. According to Article 70 of the SAA, Albania is required to transpose EU law to the fullest extent possible as a prerequisite for EU membership.

The process of approximation involves two elements:

1. First, the legal framework (at the executive and legislative level) for the steps of the procedure to approximate national legislation with the EU law;

2. Secondly, the relevant institutional framework must be established, which includes the institutional structure and mechanisms for coordinating the EU integration process.

This paper will deal with the first one, the legal basis at the executive level, particularly the Regulation of the CoM. The analysis will focus on the provisions of the Regulation of CoM for drafting and approving acts aimed at approximation. The aim is to highlight the amendments made to these provisions, taking into account the progress of the European integration of the Republic of Albania.

2. Regulation of CoM of Albania – provisions on draft acts for approximation

The legal basis for the steps of the procedure at the executive level of a draft act aimed at approximating it with the EU *acquis* are 1. Law no. 9000, dated 30.1.2003 "For the Organization and functioning of the Council of Ministers", and 2. The decision of CoM no. 584, dated 28.8.2003 "For the approval of the Regulation of the Council of Ministers", as amended;

Through the adoption of a Decision of CoM, the Regulation of CoM has undergone several amendments from its first approval in 2003, as follows:

1. Decision of CoM no. 201, dated 29.03. 2006;[1]
2. Decision of CoM no. 4, dated 07.01.2009;[2]
3. Decision of CoM no. 233, dated 18.03.2015;[3]
4. Decision of CoM no. 653, dated 14.09.2016;[4]
5. Decision of CoM no. 197, dated 11.04.2018;[5]
6. Decision of CoM no. 35, dated 24.1.2024;[6]

The initial amendments to the Regulation of CoM were made in 2006, before the ratification and entering into force of the SAA. These amendments pertained to the assessment of the degree of approximation. For this purpose, two documents needed to accompany the draft normative act aimed at approximation: 1. a relation and 2. a compatibility table with the *acquis*. The draft acts and accompanying documents were sent to the Minister for Integration for review to confirm their compatibility with the *acquis*. If this has not been done, the Ministry of Integration will return it to the proposal institution for further additions before further consideration by the CoM.[7]

In 2009, through the Decision of CoM no. 4, date 07.01.2009, new requirements were added for the draft act with a normative character to align with the *acquis*. The draft normative act should state the CELEX number, date of approval, and full title of the relevant legal instrument of the EU law. This would facilitate the identification of the respective legal act of the *acquis* being approximated. Additionally, a note should be included at the bottom of the first page, linked to the title of the draft act, to reference the legal instrument of the *acquis*.[8]

In June 2014, Albania was granted candidate country status by the EU. The amendments made to the Regulation of CoM for the adoption of a draft act aimed at approximation are mainly related to this development. The Regulation of CoM was subject to amendments by the Decision of CoM no. 233, dated 18.03.2015, that sanctioned: *"If a draft act aims to implement the National Plan for European Integration, the relation must also include a clear reference to this"*.[9]

The National Plan for European Integration (NPEU) is a crucial tool for legal approximation. It is prepared and approved by the Albanian government as part of the process of Albania's integration into the EU. The drafting of the NPEU for approximation of the national legislation with the *acquis* began in September 2007, with the approval of the National Plan for the Implementation of the SAA 2007-2012.[10] The NPEU comprises the legal acts that Albanian institutions are expected to approve and are intended to align with the EU *acquis*, as well as the best European and international standards.[11]

Once approved by the CoM, the NPEU must be presented to the Parliament of the Republic of Albania. This presentation is solely for informative purposes, as part of the Government's obligation to keep the legislative branch informed about the European integration process. Thus the approval of the Parliament of the Republic of Albania is not required for the NPEU.[12] In addition, the proposed draft acts implementing the NPEU must include "the compatibility tables" too. These tables will help the legal structures in line ministries and European integration units to determine the degree of compatibility between Albanian legislation and the EU *acquis*. The model of these tables should follow the appendix attached to the Decision of the CoM No. 233, dated 18.03.2015.[13]

The compatibility tables are a key regulatory assessment tool required by the European Commission for EU candidate countries to demonstrate their level of preparation and alignment with the EU *acquis* during the negotiation process for the chapters of the EU acquis.[14] Also, the draft act submitted for consideration shall be accompanied by an explanatory report containing all the necessary elements and accompanying documents. For draft acts related to the NPEU, compatibility tables, and the EU act to be

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[1] https://qbz.gov.al/preview/0242cbe7-3a20-4d2a-aadc-3a83cd5b60ef.

[2] https://qbz.gov.al/preview/30dd8df8-4899-42cb-983c-aa11e8962017.

[3] https://qbz.gov.al/preview/9f9eaee8-10a8-4757-8b01-ca9e117221f7.

[4] https://qbz.gov.al/preview/7de7df6d-7eed-47bd-aca2-7a7ac2e51258.

[5] https://qbz.gov.al/preview/440a0499-6698-46a8-a045-75cbf387b4cf.

[6] https://qbz.gov.al/preview/61fe14eb-3d6f-4d5c-b030-43c23746505d.

[7] https://qbz.gov.al/preview/0242cbe7-3a20-4d2a-aadc-3a83cd5b60ef.

[8] https://qbz.gov.al/preview/30dd8df8-4899-42cb-983c-aa11e8962017.

[9] https://qbz.gov.al/preview/9f9eaee8-10a8-4757-8b01-ca9e117221f7.

[10] https://integrimi-ne-be.punetejashtme.gov.al/anetaresimi-ne-be/plani-kombetar-i-integrimit-pkie/.

[11] Ibid.

[12] Beqiraj, P., Bashkimi Evropian dhe sovraniteti parlamentar, në këndvështrimin e vendimeve të Gjykatës së Drejtësisë të Bashkimit Evropian - Universiteti I Tiranës. (n.d.). p. 139. Unitir.edu.al. Retrieved April 2, 2024, from https://unitir.edu.al/bashkimi-evropian-dhe-sovraniteti-parlamentar-ne-kendveshtrimin-e-vendimeve-te-gjykates-se-drejtesise-te-bashkimit-evropian/.

[13] https://qbz.gov.al/preview/9f9eaee8-10a8-4757-8b01-ca9e117221f7.

[14] Ministry of Justice, "Manuali per Hartimin e Legjislacionit". 2021. https://www.drejtesia.gov.al/wp-content/uploads/2022/06/Manual-Shqip-E-bashkuar.pdf. pg. 218.

approximated and translated into Albanian must also be attached.[15] When the assessment of the degree of approximation is only partial, it requires future initiatives to be explained to achieve full approximation with the EU *acquis*.

With the Decision of CoM no. 653, dated 14.09.2016 amending the Regulation of CoM, once again is required that: "*when drafting acts to implement the NPEU, it is necessary to include compatibility tables and the legal act of the EU that is intended to be approximated and translated into Albanian*".[16]

The amendments to the Regulation of CoM in 2018 by the Decision of CoM no. 197, dated 11. 04.2018 a new requirement was made obligatory. A new document, known as "the Impact Assessment Report (RIA)", that displays the estimated costs and benefits of implementing a legal act for the groups affected by the implementation, as well as the cost of public and administrative finance, must be available. As of January 2019, no draft act is reviewed and approved by the CoM without the RIA, except those defined in point 1 of Article 45 of the Regulation of the CoM.[17]

The latest amendment was made in 2024 after the negotiations with the EU were formally opened for Albania in 2022. In July 2022, the Intergovernmental Conference on accession negotiations was held with Albania. The Commission of the EU started the screening process.[18]

The decision of the CoM no. 35, dated 24.1.2024, amending its Regulation states that: "*After the ministers and heads of the institutions concerned have delivered their opinions, the draft act, together with the documents referred to in point 45 of Chapter VI of this Regulation, shall be submitted for opinion to the ministerial group of which the proposing minister is a member.*"[19]

An inter-institutional working group is set up for each of the 35 chapters of the EU *acquis*, and it has the following competencies: 1. Preparation of the analytical assessment of the harmonization of national legislation with the *acquis* of the EU; 2. Preparation of draft proposals for negotiating positions for each chapter of the *acquis* of the EU, etc.[20]

4. Conclusions

The above-analyzed amendments to the Regulation of CoM results that it was amended six times from 2006-2024. The amendments were made almost to all the chapters of this Regulation: 1. Initiative for the draft act (Chapter II of the CoM Regulation); 2. Preparation of the draft act (Chapter III of the CoM Regulation); 3. Giving opinions on the draft act (Chapter IV of the CoM Regulation); 4. Coordination of the draft acts (Chapter V of the CoM Regulation); 5. Presentation of the draft acts and review in the Council of Ministers (Chapter VI of the CoM Regulation).

These amendments were conditioned by the stages of integration of the Republic of Albania into the EU, which established new requirements for the approximation of national legislation. For this reason, changes in the procedure of approval of draft legal acts were necessary with the aim of approximating legislation. For the procedure at the executive level, these changes concerned the Regulation of the CoM. Subsequently, changes were also made to the Rules of Procedure of the Parliament of the Republic of Albania for the legislative procedure of their approval.

The above amendments made it possible for a draft approximation act at the executive procedure to have the following elements:
- Degree of approximation;
- The relevant act of EU acquis to which it will be approximated;
- The relation to the implementation of the NPEU;
- The estimated costs and benefits of implementing a legal act for the groups affected by the implementation, as well as the cost of public and administrative finance.

