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Editor's Preface

The second issue of *The New Educational Review* in 2021 is the sixty fourth issue of our journal since its foundation in 2003. In this issue, there are papers from: the Czech Republic, India, Indonesia, Lithuania, Pakistan, Philippines, Poland, Serbia, Slovakia, Slovenia, South Korea, and Ukraine because our journal is open for presentation of scientific papers from all over the world.

In the present volume the International Editors’ Board has proposed the following subject sections: Social Pedagogy, General Didactics, Pedeutology, Special Pedagogy, and Chosen Aspects of Psychology.

In “Social Pedagogy” eight articles are included. The article by Katarzyna Krasoń offers a proposal for using films as supplements for future therapists’ education in respect of the social construction of their relations with patients. The aim of the paper by Maria Banaś is to analyse the influence of Stanisław Lem’s works, an outstanding representative of Polish science fiction, philosopher and futurologist, on the shape of reality in which we currently function. The purpose of the qualitative study conducted by Alicja Gałązka and Joanna Jarosz is to diagnose the role of educational coaching in stimulating the well-being of teachers during the pandemic of Covid-19. In his article Krzysztof Rubacha presents the findings of an experimental study, the goal of which is to compare the average evaluation scores of university teachers given by students on the basis of the manner of delivering lectures and organising the teaching process at the university. The study conducted by Saira Farooq Shah and her co-workers explores the correlation between social media usage and undergraduate students’ psychological well-being in Mirpur, Azad Jammu and Kashmir, Pakistan. In their research Jiří Kantor and Miroslav Chráska examine theoretical influences and therapeutic trends prevalent in Czech educational institutions. Iryna Zbyr highlights an experimental study and pilot stereotype-oriented teaching aimed at an effective perspective of Korean and Ukrainian intercultural communication. In his research Bilal Ahmad Bhat investigates the influence of the place of living on psychological well-being of
students studying in senior secondary schools and examines interaction effects of
the place of living and academic achievement on psychological well-being.

In “General Didactics” five articles are included. The aim of the research by A.
Halim et al. is to analyze anxiety, knowledge, and belief toward e-learning accept-
ance, especially by science teachers in high schools in Aceh, Indonesia. Małgorzata
Biedroń, Anna Mitręga and Mirosława Wawrzak-Chodaczek present in their arti-
cle the results of empirical research on remote classes at Polish universities during
the Covid-19 pandemic. The aim of the research conducted by Jolita Dudaitė and
Rūta Dačiulytė is to compare the situation of lifelong learning in Central Euro-
pean countries. The paper by Maria Leshchenko and her co-workers presents the
framework of the assessment of digital educational resources for students who are
engaged in autonomous personalized learning. In their article Iryna Kozlovská,
Iryna Savka and Oleh Stechkevych demonstrate the expediency of integrating
knowledge of structure and properties of substance and building materials. The
study was conducted in vocational-technical school in Ukraine.

In “Pedeutology” four articles are included. The article by Alla M. Kolomiiets
et al. reveals the opportunities, types of organization and ways to use the citizen
science results at the Pedagogical University in Vinnytsia, Ukraine. Valentina
Gavranović and Marijana Prodanović report on the results of interviews con-
ducted with ESP teachers examining their attitudes towards different aspects of
online language teaching. Using the transcendental phenomenological approach
in research Genesis B. Naparan and Asmaira I. Gadong explore the experiences
of eight teachers in Malangas Special Education Center, Poblacion, Zamboanga,
Sibugay, Philippines. Stanisław Juszczyk and his co-workers present partial results
of research carried out within the VEGA 1/0913/15 project on Media Literacy of
Young School-Age Children in the Context of Family and School Cooperation.
The study also analyses the need to develop digital literacy, which is part of the
VEGA 1/0748/20 project on Diagnosing Digital Literacy of Primary School
Teachers in the Context of Undergraduate Training and Educational Reality.

In “Special Pedagogy” four articles are included. The article by Olha Telna and
her co-workers evaluates the quality of inclusive education in Ukraine, specifically
focusing on services provided to families of students with disabilities whose views
and opinions are often neglected by governmental officials responsible for creating
inclusive environment. The purpose of the study by Nina Volčanjk and Dragica
Haramija is to analyse differences in speech, language and communication skills
between students with mild intellectual disabilities using a narrative text written
in easy-to-read text (experimental group), and students with mild intellectual
disabilities using a book containing the same content but written in ordinary text
(control group). The results of the research conducted by Małgorzata Zaborniak-Sobczak indicate the heterogeneity of hearing children of deaf parents (koda) in the development of language in context of special educational needs. Natalia Babych and Kateryna Tychyna determine how nonverbal and verbal dysfunctions in preschool children are associated with severe speech disorders.