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Decision of CoM no. 233, dated 18.03.2015, https://qbz.gov.al/preview/9f9eaee8-10a8-4757-8b01-ca9e117221f7.

Decision of CoM no. 653, dated 14.09.2016, https://qbz.gov.al/preview/7de7df6d-7eed-47bd-aca2-7a7ac2e51258.

Decision of CoM no. 197, dated 11.04.2018, https://qbz.gov.al/preview/440a0499-6698-46a8-a045-75cbf387b4cf.

Decision of CoM no. 35, dated 24.1.2024, https://qbz.gov.al/preview/61fe14eb-3d6f-4d5c-b030-43c23746505d.

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[15] https://qbz.gov.al/preview/9f9eaee8-10a8-4757-8b01-ca9e117221f7.

[16] https://qbz.gov.al/preview/7de7df6d-7eed-47bd-aca2-7a7ac2e51258.

[17] https://qbz.gov.al/preview/440a0499-6698-46a8-a045-75cbf387b4cf.

[18] https://neighbourhood-enlargement.ec.europa.eu/enlargement-policy/albania_en.

[19] https://qbz.gov.al/preview/61fe14eb-3d6f-4d5c-b030-43c23746505d.

[20] https://integrimi-ne-be.punetejashtme.gov.al/strukturat/grupet-nderinstitucionale-te-punes/.

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The impact of conceiving an empirical ESP course on undergraduate Engineering students: A case study at Ovidius University of Constanta

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Abstract

The aim of this study is to show why speaking English while practising, focussing on, and promoting language learning plays such an important role in conceiving an empirical ESP course. It also looks into how ESP classes are viewed by engineering students as a means of preparing them for both professional and academic communication. A questionnaire is conducted on 104 Civil and Mechanical engineering students at Ovidius University of Constanta. In addition to being questioned about their expectations, learning goals, and perceived initial level of proficiency, students were also asked about how well they felt they had developed the various skills, how well their initial learning objectives had been met, and how well they thought the ESP course had prepared them for professional and academic communication on a global scale. The empirical evidence collected based on both quantitative and qualitative research methods will show that speaking is regarded as the utmost significant skill among all since it is needed to enter the labor market swiftly after being integrated. Since ESP is thought to be a means of acquainting students with discourse particular to their field of study, to improve the courses and bring them closer to learners' perceived requirements and specialized communication practices, it is imperative to determine how to make them even more beneficial to students.

Keywords: ESP, speaking skill, empirical study, P(resent) S(ituation) A(nalysis), T(arget) S(ituation) A(nalysis), C(ontext) A(analysis).

1. Introduction

The word empirical, which comes from the Greek word empeirikos, which means "experienced," in modern parlance refers to a collection of data supported by evidence and testimonials that are collected by means of remarks, comments, observation, or experience or by using calibrated scientific tools, such as surveys, polls, experiments, or interviews.

The concept of ESP is fundamentally founded on needs analysis, as ESP instruction is grounded in the requirements of the learner (see Dudley-Evans and St John, 1998, Hutchinson and Waters, 1987, Offord-Gray and Aldred, 1998). Hutchinson and Waters provide a concise, yet comprehensive, explanation of ESP in an attempt to distill its core. They emphasize that ESP should be viewed as a method/approach rather than a product. Finding out what students think of a course is a part of a needs analysis, also known as present-situation analysis, or PSA (see Brown, 2016, Flowerdew, 2010). This helps teachers make assumptions about possible target needs, which is what a target situation analysis (TSA) would aim to establish.

Westerfield (2010) p.1 views, "In the needs assessment process, the ESP practitioner does his/her best to find out information about the needs of the sponsor organization, the needs and wants of the learner, and the context in which the learning will take place. This will involve conducting a Target Situation Analysis (what does the learner need to be able to do with the language in the future), a Present Situation Analysis (what can the learner do with the language now), and a Context Analysis (what is the environment in which the learning will take place)".

Currently, ESP is witnessing an increase in course effectiveness investigations, which are geared toward evidence-based program design decisions (see Wette & Hawken, 2016). Even though these investigations will rely on students' awareness of (and ability to articulate) their subjective lacks and wants, studies into students' individual learning goals can provide valuable information to ESP teachers and course developers (see Berwick, 1989; Poedjiastutie and Oliver, 2017).

However, we are aware that divergent opinions may surface throughout the needs analysis process, but this does not mean they should be disregarded. Students' perspectives must be heard and taken into consideration.

2. Literature review

Recognizing the importance of the input that students provide to the needs analysis process in contexts of global, worldwide education, the development of professional communication among engineering students seems to be facilitated by integrated-skills courses, which go beyond writing.

As stated by Ono and Morimura (2007), in an ESP course, students should develop the following competencies: a cosmopolitan, global perspective; creative skills and self-motivation for problem-solving in relation to their professional domains; an ability to connect with English-speaking experts worldwide thanks to their skill in the language; experiential learning opportunities that will facilitate their ability to interact with people from different countries on an equal footing.

Establishing the groundwork for future language acquisition and skill improvement, as well as enhancing learners' general communicative ability in the context of their professional activity, should be the dual main goals of any ESP course. Therefore, selecting appropriate study materials from a range of trustworthy and legitimate sources—most notably authentic texts—and preferably having them written by native English speakers is one of the main goals when creating a manual for language training for specific purposes (see Talberg, 2006).

Even if Poe, Lerner, and Craig (2010), p. 147, outline the fact that engineering students consider the "ability to write and speak clearly about design and research to be critical", we share and support Kim's hypothesis (2013) according to which based on needs analysis, which determines what students must accomplish with the foreign language in the intended setting and how students may most effectively study the language throughout their training, the course should be customized to each student's unique needs.

Musikhin (2016), p. 34 claims that "offering learners the opportunity to develop adequate and comprehensive English skills is becoming a necessity", and therefore "the incorporation of language and communication improvement courses and ESP manuals is an important element of continuous learning, and will eventually contribute to the process of life long learning".

Most scholars acknowledge the present difficulties that educators and learners of English for Specific Purposes may run into. This teaching-learning process places more emphasis on the value of practicing the abilities that one will mostly need in their future fields of endeavor than it does on general grammar, vocabulary, and language structures (see Fălăuș, 2017).

As Gatehouse (2001) stated, a highly efficient exchange of ideas in a professional target setting requires three key competencies: the capacity to use the specific jargon of a given professional circle; the capacity to apply a set of academic skills relevant to the occupational setting under discussion; and the capacity to use everyday language to engage in productive communicational activities like chit-chatting with a colleague or replying to an informal email.

One of the most fundamental features of ESP is that students learn English as a component of a subject matter field that is significant to them, rather than as a subject taught in isolation from their daily life (see Triristina, N. & Khabib, S., 2021).

A curriculum and effective teaching methods can be chosen based on the needs analysis results. Developing a curriculum and effective teaching methods is the ultimate purpose of needs analysis. This is required because—in a learner-centered classroom—important choices about the content to be taught, the method to be taught, the timing of the instruction, and the method of assessment will all be decided with the learner in mind. Answers to the fundamental questions of what, how, when, and how well shall be provided by information gathered from learners, whenever possible (see Nunan, 1999). Thus, the improvement of engineering students' writing and speaking English skills may benefit considerably from ESP needs analysis.

There are typically far more obstacles when teaching ESP. Despite the claim that it is a learning-centered approach, every instructor in charge of ESP still views ESP as a significant testing experience since it concentrates on the unique requirements of the students, emphasizes language in context more, and the necessity for the students to acquire a certain set of professional abilities and job-related tasks.

3. Method

We have chosen to perform a collective analysis encompassing the quantitative and qualitative methods to find the best answer to questions which couldn't be examined and explored otherwise. In order to comprehend why speaking is the most important skill of all, a survey of 28 questions was conducted to gather the opinions of our students and the factors that influence their choices. Arithmetic means, percentages, and frequency distributions were the statistical tools employed to analyze such data. To confirm the information gathered from the questionnaire, a few selected respondents participated in a closed-ended interview as well. Nevertheless, the findings and results did not include the interview data.

Our starting point was that taking ESP classes may be a terrific method to help students become more globally minded and adept at communicating across cultural boundaries. Based on the findings, a recommendation is made to integrate ESP with more comprehensive institutional internationalization plans. This will increase ESP's relevance in today's globalized environments by enabling ESP courses to foster the development of transferable skills that have an impact on graduates' employability abroad. Be mindful, however, that this study is restricted to the responses of the participants to the questionnaire and concentrates solely on the use of English for speaking in professional settings.

4. Findings and results

Based on my 23 years experience of teaching ESP in the Civil and Mechanical Engineering Program, I came to the conclusion that even after studying English for six years in junior and senior high school, the majority of students still struggle with effective communication. They encountered challenges while attempting to apply the terminology and structure they needed to acquire in an ESP setting. As a result, the students had no desire or lost their interest to learn ESP. Therefore, we think tt is extremely important to look into how students feel about teaching ESP in the non-English department in light of these facts.

This research was performed at Ovidius University of Constanta, Faculty of Civil Engineering, Faculty of Applied Sciences and Engineering, and Faculty of Mechanical, Industrial, and Maritime Engineering. The data for this research were gathered from students in December – January of the 2023-2024 academic year.

A total of 104 students voluntarily got involved in this study. The questionnaire was split into 3 sections: questions 1-9 supply exhaustive demographic data about the partakers, questions 10-17 evaluate the most important English language skills, specific tasks, and activities related to each skill, while questions 17–28 focus on the importance of speaking in ESP environment.

Only the students from the 1st year participated in this research during the 2023-2024 academic year, 47,1 % of whom were female and 52,9 % of whom were male, 8,7 % were working in same field, 14,4 % in a different field during college or 7,7 % attending a different faculty. Most of them (38,5%) choose this faculty because this is what they see themselves doing in the future or because they like the field (37,5%), whereas the rest of them (13,5%) consider it a profitable job.

In terms of the job or position they will have after graduation, 42,3% hope they will be working in a public institution, 35,6% will become researchers in the field, 29,8% will work abroad, whereas 18,3% have not even the slightest idea of what they are going to do after graduation. Moreover, 74% of them think they will be working in the same field in Romania, whereas 24% will be working abroad.

When asked whether they will use their English knowledge, considering the globalization or the evolution of society and technology, 98,1% feel they will need and use English daily.
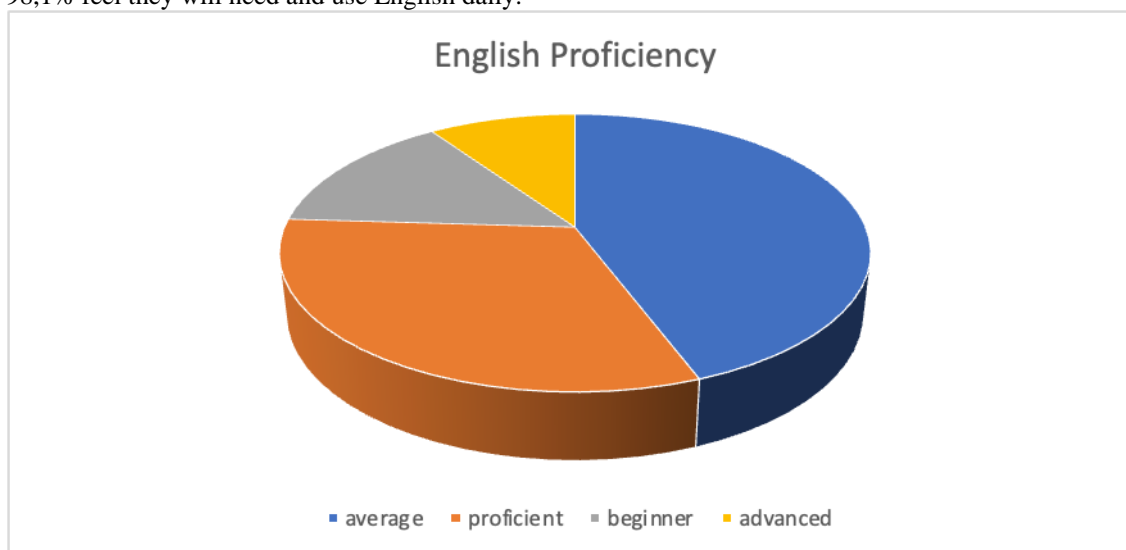

Figure 1 (Author's own processing)

Figure 1 shows that as far as English language proficiency goes, 44,2% of the students are mediocre; they can carry on a basic conversation, comprehend everyday terms, and possess rudimentary grammar knowledge. 31,7% of them are proficient; they can hold a discussion on a variety of subjects, comprehend different texts with ease, and have solid grammar understanding. In contrast to 14,4% of novices who only know a few words, 9,6% of the advanced speakers have a strong command of the language, a firm grasp of syntax, and the ability to understand 90% of any writing.

When questioned about what English-language ability will be needed the most in their future career, 56,9% of them will require conversation/speaking skills/ oral comprehension, 19,6% general and specialized vocabulary, 15,7% writing capabilities, and 7,8% listening skills.

When asked which of the following English language proficiency areas they feel they still need to focus on improving, 54.8% of the ESP students believe they need to work on their general and specialized vocabulary, 42.3% on their conversation/speaking skills, 32.7% on their grammar, 27.9% on their pronunciation, 26% on their oral understanding, 24% on their writing abilities, and last but not least, 22.1%, believe they need to work on their reading skills.

In terms of the competencies/ skills that students enrolled in a technical ESP course must strengthen, 48.1% of them think that they need to develop reading English-language research papers, documents, and technical projects, 44.2% need to work on communicating verbally in a professional manner (with coworkers, clients, and through job descriptions), 42.3% on reading English-language manuals, documents, abstracts, and directions, 37.5% on verbal assistance and support for job assignments, 32.7% on listening to English instructions, 31.7% on customary oral interaction and communication, 29.8% on taking part in an interview and attending meetings, seminars, or conferences to hear presentations and debates, 27.9% on writing down job projects and daily work reports, and last but not least 23.1% on drafting a resume, email, or letter.

Given that just a small percentage of them are exceptional (3.8%) and the great majority are merely acceptable speakers (44.2%) or mediocre (35.6%), we have proposed a set of the activities that should be done regularly to enhance their ability to speak and to perform effectively in an ESP course. Based on their answers, 60.6% of respondents believe it's essential to take part in discussions or debates centered on technical subjects, 47.1% in casual discussions in a range of sociocultural circumstances, 42.3% in English-language oral presentations, 40.4% in precise and unambiguous word pronunciation, 15.4% in role-playing and dialogues.
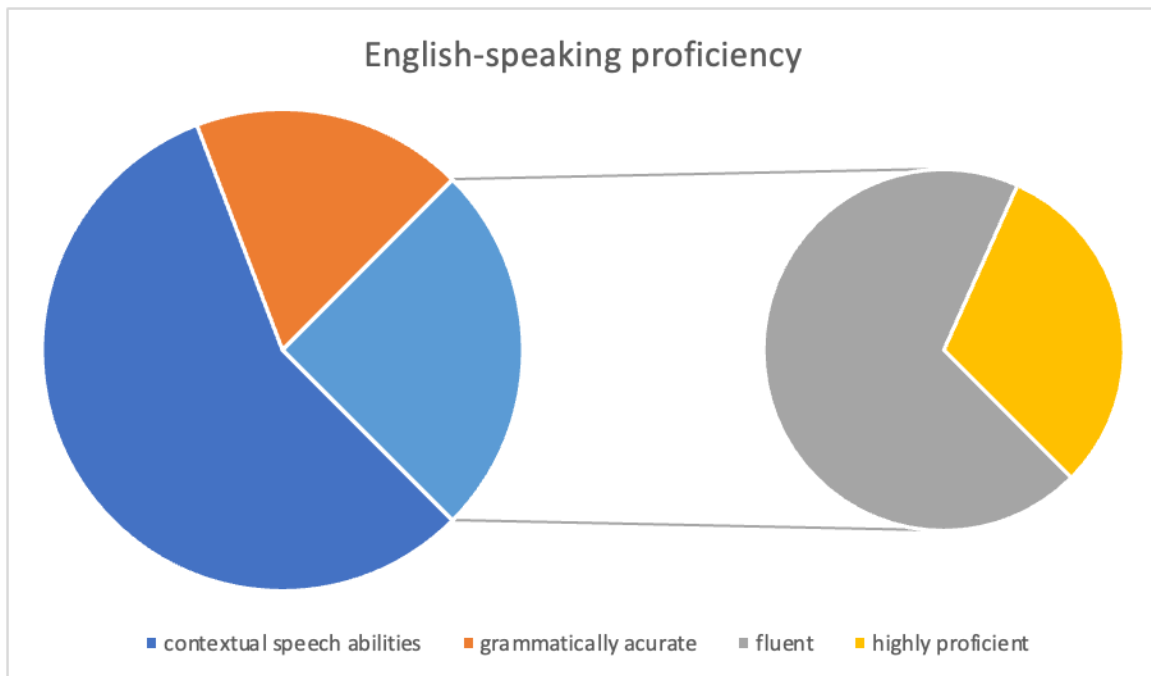
Figure 2 (Author's own processing)