In “Chosen Aspects of Psychology” two articles are included. The paper by Anida Vrcic, Milena Belic, and Djerdji Erdes-Kavecan explores the relation of concern, pessimism and neuroticism in two groups of young people, students in their final year of high school, and senior undergraduates of different faculties. The purpose of the paper by Olena Lazurenko and Nataliya Smila is to present the results of testing the emotional intelligence of the future physicians who tend to hide professional mistakes.

We hope that this edition, like the previous ones, will encourage new readers, not only from Central and Eastern European countries, to participate in open international discussion. On behalf of the International Editors’ Board I would like to invite representatives of different pedagogical sub-disciplines and related sciences to publish their texts in The New Educational Review. The essential publishing requirements are to be found on our website: https://tner.polsl.pl – For Authors.
Social Pedagogy
From an Individual to a Group –
Film Stories about Building Interpersonal Relationships in Therapy

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Abstract
This article offers a proposal for using film as supplements for future therapists’ education in respect of the social construction of their relations with patients. A film pedagogy proves indispensable in a pandemic situation, when empirical therapeutic practice becomes impossible. The analysis refers to the concepts of pedagogy of cinema and mediated experience and points to a proposal of an exemplification of their functioning in the form of a selected cinematic picture (“Three Christs”, 2017), based on an actual psychotherapeutical experiment undertaken by Milton Rokeach at the Ypsilanti clinic.

Keywords: pedagogy of cinema, film models of therapeutic work, mediated experience

Introduction
The recent search for ways of teaching with online tools, resulting from the pandemic situation, has led to reaching for alternative modes of exemplifying reality. One of such modes is, undoubtedly, the use of material drawn from cinema, particularly from films based on real events. Such films are instances of audio-visual narration revealing factual realities, including people’s behaviours, decisions and choices. As an element of pop culture and of the ubiquitous visual culture (Denzin, 1995), film is for young people a natural way of penetrating social phenomena. It becomes this vehicle of cognition because it enables a deeper understanding of
human emotions, especially – as pointed out by William Benedict Russell (2009, p. 1-4) – thanks to its potential of evoking emotions. Moreover, young students of pedagogy, who utilise films in their education, have significant experience in the world of digital media. They themselves make videos with cameras in their smartphones, documenting the events that surround them. This is why film is one of their basic routes of accessing and communicating information. Thus, the use of film in university classes has proven obvious, and the audio-visual material is used in the context of its applicatory possibilities for real life and refining critical thinking (Russell 2009).

Stories brought to screen show directions of thinking and argumentations represented by the characters, particularly the protagonists. They force the receiver to undertake reflection, but also constitute quite an important space for the creation of mediated experience, which activates compensation or the working-through of traumatic experiences (I describe it in much detail: Krasoń, 2020). This experience – even though somehow second-hand – brings, among others, a chance, important from the perspective of my considerations, of satisfying the need for participation in other people’s lives, but also for discovering meaning for oneself.

This article is an attempt at joining the film and special pedagogy, and presents the discussion is primarily based on references to the role of the therapist in the process of therapy consider recognizing film example in creating a relationship with the patient. The hermeneutic analysis of a problem and the description of an individual patient-oriented therapeutical intervention undertaken as a result thereof are to prove a primary field in my description of film proposition.

The need for participation in others’ lives – mediated experience

A human being seeks opportunity for participation in other humans’ lives, doing it, maybe in the most complete way, by listening to/watching/perception of stories. In the case under discussion here, the stories are not told from a stage, but from a screen. As Jerome Bruner said, storytelling is the earliest and – let us add – the most natural/inborn method of organising experience and knowledge for humans (Bruner, 1996, p. 121), for stories are tools of our mind and serve the function of creating meaning (Bruner, 1996, p. 41). Storytelling and relating narratives has, therefore, a developmental and a modifying value, because it consists in breaking experience down into very simple elements; people consider experiences broken down in such a manner to be their own and subsequently use them to
measure and judge their own place in the world. Contemporary society has a very strong need for telling and sharing stories (Wellins, 2005). A story, then, brings one orientation in every dimension, also the axiological one. This function used to be served by literature, now the duty of storytelling is being taken over by cinema. The viewer seeks mediated experience¹ – using it as a compensation, which is also of certain significance in development support. For the function of the story is not only that of providing a narrative framework for one’s own experience, but also of stimulating change through reflection, a rediscovery of meanings and a re-evaluation of the world.