Regarding their English-speaking proficiency, accroding to Figure 2, when questioned what their strong points are, 56.7% possess contextual speech abilities, 18.3% can communicate in grammatically accurate English, 17.3% consider their speech is fluid, whereas 7.7% have the ability to talk clearly, smoothly, and with the proper intonation. Obviously, the students' glaring shortcomings when it comes to spoken communication are proportionately inverse, namely 41.3% cannot to speak with the appropriate tone, fluency, and clarity, 30.8% don't possess the ability to speak English grammattically correct, 24% cannot speak fluently, and a small percentage (3.8%) lack the ability of contextual speaking.
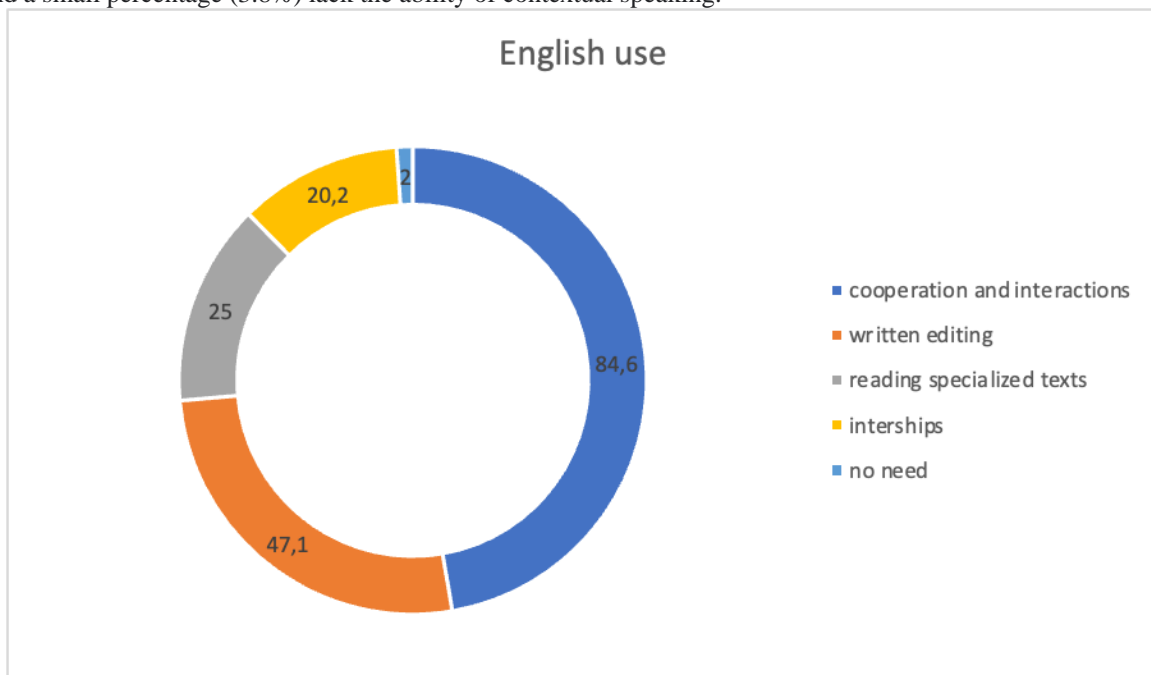
Figure 3 (Author's own processing)

Based on Figure 3, students' expectations about how they will use English in the workplace after graduation indicate that 84.6% will need it for cooperation and interactions (whether or not at work) with non-Romanian speakers: letter exchange, travel for business or study, face-to-face discussions and discourse on a range of subjects, sharing information, giving presentations, 47.1% for editing of written documents with a technical or scientific focus, scientific papers, conference presentations, 25% for reading

specialized materials, 20.2% for overseas internships, scholarships, and postgraduate study, whereas a very small percentage (2%) won't require proficiency in English. All these responses support Wu's (2014) assertion that ESP research is done for technical work-related reasons. One subject that might assist students in being ready to work in specific areas is ESP learning.

In assessing the individual interests and learning goals of students, our survey revealed that most of the students, namely 52.9% would like to join a research team to thrive in their future careers as civil or mechanical engineers, 36.5% to get an Erasmus scholarship, 28.8% to pursue postgraduate study overseas. Regretfully, 26.9% of the respondents had no particular interests or future plans beyond passing their examinations and graduating.

Of those surveyed, about 80.8% aim to pursue a master's degree, 15.4% have no further educational goals, and 3.8% plan to pursue doctoral studies. In terms of the best method of instruction, hybrid formats were chosen by 33.7% of students, traditional face-to-face interactions by 26%, online learning by 25%, and 15.3% of students had no choice.

The final and third portion of the questionnaire included questions about the Context—the setting in which language acquisition will occur.

Regarding the resources that should be included in any ESP course, 37.5% of respondents selected work forms, charts, graphs, and even relevant student papers—material utilized on the job, 20.2% said that dialogues, business letters, instructions, phone calls, pod-casts, or vodcasts from websites would be helpful, 11.5% chose to use instructional manuals, equipment handbooks, CDs, DVDs, videotapes, and other resources designed to prepare them for their career as civil or mechanical engineers, while the rest, 30.8%, selected a mix of all of these. Despite being predominantly paper-based, the results support Hyland's (2011) hypothesis who states that the material can also incorporate audio and visual assistance, computer and Internet mediated tools, genuine items, or performance. ESP materials are designed to spark students' creativity, readiness, and social interaction since their goal is to expose them to the actual language that is spoken in a range of professional and academic contexts.

The aforementioned conclusions and outcomes of the survey suggest that ESP is goal-oriented since it is customized for each student according to their unique academic and developmental needs. To summarize or encapsulate what their poll responses indicated, it was discovered that the courses barely satisfied the requirements for developing in post-graduate education and for successful communication in discipline-specific settings. The failure of ESP courses to meet the learning objectives of Romanian students studying civil and mechanical engineering, both academically and occupationally, supports the finding of Mahdavi Zafarghandi et al. (2014) that "the courses are inadequate to prepare the students to practically utilize their language capabilities to succeed in their academic or occupational outlook" (p. 14).

5. Conclusion

In order to reposition ESP courses in a curricular context, this study sought to provide a current-situation analysis of classroom instruction and university students' perspectives on ESP. It placed particular emphasis on how ESP courses could be made relevant to contemporary demands for academic and professional communication. Additionally, the findings and results also demonstrated that the target university's students were studying English for practical purposes. These include global cooperation, enhanced life prospects, global competitiveness in the job market for businesses, improved performance on international exams, cultural sensitivity, and comprehension of English-language publications and scientific literature.

More difficult speaking and vocabulary acquisition exercises and activities were the most frequently mentioned areas for improvement among the students, who all considered speaking English as essential for their future careers and were fully aware of their current proficiency level. We strongly believe that the present ESP courses need to be reevaluated in light of the increasingly globalized world to assess the extent to which they are compatible with the dynamic demands of engineering graduates.

Given that the purpose of this inquiry was to enhance the subjects' English-speaking ability, it is anticipated that the results will have a significant positive impact on engineering students' future professional communication as it will help their ESP facilitators create a curriculum that is learner-centered and provide teaching in line with that curriculum.

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Visual Story Telling and Data Journalism:
A New Perspective in Higher
Education

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Abstract

This paper investigated a new perspective for course development in the fields of data journalism, visual arts, and data science as valuable tools for navigating information and knowledge in the digital age. Data-based journalism offers valuable tools for enhancing transparency, accountability, and fact-checking. However, the adoption of visual story telling perspectives in data journalism is related to factors such as lack of cross-disciplinary education, limited resources, and lack of technical skills. This paper delved into most recent dynamics both in the labor market and in the Higher Education sector as the trend towards professions and applied knowledge is clearly outlined for the Higher Education study programs, especially in the field of journalism studies. By focusing on the curricula development and modernization process in line with the European Union guidelines for Education, the paper addressed a cross-disciplinary perspective for Higher Education courses related to information technology, new media industry and digital culture. It designated a blueprint for the use, comprehension, and visualization of data in support of journalism studies programs to respond to the rapidly growing demand for cross-disciplinary teaching and co-research from fields such as data science, visual arts, and media communications, necessary to fruitfully operate both in the Higher Education sector and the labor market. Through a pilot study conducted at the Department of Humanities and Communication, the paper further identified challenges and opportunities for the implementation of a cross-curricular perspective in data science, visual arts and journalism and the need for the incorporation of real-world applications with the industry to increase student engagement in Higher Education courses.

Keywords: data journalism, Higher Education, data visualization, digital media, communication, curricula development

1. Introduction

Data-based communication represents a rapidly growing demand for multidisciplinary teaching and co-research from fields such as data science, computational statistics, data visualization, and media communications, necessary to fruitfully operate in the Higher Education sector and in the labor market. Interdisciplinary teaching in this direction presents an opportunity to apply and pass on new skills to students of media, communications, and graphic design. The aim of this paper is to provide a blueprint for bringing collaborative-research, course development and co-teaching expertise in the fields of data journalism and data science as valuable tools for navigating information and knowledge in the digital age. It follows on the greater objective of introducing and developing new curricula and course modules in data journalism in the programs of communication sciences at higher education post-graduate level.

Based on selected activities for collaboration from within these disciplines, applied in the Department of Humanities and Communication at the European University of Tirana in Albania, this working paper envisages a blueprint for bringing expertise in co-teaching, joint research papers, curricula and course development in Albania. Providing this is established as a long term approach, teachers and practitioners from different fields of study can potentially get involved in co-teaching activities in the interdisciplinary field of data science and data communication. It also introduces a multi- disciplinary approach for teaching data journalism based on combined methods of research in the fields of Data Science and Data Journalism, including computational statistics, data visualization and data analysis of media production and information practices.

The designing of the course content and syllabuses takes input from WebJou project (https://www.webjouproject.eu/) and JOULE Project (https://www.jouleproject.eu/). Based on interviews, questionnaires, and focus groups within the stakeholders, on each of the Western Balkan countries examined like Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Kosovo, Moldova, North Macedonia, and Serbia. An online questionnaire was done and disseminated in the Western Balkans. The questionnaire was divided into 3 sections, "Demographics and Introduction", "Data Journalism Skills and Tools" and "Acquisition and Development of Data Journalism related competences".

As Borges-Rey (2020) put it, "data journalists displayed a blend of journalistic and computational skills as they moved back and forth between the newshound and the techie approaches" (Borges-Rey, 2020: 929). Scholars relate data journalism with direct use

of diverse technologies and datasets in the field of data journalism that emerged in the 20th century with computer-assisted reporting and precision journalism (Anderson, 2018 in Ramsälv & Westlund, 2023).

Therefore, at the intersection of communication and computer science, this pilot study will explore data journalism through mixed methods such as automated data aggregation, visualization, and computer-aided content analysis. Additionally, the socio-technical perspective of journalism studies is brought through interviews and focus-groups with actors in the field of data journalism such as journalists, technologists, students, and educators, as well as experts and media professionals from the Market Labor Boards.

In collaboration with scholars from Visual Arts, Computer Science and Media Studies the aim is to develop new curricula and new courses for the interdisciplinary introduction of the fundamentals of data science in relation to media and communication in terms of visual storytelling, and data journalism courses at post-graduate level of studies, specifically in the new Master Program of Media and Digital Communication at European University of Tirana.

2. A blueprint of the pilot study: tools and instruments

Based on the different desk research of the WEBJOU consortium that European University of Tirana is a partner and contributor, data journalism as a concept is not often used in the Balkan region and it is still perceived mainly as investigative journalism. (https://www.webjouproject.eu/). Many countries don't have the resources, or technical skills and face some challenges in accessing reliable and comprehensive data. Also, the public's understanding and consumption of data-driven stories are influenced by factors like digital literacy levels and media consumption habits. When it comes to data journalism courses or data-related courses, there is still a lack of offers in all the regions. Although there are some offers of full courses in data journalism, most of the countries don't have a real data-related offer in Journalism courses (Bachelor's and Masters). Data-related subjects are still very connected to courses in data science, information and technology, and others. Many journalism professionals rely on initiatives given by private schools, or NGOs initiatives, with workshops and training in data analysis, data visualization, increasing media and information literacy. Journalism students who want to follow a DJ professional path must direct their Master studies on a data-related field or rely on the initiatives referred to above. Also, in the enterprise domain, the keyword "Data Journalist" does not exist in many countries of the region. Companies have some lack of knowledge about the necessary skills a journalist should have to perform data-related tasks within the field.

Therefore, there is still a lack of perception on what data journalism is and most of respondents admit to having a medium to low knowledge about the subject. One thing to note is that respondents do not think that programming languages and database knowledge are very important, whereas these skills are not being developed correctly in organizations since the development approaches taken seem to be lacking. This pilot study will help to identify which approaches should be considered or improved to develop these skills, such as internal career development (such as training modules for employees), training from external providers, undergraduate modules/courses related to data journalism (e.g., Bachelor's), placements/Traineeships within businesses and job shadowing (or internships) in other companies.

Furthermore, the educational offerings on data or data journalism are very few in some countries to non-existent in others, coming mainly from external sources, like foreign organizations/universities, or NGOs like BIRN and similar. When it comes to skills, there is some consensus on what skills are important for a journalist, to become a data journalist, or at least know how to work with data. Most skills are related to data ethics/data privacy, statistical/data literacy, data analysis, data visualization (charts, infographics, dashboards), data collection and cleaning, big data, graphic design, data storytelling, social media management, video/photo editor, content creation and research. As for tools, software and similar, the main ones are the data visualization tools, like MS Office (Word and Excel) and Google spreadsheets, Tableau, Power BI, there is also other like Wordpress. Overall, there is a mention on some programming languages like Python, R, and databases software, like SQL.

Based on these needs, this pilot study will serve to introduce a new perspective on Data Journalism courses in the sector of Higher Education in Albania. We are going to introduce two modules in Data Journalism and Data Visualization organized in the second semester of the first and second year of master studies. These are going to introduce the principles of data visualization and techniques, including charts and graphs, and best practices for creating effective visualizations with a focus on media presentation. Data visualization as a module is paired with New Media, organized in 14 weeks of lectures and seminars, 10 and 6 ECTS respectively. Through data collection and data cleaning as part of the data analysis process, students will learn how to pre-process and integrate data to their specific needs such as crafting journalistic articles with a focus on economics and finance, but also investigative journalism and human-interest storytelling.

Among the methodological tools necessary to the teaching and curricula development aspect of the project the most important are: Market studies with SWOT analysis; Focus groups with Members of the Labor Market Board that support the consolidation of the programs that they match with the demands of the labor market; Course Syllabuses consisting of learning material such as textbooks, recommended literature as well as inclusion of seminar methods and activities for students; Course Piloting and Focus Groups with students and staff; Assessment and Validation of Competences Methodology for the new modules introduced in the master studies programs; Evaluation of Products and Quality Assurance, as well as Dissemination, Implementation aspects and Impact Assessment of the new applications in the study programs.

First, Course Modules on data processing and visualization shall cover topics that are essential for creating effective visualizations and communication of the data collected and processed in accordance with the needs of the media organizations).

In the teaching weeks Data Journalism Module is paired with Mass Communication and Data Visualization as a module is paired with New Media, organized in six weeks and 36 teaching hours within the framework of 14 weeks of lectures and seminars in total, 10 and 6 ECTS respectively.

Students will be able to work independently applying the principles and techniques learned during the course to create and design a data visualization project and its presentation according to the requirements and needs of the field of communication and journalism / digital media, at the end of the course.

Lab work with students: we will also look at statistical techniques that have been used to produce interesting data-driven stories and visualizations in digital media. The modules should use real examples through various apps and videos related to the topic as well as case studies and exercises for independent work by students in the computer lab.

Preparing of participatory teaching material will start earlier than the teaching hours as this course needs audio-visual material that aims to show in concrete examples the steps that we must consider in the construction and visualization of data when writing journalistic articles or preparing news reports. Also, instructive videos are needed for the use of specific programs in data processing and visualization. Providing textbooks and recommended literature on data-journalism and data science implies also ordering and purchasing of the material at an earlier stage, to identify, select and approve a list of publications that continues to evolve in this field like for example:

1. Dougherty, J., Ilyankou, I. (2021) Hands-On Data Visualization: Interactive Storytelling from Spreadsheets to Code 1st Edition. O'Reilly Media; 1st edition;

2. Healy, K. (2018) Data Visualization: A Practical Introduction 1st Edition, Princeton University Press; 1st edition;

3. Milligan, J. N. (2022) Learning Tableau 2022: Create effective data visualizations, build interactive visual analytics, and improve your data storytelling capabilities. Packt Publishing; 5th ed. Edition;

4. Schwabish, J. (2021) Better Data Visualizations: A Guide for Scholars, Researchers, and Wonks. Columbia University Press, etc. (WP1 and WP3)

Table 2.1

Data visualization concepts and tools samples

PowerBI
Introduction
Overview of PowerBI and its capabilities
Importance of data visualization in academia
Benefits of using PowerBI for data analysis and reporting
Basic data transformations: filtering, sorting, and renaming columns
Two case scenarios with sample data.

Getting Started with PowerBI
- Installing PowerBI Desktop
- Interface overview: Ribbon, Navigation Pane, Fields Pane, and Report View
- Connecting to data sources (e.g., Excel, databases, web sources)
- Importing data into PowerBI
- Step by step guide to explain the points described

Sample data to perform calculations and measures; creating visualizations with data

Creating Visualizations   Integrated Tech Solutions

- Understanding the different visualization types (e.g., bar charts, line charts, pie charts, tables)
- Adding visualizations to the report canvas
- Customizing visualizations: formatting, titles, colours, and axes
- Creating calculated columns and measures for advanced analysis

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Building dashboards with different visualizations using sample from university database.

Building Interactive Dashboards
- Combining visualizations into a dashboard
- Adding slicers and filters for interactivity
- Configuring drill-through and drill-down functionality
- Best practices for designing effective dashboards.
- Building dashboards with different visualizations using sample from university database.

Conclusions

Putting this pilot study in a new perspective, as a collaborative approach in Higher Education, one important implication is related to the use of data collection and visualization, media literacy and media content analysis that are involved in activities of data journalism such as debunking of fake news, creation of digital media tools, promotion of digital skills, critical thinking, and competence in media content production. Another implication is related to co-research as computational mathematical tools can be used in analyzing large-scale data that naturally arise in journalism where there is an increased need to process accurately and comprehensively the fast-moving information. Data science techniques have direct applications in communication studies and may be used in analyzing large scale news- media data.

Therefore, this pilot study project will serve on one hand to develop new curricula and new courses for the interdisciplinary introduction of concepts of data science in relation to media, communication, and data journalism courses at post- graduate level of studies in the higher education sector, specifically in the Master Programs of Media and Digital Communication at European University of Tirana. On the other hand, it is an excellent opportunity to conduct interdisciplinary collaborative research and enlarge the scope of the departments' research work and its applications. Co-research is very helpful in incorporating data visualization and data journalism in the traditional curricula at the European University of Tirana. This perspective has been shared in the Albanian Studies Days International Conference that takes place at European University of Tirana in April each academic year, to follow-up the joint-research and publish in the faculties' scientific journals and undergoing the peer- review process.

In a nutshell, in this working paper it is identified the need for educational training and courses designed to the use, comprehension, and visualization of data especially in support of investigative journalism, but also in terms of fostering students' critical thinking and media literacy skills. University lecturers also need versatile teaching skills as well as developing new modules and participatory teaching material so that they can pass on media and digital skills to students. This pilot study project opens a path to this, as courses in data journalism are missing and there is a lack of research in this area.

In the long run this pilot study provides an opportunity for collaboration with colleagues from different fields of study to create, develop, and lead high-impact, large, and interdisciplinary scientific and teaching work that will have a positive impact in future developments of higher education in Albania. More specifically, it creates the possibility of further curricula development to include the multi-disciplinary approach in teaching of data- journalism. Through the implementation of a versatile and participatory teaching model based on the use of data technology and at the same time their critical analysis, the project offers both an analytical and practical perspective.