Such experience becomes possible thanks to the functioning of the so-called mirror cells (neurons), discovered in the 1990s, located in the prefrontal cortex (the same area which is reported to be the seat of consciousness). According to V.S. Ramachandran, “mirror neurons will do for psychology what DNA did for biology” (Marsh, 2012), they will open whole new fields of cognition and exploration. Those cells enable recognising another human’s emotions, a “mind-reading”, i.e. compassion and understanding of an observed person’s feelings. Thus, watching a film will constitute a chance for penetrating the protagonist’s thoughts. While observing other people, we can intuitively feel that they have an inner life resembling ours, (Keysers, 2011). Watching the protagonist and owning the emotions which the character is experiencing, the viewer may feel control and find relief from their own anxiety. At the same time, the viewer finds relief from tensions, which might translate into a feeling of catharsis. If we treated the term literally, as the ancient Greeks used it, it would denote purification by vomiting. Currently, we adopt a less trivial explanation, for we understand the word to denote an emotional purification, reaching calmness or an emotional breakthrough (Vogler, 2008, p. 203). This results in an increase in well-being and sublimation of tensions, and all that thanks to mediated transmission.

There is one more component that must be mentioned in this context. Namely, the reflection which helps modify one’s mode of acting takes place in the veiled and safe space of film metaphor, which does not require physical engagement.

¹ David Dobbs’ concept of mirror cells is interesting in the context of experience gathered through cultural transmission (Dobbs, 2006, p. 22–27). Discovered in people in 2005, the cells enable recognizing another human’s emotions, compassion and understanding of feelings – mirror neurons are activated in human beings regardless of whether they actively participate in events, only witness them, or merely listen to their description. The process of reception – in our case, pertaining to a film – activates representations as if they were real, e.g. causes suitable somatic reactions.
Such a situation enables us to observe, inquire or “even imitate without taking social risk” (Abrahams, 2001, p. 51).

Moreover, after a screening, nobody will, after all, ask you what you want to change, nobody will require you to undertake any activity – the viewer takes the decision themselves. What is more, such a view from the side-lines might oftentimes be more significant than we could expect. Referring Daniel Schorr’s thought, Roger D. Abrahams will say – non-engagement made me feel the situation to be more real (Abrahams, 2001). A work of cinematography is a phenomenon of its own kind, for though it creates a field of illusory perception, it still is created with “light shed” by real phenomena, conditioning real people (Metz, 1982, s. 53). This is why the implications it begets are so significant for the receiver and seem to tell probable stories.

Therefore, virtually participating in a situation in which the film hero fights obstacles on their way, we have a chance to compensate a lack of more powerful emotions in our own existence, as well as to feel pleasure brought about by the protagonist’s success. Mediated experience will fill in the void, but it will also force us to analyse our own life.

One may go further and indicate, as Catherine Zimmer suggests, that film – whether we want it or not – begins to enjoy its own position in the shaping of modern forms of identity and identification (Zimmer 2011, p. 439). Those forms, unfortunately, have their dichotomic areas reaching both the normative and the deviant. Nevertheless, such a dichotomy might additionally provoke debate during academic analysis of a work, thus providing added value for the education of future pedagogues-therapists.

The appearance of the concept of applying the methods of psychiatry or psychoanalysis for a reinterpretation of the content matter of a film (Cole, Bradley 2016, s. 5) remains a meaningful event. The concept is based on fears related to an observed propensity for social madness which can – fortunately – be depicted in a plot pattern, which in turn makes it available for understanding, all that translating into the essence of cinema pedagogy – as David R. Cole and Joff P.N. Bradley see it. This constatation is of utmost significance for my argumentation.
On-screen therapy, i.e. “Three Christs”

In this text, I would like to claim for film characters their due place in the education of therapists-to-be. The reason for this is that – out of the necessity of distance teaching – I discovered the unique potential of inspiring and competence-shaping with respect to administering therapy, especially creating the therapeutical relationship, present in in-depth analysis and criticism of actions to be found in a film story. What proved particularly valuable were screenings based on recreations of authentic persons or events and ones documenting development support for persons with disabilities/dysfunctions or going through difficult moments in life provided by exceptional therapists. Naturally, it is a rule for a film to use exaggeration and hyperbole in the case of certain threads, yet the idea and the main message remain unchanged. And even though those films are fiction, yet their characters and events had their real-life prototypes, which endows them with exemplifying power for a discovery of the significance of a therapist’s presence in the process of supporting a person with disability in their development. It is, then, a lesson for students who wish to become therapists, which not only shows particular phases/stages of the therapeutical process, but also – most importantly – poses questions and forces one to discover meanings veiled in film metaphor. As Kelvin Shawn Sealey said – film opens up intellectual space, thus becoming a catalyst for discussion (Sealey, 2008, p. 8). It also encourages polemics, which results in the receivers formulating their own opinions and beliefs. It teaches one one’s trade, though metonymously and using illusions – but based on strong indication of factually existing phenomena, it is, to an extent, like a flight simulator for a pilot. It shows possible or hypothetical situations or sometimes – as in the case of the film I chose – provides an interpretation of factual events.