The strategic orientation of the Department and the Faculty where this project applies is already related to these technological developments, to meet the even greater need that the market has for communication and PR specialists related to digital expertise and online platforms. So, this project can help to further impact the innovation and optimization of the study programs in terms of the academic and professional offer in the market and in the field of communication studies in Albania.

This interweaving of knowledge in communication sciences with those in the field of information technology and data science, by integrating them into the framework of study courses and programs of master's studies, creates opportunities for specialization and sharpening of practical knowledge on the part of students, under the pressure of new markets and rapid developments in the digital age and in terms of internationalization and competitiveness of the Higher Education Institutions in Albania.

The collaboration between researchers and lecturers from different fields of study such as Communication Sciences, Information Technology, Data Science and Graphic Design or Visual Arts creates the possibility of including new course modules, developing existing study programs, building new study profiles within existing programs and introducing new study programs in accordance with the demands and needs of the professions and higher education market in Albania.

This collaboration will have concrete products and contributions that will become part of the Department's work portfolio for teaching within the multi- disciplinary approach that will be made available to students and lecturers on the Learning Management System platform (LMS). The laboratory practice, packages and applications used as well as audio-visual materials, focus groups results, research findings and data analysis will be stored as working packages in the system for use. The enrichment of the library and the list of books with new textbooks and new research material because of the cooperation will be incorporated into the new course syllabuses. The work will continue with the expansion of this collaborative perspective, in order to refresh the continuous learning curriculum of our study programs.

The Department of Communication at EUT will follow up this project that responds to the more dynamic needs of the market. The trend towards professions and applied knowledge is clearly outlined for the communication programs, so this project serves as the next step in strengthening of these study programs and opening of new profiles related to information technology, new media industry and digital culture.

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WEBJOU, Joint research project funded under the Erasmus+ Programme to create "WEstern Balkan higher educational courses in data JOUrnalism"; "Western Balkan higher educational courses in data JOUrnalism", https://www.webjouproject.eu/).

CONNECTION BETWEEN CHEBYSHEVIAN PRODUCTS IN AFFINE SPACE WITHOUT TENSOR

MUSA AJETI AND AGAN BISLIMI

Abstract

Let A_4 be a space with affine connections without tensor. We define the conjugated products $x \times \overline{x}$ and $y \times \overline{y}$ in A_4 and the third product $z \times \overline{z}$ with the help of affinors a_α^β, b_α^β and $\overline{c}_\alpha^\beta = i c_\alpha^\beta (i^2 = -1)$, where $c_\alpha^\beta = -a_\delta^\beta b_\alpha^\delta$. We find all connections Chebishevian-Chebishevian products (ch-ch). We found the affine connection defined as $\Gamma_{\alpha\beta}^\gamma (\alpha, \beta, \gamma = 1, 2, 3, 4)$, [?] [?]

Key words: Spaces of products (compositions), connection between products, affinors of compositions, affine spaces.

MSC 2010: 53A40, 53A55

1 INTRODUCTION

Let A_N be a space with symmetric connections without a tensor. Let us take the product $X_n \times X_m (n + m = N)$ of basic differentiable multiples in space A_N defined with the connection $\Gamma_{\alpha\beta}^\gamma$ For any point in space A_N the products $X_n \times X_m$ are two positions of basic multiples where we write them as $P(X_n)$ and $P(X_m)$ [ ]. Assignation of the product in space A_N is equivalent with the defined field of affinors $a_\alpha^\beta, b_\alpha^\beta, \overline{c}_\alpha^\beta$ that meets the conditions [?] [?] [?] [?]

$$(1) \qquad\qquad a_\sigma^\beta a_\alpha^\sigma = \delta_\alpha^\beta$$

Affinor a_α^β is called affinor of composition (product) [?] [?]. According to [?] and [?] the condition for the credibility of the structure is

$$(2) \qquad\qquad \nabla_{[\alpha} a^\gamma{}_{\beta]} = 0$$

Here I will explain two special cases of products of multiple bases with affinor, but I'll take also with tensor and I'll discus the Riemannian connection and Weyl connections in affine space [?] [?]

2   PRELIMINARIES

Let us take A_N a space with symmetric affine connection denoted by $\Gamma^{\gamma}_{\alpha\beta}$ ($\alpha, \beta, \gamma-$ connections coefficients). In A_N, we consider the products $X_n \times X_m (n + m = N)$ of two basic distinct multiples. The positions production (the tangents of the planes) have been denoted $P(X_m)$ and $P(X_n)$. [?] [?] [?] In the first case the product is defined by the affinor field a^{β}_{α} which satisfies the condition [?] [?]

Projective affinors $\overset{1}{a}{}^{\beta}_{\alpha}, \overset{2}{a}{}^{\beta}_{\alpha}$ [?] [?] [?] are defined as

$$\overset{1}{a}{}^{\beta}_{\alpha} = \frac{1}{2}\left(\delta^{\beta}_{\alpha} + a^{\beta}_{\alpha}\right); \overset{2}{a}{}^{\beta}_{\alpha} = \frac{1}{2}\left(\delta^{\beta}_{\alpha} - a^{\beta}_{\alpha}\right)$$

and satisfies the conditions

$$\overset{1}{a}{}^{\beta}_{\alpha} + \overset{2}{a}{}^{\beta}_{\alpha} = \delta^{\beta}_{\alpha} \ \text{ and } \ \overset{1}{a}{}^{\beta}_{\alpha} - \overset{2}{a}{}^{\beta}_{\alpha} = a^{\beta}_{\alpha}$$

In the second case related to the usual coordinates $u^{\alpha}(\alpha = 1, 2, 3, ..., n)$, in A_N the coordinates are defined as $u^i, u^{\bar{i}}$ where $(i = 1, 2, 3, ..., n)$ and $(\bar{i} = n + 1, n + 2, ..., n + m)$ which match the products $X_n \times X_m$ [?] [?]

For all vectors v^{α} we have $v^{\alpha} = \overset{1}{a}{}^{\alpha}_{\sigma} v_{\sigma} + \overset{2}{a}{}^{\alpha}_{\sigma} v_{\sigma} = \overset{1}{v}{}^{\alpha} + \overset{2}{v}{}^{\alpha}$ and

$$\overset{1}{v}{}^{\alpha} = \overset{1}{a}{}^{\alpha}_{\sigma} v^{\sigma} \in P(X_m)$$

$$\overset{2}{v}{}^{\alpha} = \overset{2}{a}{}^{\alpha}_{\sigma} v^{\sigma} \in P(X_n)$$

With adopted coordinates, affinor's matrices $a^{\beta}_{\alpha}, \overset{n}{a}{}^{\beta}_{\alpha}$ and $\overset{m}{a}{}^{\beta}_{\alpha}$ have this form [?][?].

$$a^{\beta}_{\alpha} = \begin{pmatrix} \delta^i_j & 0 \\ 0 & -\delta^{\bar{i}}_{\bar{j}} \end{pmatrix} \quad \overset{m}{a}{}^{\beta}_{\alpha} = \begin{pmatrix} \delta^i_j & 0 \\ 0 & 0 \end{pmatrix} \quad \overset{n}{a}{}^{\beta}_{\alpha} = \begin{pmatrix} 0 & 0 \\ 0 & \delta^{\bar{i}}_{\bar{j}} \end{pmatrix};$$

The products of the type $(Chebyshev, -)$ or $(Ch, -)$ or the products $(-, Ch)$ for which the positions $P(X_m)$ and $P(X_n)$ are turned in a parallel way along any multiple basic line (X_n) and (X_m) are characterized by the condition:

(3) $$\overset{2}{a}{}^{\sigma}_{\alpha}\overset{1}{a}{}^{\nu}_{\delta}\nabla_{\sigma}\overset{1}{a}{}^{\beta}_{\nu} = 0 \quad or \quad \overset{1}{a}{}^{\sigma}_{\alpha}\overset{2}{a}{}^{\nu}_{\delta}\nabla_{\sigma}\overset{2}{a}{}^{\beta}_{\nu} = 0$$

The products of the type (Ch, Ch) for which the positions $P(X_m)$ and $P(X_n)$ are turned in a parallel way along any multiple (X_n) and (X_m) respectively, are characterized by the conditions (??) and we have:

(4) $$a^{\beta}_{\alpha}\nabla_{[\alpha}a^{\nu}{}_{\sigma]} - a^{\sigma}_{\alpha}\triangle_{[\beta}a^{\nu}{}_{\sigma]} = 0$$

The products of the type $(Geo, -)$ or the products $(-, Geo)$ for which products the positions $P(X_m)$ and $P(X_n)$ are turned in a parallel way along any multiple line (X_m) and (X_n) characterized by the condition:

(5)
$$\overset{1}{a}{}^{\sigma}_{\alpha}\overset{1}{a}{}^{\nu}_{\sigma}\nabla_{\sigma}\overset{1}{a}{}^{\beta}_{\nu} = 0 \quad or \quad \overset{2}{a}{}^{\sigma}_{\alpha}\overset{2}{a}{}^{\nu}_{\delta}\nabla_{\sigma}\overset{2}{a}{}^{\beta}_{\nu} = 0$$

The products of the type (Geo, Geo) for which products the positions $P(X_m)$ and $P(X_n)$ are turned in a parallel way with basic multiples (X_m) and (X_n) characterized by the two condition from the relation (??) or by:

(6)
$$a^{\sigma}_{\nu}\nabla_{\alpha}a^{\beta}_{\sigma} + a^{\sigma}_{\alpha}\nabla_{\sigma}a^{\beta}_{\nu} = 0$$

According to [?] the positions $P(X_m)$ and $P(X_n)$ are turned in a quasi parallel way along the basic multiple lines (X_m) and (X_n) if the projected affinors fulfill the condition:

(7)
$$\overset{2}{a}{}^{\sigma}_{\alpha}\overset{1}{a}{}^{\gamma}_{\sigma}\nabla_{\sigma}\overset{1}{a}{}^{\beta}_{\nu} - \psi_{\sigma}\overset{1}{a}{}^{\sigma}_{\delta}\overset{2}{a}{}^{\beta}_{\alpha} = 0$$

$$or$$

$$\overset{1}{a}{}^{\sigma}_{\alpha}\overset{2}{a}{}^{\gamma}_{\sigma}\nabla_{\sigma}\overset{2}{a}{}^{\beta}_{\nu} - \psi_{\sigma}\overset{2}{a}{}^{\sigma}_{\delta}\overset{1}{a}{}^{\beta}_{\alpha} = 0$$

In [?] it is proven that with the help of the following coordinates with components φ_k and $\varphi_{\overline{k}}$ for the vector $\varphi_{\nu} = \frac{1}{2}a^{\sigma}_{\alpha}\nabla_{\sigma}a^{\alpha}_{\nu}$ differ from the vector ψ_k and $\psi_{\overline{k}}$ only by a constant.

Let us take the n-dimensional space A_{2N} formed with symmetric affine connections.

Let $\overset{\beta}{V}{}_{\alpha}$ $(\alpha = 1, 2, ..., 2n)$ be an independed vectorial field, and the reciprocal covector $\overset{\alpha}{V}{}_{\beta}$ are defined by:

(8)
$$\overset{\alpha}{V}{}_{\sigma}\overset{\sigma}{V}{}_{\beta} = \delta\alpha^{\beta} \iff \overset{\alpha}{V}{}_{\sigma}\overset{\nu}{V}{}_{\alpha} = \delta^{\nu}_{\sigma}$$

The connections coefficients (indications) are as follows

$$\alpha, \beta, \gamma, \delta, \nu, ... = 1, 2, ..., 2n$$
$$i, j, s, k, ... = 1, 2, ..., n$$
$$\overline{i}, \overline{j}, \overline{s}, \overline{k}, ... = n + 1, n + 2, ..., 2n$$

The projected affinors of the product $X_n \times \overline{X}_n$ are of the form [?] [?] [?] [?] [?] [?]

(9)
$$\overset{1}{a}{}^{\beta}_{\alpha} = \overset{\beta}{V}{}^{i}\overset{i}{V}{}_{\alpha}, \overset{1}{a}{}^{\beta}_{\alpha} = \overset{\beta}{V}{}^{\overline{i}}\overset{\overline{i}}{V}{}_{\alpha}$$

According to [?] the variable equations are valid

(10)
$$\nabla_{\sigma}\overset{\beta}{V}{}_{\alpha} = \overset{\nu}{T}{}_{\sigma}\overset{\beta}{V}{}_{\nu}, \quad \nabla_{\sigma}\overset{\alpha}{V}{}_{\beta} = -\overset{\alpha}{T}{}_{\nu}\overset{\nu}{V}{}^{\beta}$$

if we choose the vectors $\underset{1}{V}, \underset{2}{V}, \underset{3}{V}, ..., \underset{2n}{V}$ to be a net of the coordinates, we have

(11)
$$\underset{1}{V}{}^{\alpha}(1,0,0,...,0,0); \underset{2}{V}{}^{\alpha}(0,1,0,...,0,0); ...; \underset{2n}{V}{}^{\alpha}(0,0,0,...,0,1)$$
$$\underset{1}{V}{}_{\alpha}(1,0,0,...,0,0); \underset{2}{V}{}_{\alpha}(0,1,0,...,0,0); ...; \underset{2n}{V}{}_{\alpha}(0,0,0,...,0,1)$$

In our case the net $\underset{1}{V}, \underset{2}{V}, \underset{3}{V}, ..., \underset{2n}{V}$ is defines the system with adapted coordinates with the product $X_n \overline{X}_n$ in the space [?] . From the equations (??), (??) and (??) we can have the parameters of the coordinative net, and it is valid

(12)
$$\Gamma^{\sigma}_{\alpha\beta} = \underset{\beta}{\overset{\sigma}{T}}{}_{\alpha}$$

or

(13)
$$\Gamma^{\overline{k}}_{\overline{ij}} = \Gamma^{k}_{\overline{ij}} = 0$$

$R^{\nu}_{\alpha\beta\gamma}$ curves tensor in the space A_N [?] id defined as usually

(14)
$$R^{\nu}_{\alpha\beta\sigma} = \partial_{\alpha}\Gamma^{\nu}_{\beta\sigma} - \partial_{\beta}\Gamma^{\nu}_{\alpha\sigma} + \Gamma^{\nu}_{\alpha\rho}\Gamma^{\rho}_{\beta\sigma} - \Gamma^{\nu}_{\beta\rho}\Gamma^{\beta}_{\alpha\sigma}$$

3   CONNECTION FORMATION

Let us take coefficients of connections ${}^{1}\Gamma^{\sigma}_{\alpha\beta}$ defined as

(15)
$${}^{1}\Gamma^{\sigma}_{\alpha\beta} = \Gamma^{\sigma}_{\alpha\beta} + A^{\sigma}_{\alpha\beta}$$

where $A^{\sigma}_{\alpha\beta}$ is called *deformation tensor*. In the following we would consider ${}^{1}\nabla$ and ${}^{1}R^{\sigma}_{\alpha\beta\gamma}$ and the covariant of derivation as curvature tensor considering ${}^{1}R^{\gamma}_{\alpha\beta}$

3.1   Connections in Chebyshevian products

Let A_{2n} be intertwined (with net) with products $X_m \times X_n$ of (Ch, Ch) type. Then the following theorem holds:

THEOREM 3.1. *Let $X_m \times X_n$ product be a Chebishevian product $\nabla_{[\alpha}a^{\sigma}{}_{\beta]} = 0$. Than ${}^{1}\nabla_{[\alpha}a^{\sigma}{}_{\beta]} = 0$ holds if and only if when with product with adapted coordinates of deformation tensor tensor $A^{\nu}_{\alpha\beta}$ meets the condition*

(16)
$$A^{k}_{i\overline{j}} = A^{\overline{k}}_{ij} = A^{\overline{k}}_{[ij]} = A^{k}_{[\overline{i},\overline{j}]}$$

Proof. We know that from (??) we have:

(17)
$${}^{1}\nabla_{[\alpha}a^{\sigma}_{\beta]} = \nabla_{[\alpha}a^{\sigma}_{\beta]} + A^{\sigma}_{\alpha\beta}$$

whereas

(18)
$$A^\sigma_{\alpha\beta} = L^\nu_{\alpha\beta}a^\nu_\sigma - L^\nu_{\beta\sigma}a^\sigma_\alpha - L^\sigma_{\alpha\beta}a^\nu_\sigma - L^\sigma_{\beta\alpha}a^\nu_\sigma$$

According to (??) and (??) in adapted coordinates for components of tensor $A^\nu_{\alpha\beta}$ we get:

(19)
$$A^k_{ij} = 2L^k_{\overline{j}i}, \ A^k_{i\overline{j}} = -2L^k_{i\overline{j}}$$
$$A^{\overline{k}}_{i\overline{j}} = -2L^k_{\overline{j}i}, \ A^{\overline{k}}_{i\overline{j}} = 2L^{\overline{k}}_{\overline{j}i}$$
$$A^{\overline{k}}_{ij} = 4L^k_{[ij]}, \ A^k_{\overline{i}\overline{j}} = -4L^k_{[\overline{i}\overline{j}]}$$
$$A^k_{ij} = A^{\overline{k}}_{\overline{i}\overline{j}} = 0$$

According to (??) we conclude that $\nabla_{[\alpha}a^\sigma_{\beta]} = 0$ and ${}^1\nabla_{[\alpha}a^\sigma_{\beta]} = 0$, if must needs $A^\gamma_{\alpha\beta}$, than from (??) we get that the last condition is equivalent with (??), which means that the theorem is proved. $\square$

Than we can take the case when $\nabla_{[\alpha}a^\sigma_{\beta]} = {}^1\nabla_{[\alpha}a^\sigma_{\beta]} = 0$ From (??), (??) and (??) we obtain the connections ${}^1\Gamma^\sigma_{\alpha\beta}$ as following:

(20)
$${}^1\Gamma^k_{ij} = \Gamma^k_{ij} + A^k_{ij}; \ {}^1\Gamma^{\overline{k}}_{\overline{i}\overline{j}} = \Gamma^k_{\overline{i}\overline{j}} + A^{\overline{k}}_{\overline{i}\overline{j}}$$
$${}^1\Gamma^{\overline{k}}_{ij} = {}^1\Gamma^{\overline{k}}_{ji}; {}^1\Gamma^k_{i\overline{j}} = {}^1\Gamma^k_{\overline{j}i}$$
$${}^1\Gamma^k_{i\overline{j}} = A^k_{i\overline{j}}; {}^1\Gamma^{\overline{k}}_{i\overline{j}} = A^{\overline{k}}_{i\overline{j}}$$
$${}^1\Gamma^k_{i\overline{j}} = {}^1\Gamma^{\overline{k}}_{ij} = 0$$