The film was based on a book by Milton Rokeach, a social psychologist of Polish descent – “The three Christs of Ypsilanti” (1964), describing a controversial experiment which involved placing three men at the State Hospital in the titular town of Ypsilanti: Clyde Benson (an alcoholic suffering after his parents and wife had died), Joseph Cassel (convinced he is going to be poisoned and fruitlessly attempting to become a writer – Peter Dinklage, brilliant in the part) and Leon Gabor (one who hears voices and lives with a fanatically religious mother), all three

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3 Rokeach was born in Hrubieszów as Mendel Rokicz, author of the “Review of General Psychology” (2002), one of the most-quoted psychologists of 20th century. Creator of the Values Scale.
paranoid schizophrenics and all three believing themselves to be Jesus. Designing a clash of the three characters claiming to be messiahs, which is a challenge in itself, the researcher wanted to lead to a revision of their beliefs, holding that the final contradiction of the multiplication of the same identity being declared would move the three men and encourage them to change. As it had been expected, each of the patients denied the others their divinity, rationalising the existence of the “divinity of the others”, yet they did not resign from their own qualification placing them in the role of Christ.

The film, however, reaches beyond the book and shows precise procedure of working with the three patients. This seems to be a case of schizoanalysis created by Ronald David Laing, a researcher who worked in schizophrenia and co-founder of anti-psychiatry⁴. The patients spend time together and the session begins with them singing together, one of them assuming the position of the leader who initiates the song. Rokeach, in the film represented as Dr Stone played by Richard Gere, wants to provide them with an alternative to lobotomy, electroconvulsive therapy and pharmacotherapy which consists of both confrontation and co-operation. The viewer can observe the transformation – even though the essence of their disorder is not erased (they will not cease to identify as the Absolute), the three hostile persons are transformed into co-operating patients. One observable aspect of the transformation is the group’s proxemics: during the first session shown in the film, they are sitting with their backs turned to each other, hostile, unwilling to make any contact, not maintaining eye contact, while 2 years of therapy render them able to communicate face to face. We can even witness a moment when Joseph is cutting Clyde’s nails, Leon patting him on his shoulder as he knows how difficult it is, Clyde fearing physical contact. The whole scene is an exceptional confirmation of the effectiveness of the therapy they received. They are also capable of initiating a session in the therapist’s absence, handing out the sheets with the music and the words of the initial song themselves. Leon goes as far as to rewrite the score for Clyde enlarging the contents so that it is easier for him to read it. They have become a team of persons responsible for one another, even though each of them continued to “be Christ”. In spite of the hugely traumatic experience that follows (Joseph committing suicide dying for somebody, in an act of self-sacrifice, as is the

⁴ The main point Laing made was the assumption that schizophrenics would behave differently depending on the environment they were in, which is why patients in the so-called rumpus room could play, relax, and spend time on activities they enjoyed, including arts-related ones. See the Kingsley Hall project (Laing 1971).
From an Individual to a Group

destiny of the Redeemer), the other two schizophrenics do not lose their trust in Dr Stone and wish to continue therapy with him in New York.

Above all, however, the film poses questions about the limits of responsibility for a patient and the resulting acceptable risk in experiments with human participants. A character with a scientific background says to the therapist: “Your work is innovative, ingenious and dangerous. Please decide yourself whether the benefits outweigh the risk.” It is the risk that it is worth asking students about, in order to discuss the matter of the patient’s well-being and safety. I believe that there are no simple and unambiguous answers here, it will always be crucial to seek a profit and loss balance. But is such a search still within the sphere of a therapist’s ethicality?

Another matter of undoubted importance is the acceptance of lie with the purpose of helping the ill, deceiving them so that they feel appreciated and seen. The issue in question is forging letters apparently written by the head of the hospital performed by Betty, Dr Stone’s assistant. Joseph had been addressing hundreds of letters to the head of the hospital: ones postulating changes in therapy, requests for referring him to England or complaints, but the letters would remain unanswered, which made him feel ignored. The therapist decides that they are a way of reaching the patient and – pretending to be the head, Dr Orbus, about which he is informed – together with his assistant, he creates special correspondence with the three men. This exchange of letters brings interesting reactions and leads to modifications in the Christs’ behaviours, yet the question about deception is not answered here, thus becoming an interesting field for students to analyse and evaluate. And the aim is not to reach readymade procedures or prescriptions for intervention design thanks to an image of thoughts captured in pedagogy of the image – as Garin Dowd (2010) calls those categories after Daney – but to consider and ponder upon particular aspects of an intervention appearing on screen. For the purpose is to analyse and consider a possible world, not to build a conceptual absolutism or a self-fulfilling prophecy with respect to transformation and description of that which can be seen in a film (Cole, Bradley 2016), so that it always fits the excessively codified pattern of identifying the problem we are dealing with.

From the perspective of therapy, the scenes devoted to creating a bond with the therapist, based on conversation and dialogue marked by understanding and facilitation, are particularly valuable. This is an example:

Joseph: You sent me from the currents, I am ever so grateful. This is a gift – the most beautiful arias.
Stone: Thank you.
Joseph: No, no, I am not giving them to you... [looking at the smiling therapist] Please put them on.

Stone [putting the record on]: I would like to help you, Joseph. Joseph: Please address me properly – the one and true Jesus Christ. Stone: Jesus died long ago. Joseph: You are wrong. [They are both listening to the first sounds of the aria, Joseph is clearly moved and delighted]: Please listen to (...) singing a fragment of Bizet's “Pearl Fishers” opera [the patient can be seen to luxuriate in every sound].

The doctor does not create any disturbance, he does not interrupt the moment with conversation, does not insist on the patient abandoning his delusion, but he is with Joseph in the state of intense listening. It is only such co-existence and compassion that will safeguard for the patient a capability of using his humanity to the maximum – condition humaine (Kępiński 2015, p. 334).

In this respect, then, the film might be an excellent exemplification of Antoni Kępiński’s thought, for it draws one’s attention to the fact that the style of verbal expression is a significant indicator of the speaker’s attitude to their interlocutor. It is quite meaningful that, as quickly as after a few sessions/conversations, an attentive and engaged therapist is able to use the patient’s verbal communication to establish the scope of their emotional relationship with their surroundings, situations and events (Kępiński 2002), but, which is of some importance, also with themselves. The therapist’s conversations in the film are not over sweetened, but they provide a basis for indicating opportunities to learn about the patient’s psyche, also by including in the conversation the noted and consciously used non-verbal methods of influencing which assume sensing the patient’s emotional attitude. There is no judging here, only facilitation of the creation of a new activity and a new way of thinking (see Fitzpatrick, Janzen, Chamodraka, Gamberg, Blake 2009).

Yet again, a relation to Kępiński’s thought (2015) can be seen, for it is the skill in proper non-verbal communication that – in his opinion – decides about the success of therapeutical contact.

From the applicatory perspective, in which reflection is directly joined with the praxis, a few moments prove important for therapists. It is so as music proves to be the initial way of influencing, when in the first session Joseph asks if he can bring his gramophone and records and says: “if we played music now, we would be sanctified”, but Leon initially opposes it – he strictly forbids: “No opera.” Yet, music appears and it has exceptional power. Both the song sang at the beginning of sessions – “America, the Beautiful”, and other music, encouraging characters to dance
(the scene in the church, when Leon makes first sounds with the organ – which he had often mentioned before, finding them necessary for well-being). The structure of this scene is invaluable for classes in therapy. After the first sounds, still single and isolated, Clyde starts singing a song known to him, “Heavenly Coffee” (probably one from a commercial of the beverage), first a cappella, and later with Dr Stone accompanying him on the organ, and once the music has cheered him on, he asks Betty the assistant to dance. They are joined by Joseph who steps in from the side-lines and conducts following the pulsation of the musical material, and finally by Leon, who starts to dance, amazed by the movements of his own hands. Music generates joy, as well as a will for interaction and rejoicing in the moment together. This is, eventually, the quintessence of music therapy in one scene.