We consider connections of curvature ${}^1\Gamma^\sigma_{\alpha\beta}$ by using (??) and (??) with the following adapted components ${}^1R^\gamma_{\alpha\beta\sigma}$ and we have:

(21)
$${}^1R^s_{ij\overline{k}} = R^{\overline{s}}_{\overline{i}\overline{j}k} = 0$$
$${}^1R^s_{ij\overline{k}} = 2\partial_{[i}A^k_{\overline{j}]s} + 2A^k_{[i|p|}A^p_{\overline{j}]s}$$

Than we take Weil's connections $\Gamma^\sigma_{\alpha\beta}$ with the fundamental tensor $g_{\alpha\beta}$ in addition the convector ω_σ.
ω_σ meets the condition $\nabla_\sigma g_{\alpha\beta} = 2\omega_\sigma g_{\alpha\beta}$ According to [2,4,7,9,11] we have:

(22)
$$\Gamma^\sigma_{\alpha\beta} = \left\{{}^\sigma_{\alpha,\beta}\right\} - \left(w_\alpha\delta^\nu_\beta + w_\beta\delta^\nu_\alpha - w_\sigma g^{\sigma\nu}\right)g_{\alpha\beta}$$

we know that $g_{\alpha\beta} \cdot g^{\beta\sigma} = \delta^\sigma_\alpha$

$\left\{{}^\sigma_{\alpha\beta}\right\}$ are the Christoffel's symbols $g_{\alpha\beta}$

For tensor of curvature $R^\gamma_{\alpha\beta\sigma}$ the following equation holds

(23)
$$R^\gamma_{\alpha\beta\sigma} = -2P\nabla_{[\alpha}w_{\beta]}$$

we have

(24) $$^1R^\nu_{\alpha\beta\sigma} = R^\gamma_{\alpha\beta\sigma} + 2P\nabla_{[\alpha}A^\sigma_{\beta]}\sigma$$

If we take the deformation tensor $A^\sigma_{\alpha\beta}$ which is

(25) $$A^\sigma_{\alpha\beta} = w_\alpha a^\sigma_\beta$$

For adapted coordinates we get:

(26) $$A^k_{ij} = w_i\delta^k_j, A^{\overline{k}}_{i\overline{j}} = w_{\overline{i}}\delta^{\overline{k}}_{\overline{j}}$$
$$A^k_{\overline{i}j} = w_{\overline{i}}\delta^k_j, A^{\overline{k}}_{i\overline{j}} = w_{\overline{i}}\delta^{\overline{k}}_{\overline{j}}$$
$$A^k_{ij} = A^{\overline{k}}_{ij} = A^{\overline{k}}_{ij} = A^k_{\overline{i}j} = 0$$

Equations (??) with given A^k_{ij} meet the necessary and sufficient condition also Theorem ??. For adapted coordinates holds for (??) and (??)

(27) $$^1R^\alpha_{ij\alpha} =^1 R^\alpha_{ij\alpha} =^1 R^\alpha_{\overline{i}j\alpha} = 0$$

3.2   Products with 2-manifold in geodesic products

Let A_N be a $(Geo - Geo)$ space with $X_m \times X_n$ products and we should consider the connection in the space $\Gamma^\sigma_{\alpha\beta}$ defined in (??).

THEOREM 3.2. *Let the product $X_m \times X_n$ be geodesic $a^\sigma_\alpha\nabla_\beta a^\nu_\sigma + a^\nu_\beta\nabla_\sigma a^\nu_\alpha = 0$, with adapted coordinate's conditions, than the tensor defined as $g^\nu_{\alpha\beta}$ meets the condition:*

(28) $$q^k_{\overline{i}j} = q^{\overline{k}}_{ij} = 0$$

Proof. Considering $a^\sigma_\alpha \cdot a^\beta_\sigma = \delta^\beta_\alpha$ and defined connections $^1\Gamma^\nu_{\alpha\beta}$ as $^1\Gamma^\nu_{\alpha\beta} = \Gamma^\nu_{\alpha\beta} + g^\nu_{\alpha\beta}$ than we have:

(29) $$a^\sigma_\alpha\,^1\nabla_\beta a^\nu_\sigma + a^\nu_\beta\,^1\nabla_\sigma a^\nu_\alpha = a^\sigma_\alpha\nabla_\beta a^\nu_\sigma + a^\nu_\beta\nabla_\sigma a^\nu_\alpha + h^\nu_{\alpha\beta}$$

where

(30) $$h^\nu_{\alpha\beta} = q^\nu_{\beta\alpha} - q^\rho_{\beta\sigma}a^\sigma_\alpha a^\nu_\rho + q^\nu_{\sigma\rho}a^\rho_\alpha a^\sigma_\beta - q^\rho_{\sigma\alpha}a^\nu_\rho a^\sigma_\beta$$

With adapted coordinates according to (??) we evaluate the components of connections $h^\nu_{\alpha\beta}$ as following:

(31) $$h^{\overline{k}}_{ij} = 4q^{\overline{k}}_{ji}, h^k_{\overline{i}\overline{j}} = 4q^k_{\overline{j}\overline{i}}$$
$$h^k_{ij} = h^k_{\overline{i}j} = h^k_{i\overline{j}} = h^{\overline{k}}_{i\overline{j}} = h^{\overline{k}}_{\overline{i}j} = h^k_{\overline{i}\overline{j}}$$

Equations in relations (??) and (??) to be adapted with $X_m \times X_n$ products which is geodesic, than the following holds: $a_\alpha^\sigma {}^1\nabla_\beta a_\sigma^\nu + a_\beta^\sigma {}^1\nabla_\sigma a_\alpha^\nu = 0$, if and only if $h_{\alpha\beta}^\nu = 0$

From equation (??) the last condition holds if $g_{i\,\overline{j}}^k = g_{ij}^{\overline{k}} = 0$, which satisfies the condition to proof the theorem. $\qquad\qquad\qquad\square$

From conditions $a_\alpha^\sigma \nabla_\beta a_\sigma^\nu + a_\beta^\sigma \nabla_\sigma a_\alpha^\nu = 0$, and $a_\alpha^\sigma {}^1\nabla_\beta a_\sigma^\nu + a_\beta^\sigma {}^1\nabla_\sigma a_\alpha^\nu = 0$

$$(32) \qquad\qquad a_\alpha^\sigma {}^1\nabla_\beta a_\sigma^\nu + a_\beta^\sigma {}^1\nabla_\sigma a_\alpha^\nu = 0$$

by applying (??) we get these equations:

$$(33) \quad \begin{aligned} &{}^1\Gamma_{ij}^k = \Gamma_{ij}^k + g_{ij}^k; {}^1\Gamma_{\overline{i}j}^k = \Gamma_{ij}^k + g_{ij}^k; {}^1\Gamma_{i\overline{j}}^k = \Gamma_{ij}^k + g_{ij}^k \\ &{}^1\Gamma_{ij}^{\overline{k}} = \Gamma_{ij}^k + g_{ij}^{\overline{k}}; {}^1\Gamma_{\overline{i}\,\overline{j}}^k = \Gamma_{ij}^k + g_{ij}^{\overline{k}}; {}^1\Gamma_{i\overline{j}}^k = \Gamma_{ij}^k + g_{i\overline{j}}^k \\ &{}^1\Gamma_{\overline{i}j}^{\overline{k}} = \Gamma_{ij}^{\overline{k}} + g_{ij}^{\overline{k}}; {}^1\Gamma_{i\overline{j}}^k = \Gamma_{i\overline{j}}^k + g_{ij}^{\overline{k}}; {}^1\Gamma_{i\overline{j}}^k = \Gamma_{i\overline{j}}^k + g_{i\overline{j}}^k \\ &{}^1\Gamma_{ij}^k = {}^1\Gamma_{ij}^k = 0 \end{aligned}$$

From equations (??) and (??) for adopted components of the tensor ${}^1R_{\alpha\beta\gamma}^\nu$ we have

$$(34) \qquad\qquad {}^1R_{\overline{i}\,\overline{j}\,\overline{k}}^s = {}^1R_{ijk}^{\overline{s}} = 0$$

we consider that $\Gamma_{\alpha\beta}^\gamma$ has a connection called *eco-affine*

$$(35) \qquad\qquad \Gamma_{ks}^s = \partial_k \ln e$$

equal affinor with main density "e", and it is equivalent to:

$$(36) \qquad\qquad \Gamma_{\alpha\beta}^\nu = \partial_\alpha \ln e \iff R_{\alpha\beta\gamma}^\nu = 0$$

then $X_m \times X_n$ is geodesic-geodesic (geo-geo), if

$$(37) \qquad R^{\sigma\nu}\overline{R}_{\beta\nu}\nabla_\alpha\left(\overline{R}_{\alpha\beta}R^{\sigma\beta}\right) + \overline{R}_{\alpha\sigma}R^{\beta\nu}\nabla_\sigma\left(\overline{R}_{\beta\nu}R^{\alpha\sigma}\right) = 0$$

from (??) and (??) $S \in {}^1\Gamma_{\alpha\beta}^\nu = grad$, if and only if $g_{\alpha\beta}^\nu = grad$ and

$$(38) \qquad\qquad {}^1R_{\alpha\beta\gamma}^\nu = 0$$

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