**Conclusion**

Film therapy, or rather exemplification of therapeutical issues in a film, might become a remarkable component of an academic lecture, not only in the situation of a pandemic, as it is argued by David R. Cole and Joff P. N. Bradley (2016, p. 11). The cinematographic image, here subjected to an initial description performed from a pedagogical perspective, resonates with Kępiński’s (2015) idea. In its message, it emphasises the significance of the patient’s specific contact with the therapist, as well as the indispensability of a deeply humanistic attitude towards the patient, based on understanding and empathising with their emotions, including discomfort or suffering. The film shows the hard work of the therapist, but also that of the patients, who form a working alliance (Gelso, Hayes, 1998), which brings results co-created in a group. The essence of the film’s message is, therefore, understanding therapy as a meeting with a human being and not their dysfunction, as well as creating a dialogue based on understanding and directed towards recognition of the other person’s needs and meeting them. It is also a story about building a group out of individualities and about becoming responsible for fellow participants in therapy.

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Abstract
The aim of this paper is to analyse the influence of Stanislaw Lem’s works, an outstanding representative of Polish science fiction, philosopher and futurologist, on the shape of reality in which we currently function. Undoubtedly, Lem’s writings are a collection of predictions that describe, with unprecedented accuracy, the technologies of virtual reality, nanotechnology, biotechnology or robotics long before they were created. Are we living in a world that was described by one man many years ago? The research method used in this study is the content analysis of the selected novels by Stanislaw Lem and the analysis of available secondary data. Let us therefore examine, on the one hand, the predictions of the Polish writer related to the development of the latest technologies, the advent of which he forecasted many years before they were created, and, on the other hand, let us consider what social consequences resulting from such a rapid progress in the field of technology the Polish futurologist warns us about.

Key words: technological advances, social problems, science fiction, Lem

Introduction
In contemporary humanistic reflection, the analysis of reality means, among other things, the examination of the effects that popular culture has on societies, being a source of thought and behaviour patterns, entering almost every sphere of
human activity. Its universal appeal does not bypass the world of technology and invention. A perfect illustration of this phenomenon, namely the extent to which pop culture influences technological reality, is provided by historians working in The International Spy Museum, in Washington. They mention that not only the average viewers of films about Agent 007, but also specialists in the technical industry were deeply convinced that spy gadgets and the latest technical wonders used by the infallible spy of the British Secret Service were authentic. In their opinion, the KGB tried to keep pace by working on new gadgets like, for instance, a lipstick gun. The Museum also reveals that the director of the CIA in the 1960s often watched Mission Impossible film. After each episode, the director would call those in charge of spying gadgets and tactics and ask: “Can we do that?” (“KGB thought James Bond’s weapons were real”, 2001)

Yet, science fiction literature also has a similar effect on its “common” readers and specialists. Palmer Luckey, one of the founders of the virtual reality company Oculus, admits that he owes his visionary ideas to science fiction novelists. In this context, he cites Ernest Cline’s novel Player One, which became the inspiration for his company’s VR goggles. The Oculus founder’s deep fascination with the science-fiction genre is also evidenced by the fact that the company’s headquarters conference rooms are given the names of virtual worlds such as Martix and OASIS (Wingfield, 2016). However, Player One is not the only novel in which the concept of a virtual world appears. A twin project is featured in the film Matrix and in the novels by Russian writer Sergei Lukyanenko, False Mirrors and Labyrinth of Reflections. It is worth mentioning at this point that also the HoloLens goggles, a device created by Microsoft, owes its name to the holodeck well known to fans of the Star Trek series. A room called a holodeck enables the creation of a simulated reality on the basis of previously entered data.

**Stanisław Lem – a writer not from this world**

In November 2020 The Polish Parliament adopted a resolution to make 2021 the Year of Stanisław Lem. September marks the 100th birth anniversary of the outstanding representative of Polish science fiction, philosopher, futurologist and essayist. A writer who, according to Philip K. Dick, could not really have existed (as cited in Davis, 2015). The author of Man of the High Castle sent a denunciation to the FBI in 1974, proving that no one in the world could boast of such a multitude of styles and ideas: “He is probably a composite committee rather than an individual” (as cited in Davies, 2015). John Updike calls Lem a poet of “scientific
terminology” and argues that his books are thrilling “especially for those whose hearts beat faster when Scientific American comes out every month” (as cited in Davis, 2015).

It is this extraordinary synthesis of science and fiction, scientific facts and writing styles that made Lem one of the most widely read and admired writers of all time. As Dagmar Barnouw states: “The Polish SF writer and theoretician of science Stanislaw Lem, is one of the most sophisticated and effective commentators on the difficulties faced by the vastly complex vulnerable social systems in an age dominated by science and technology” (1979, p.153). Peter Swirski commenting on the astuteness of Lem’s prognoses on the subject of future technological advances rightly acknowledges: “Although Lem’s fictions are always formidable instruments of cognition, they are more than mere fictional illustrations of scientific and epistemological dilemmas. Their value owes as much to their artistic and aesthetic qualities as to their success in defining the forefront of our technology-driven culture” (1997, p.6).

Lem’s works are widely recognised not only by the literary world, but also by scientists. Among the faithful readers of the Polish futurologist’s works are Nobel Prize winners in physics Prof. Piotr Leonidowicz Kapica and Prof. Ija Mikhailovich Frank, as well as Prof. Sergei Korolev who used to be called the “father” of Soviet cosmonautics (Grob, 2011). Lem is read by cosmonauts, physicists, astronomers and astrophysicists. His novels inspire many research initiatives, just to mention the project of the Polish Industrial Development Agency (Logical Nano L.E.M Possibilities Extractor), the aim of which is to implement selected applications of graphene and predict commercial applications in the field of high technologies, or a series of conferences organised by the Digital cultures platform, “We need mirrors”, focusing on the problems of 3D techniques and photogrammetry. When a new asteroid from the main belt of asteroids orbiting the sun was discovered at the Crimean Astrophysical Observatory in 1979, it was named after the Polish writer (3836) Lem.

Andrew Pickering notes that the organizing question of Lem’s writing is as follows: “Given what we know today, what could we imagine in the future?” (2014, p.245). The Polish futurologist is said to have foreseen the future – why? Without a doubt, Lem’s writing is a set of predictions that describe, with unprecedented accuracy, the technologies of virtual reality, nanotechnology, biotechnology and robotics, long before they were created. So are we living in a world that was described by one man many years ago?
Method

The research method used in this study is the content analysis of the selected novels by Stanisław Lem and the analysis of available secondary data. Earl Bebbie defines research that makes use of secondary data as non-reactive study, i.e. research in which the researcher does not interfere with the actual object of analysis or the nature of the analysed phenomenon (Babbie 2005, p. 304). The concept of secondary data denotes here a wide range of sources resulting from the processes of documenting many areas of public life such as statements made by experts, company websites, scientific articles, internet forums. (Hox, Boeije 2005, p. 596).

Stanisław Lem – technological and social forecasts

Lem’s rich literary heritage includes both fantasy novels, which fit well into the intertextual space of the genre, and futurological essays. Let us analyze, on the one hand, the predictions of the Polish writer related to the development of the latest technologies, the advent of which he had forecasted many years before they were created, and, on the other hand, let us consider what social consequences resulting from such rapid progress in the field of technology Lem, who often referred to himself as a visionary-conservative (Lem, 1995, p. 91) warns us about.

Return from the Stars, a novel published in 1961, begins at the point where stories of space adventures usually end: the main character, an astronaut, having overcome countless dangers in his expedition, lands on Earth. As a result of Einstein's famous time paradox, Hal Bregg has become only a few years older, while on Earth as many as 127 years have passed. The Earth is now a completely different world, much has changed in the surrounding reality. Hal Bregg is surprised, for example, by what he sees in a bookshop: “There were no books in it. None had been printed for nearly half a century. And how I have looked forward to them, after the micro films that made up the library of the Prometheus! No such luck. No longer was it possible to browse among shelves, to weigh volumes in hand, to feel their heft, the promise of ponderous reading. The bookstore resembled, instead, an electronic laboratory. The books were crystals with recorded contents. They can be read by the aid of an opton, which was similar to a book but had only one page between the covers. At a touch, successive pages of the text appeared on it. But optons were little used, the sales-robot told me. The public preferred lectons – like lectons read out loud, they could be set to any voice, tempo, and modulation” (Lem, 1980, p.79).
This description is deceptively similar to that of a contemporary e-book, although we should remember that the first attempts to use e-paper appeared forty years after the publication of Lem’s novel, and the prototype of an e-book reader with an e-ink screen was produced forty three years after the premiere of Return from the Stars, in 2004. The writer imagines e-books as crystals on which content is stored and played back on a special device, which may rightly be associated with contemporary tablets. He calls this device the opton, although today most of us refer to it as Kindle. In the same novel we also find an advent of audiobooks called lectons in Return from the Stars. And although they have not become popular in the shape described in the passage above, this form is now possible to be recreated with the use of a speech synthesizer.

The Magellan Nebula, in turn, presents a vision of the future in which people have immediate and universal access to a huge virtual database called the “Trion Library”. Trions are small devices made of quartz that enable connection to a virtual data set. In function, they resemble modern flash drives or smartphones. Lem describes the principle of trions operation as follows: “Trion can store not only luminescent images, reduced to a change in their crystal structure, that is images of a book’s pages, but all kinds of photographs, maps, images, graphs and tables – in other words, anything that can be observed by sight. Just as easily! Trion can store sounds, the human voice as well as music, there is also a way to record scents” (Lem, 43). In the same novel, Lem presents an extremely interesting vision of goods production resembling modern 3D printing technology. Trions function as information carriers and contain the production recipe which is then sent to the machines producing the items needed by the recipient.

In the extensive philosophical essay Summa technologiae, the title of which refers to the fundamental for philosophical discourse thirteenth-century theological Summa of St. Thomas Aquinas, the futurologist: “(...) develops a series of wide-ranging prognoses on the social, cultural, and technological destiny of our civilization. Virtual reality, information breeding, cosmic expansion, or teleporting are just a few hypotheses with which Lem bridges the discussion of the technology of today with supertechnology of the future.” (Lem, Swirski 1997, p. 6). Lem considers the possibility of creating a virtual reality and other world-creating techniques under the name of phantomatics, he wonders: “(...) is it possible to create an artificial reality that is very similar to the actual one yet that cannot be distinguished from it in any way?”(Lem, 1964, p.197). Lem analyses both the practical aspects and the psychological implications of implementing such technology. He realises that phantomatics creates unlimited cognitive and developmental possibilities and is a real civilisational leap for a man, who con-
nected to the generator can do anything: climb Alpine walls, wander around the moon without an oxygen mask, conquer medieval castles or the North Pole at the head of a dedicated team, but also recognises the other, darker side of this phenomenon: “Phantomatics can also, of course, become a real menace, a social plague, but this possibility applies to all products of technology, although not to the same degree. We know that consequences of the misuse of steam and electrical technology are far less dangerous than consequences of the misuse of atomic technology” (Lem, 1964, p. 215). Lem’s ambivalent attitude to progress, civilisational development and, above all, the use that a man is willing to make of the latest technological achievements, can also be found in his essay Independent Variable: “All technology is double-edged. Of course, progress leads to problems, such as the fact that if you break, say, a few spokes in a carriage wheel, you can only fall into a ditch, but if you break a few spokes in a turbo jet, all the passengers are likely to die. As technology increases, the risk increases enormously” (Lem, 1995, pp. 91-92 [translation – author]. Similar scepticism is expressed in the essay The Unity of Opposites: “A review of the various fields of human activity – toolmaking, construction, communication technology, the transformation of some kinds of energy into others – shows us a similar phenomenon of the »dark sides of progress«” (Lem, 1962, p. 164 [translation – author]). Virtual reality can be a superb entertainment and can make everyday life easier, but due to its essential feature – the illusion of reality – it carries a great risk and the danger of blurring the boundary between what is real and what is fictional.

In the light of these observations, serious questions arise about the ethical issues of such a constructed phantom reality. The generated vision is deceptively similar to the real world. An immersed person can freely test his or her behaviour and cross boundaries that are not crossed in the real world because crossing involves serious consequences. Here everything is possible, because nobody dies when, for example, causing a car accident or recklessly jumping under a speeding vehicle. An artificially created world, easier and more perfect, can become a real trap for a man who will not have the will to get out of the creation. Moreover, one can imagine a situation when the vision will have several levels and it will not be possible to distinguish it from reality. It is then very easy to make a mistake and to adopt imprudent attitudes in the real world, having already abandoned it for fantasy.

In Eden (1959) Lem describes other technological solutions, this time in the field of biotechnology. When as a result of miscalculations a rocket with a group of cosmonauts forcefully lands on an unknown planet, the participants of the expedition start exploring the planet inhabited, as it turns out, by intelligent beings. While exploring the new environment, the astronauts discover things and phenomena
that are unknown to them. They also learn about the groundbreaking technology used there to produce a new human being. The method of bioengineering, as it is referred to, although highly advanced, is not devoid of errors and individuals created as a result of unsuccessful genetic manipulations are ruthlessly exterminated. This pessimistic picture presented by the writer is a warning against man's unrestrained desire to improve human nature through genetic manipulation, which will always remain just a technical method interfering with the living individual's organism.

However, one of the most vividly debated issues related to the dark side of technological progress remains the problem of artificial intelligence in the mechanical body of a robot. A key question is the possibility of competent conflicts between different automated management systems and between them and human controllers. In *Summa technologiae* Lem predicts that: (...) machinic control centers that will manage the production and exchange of goods, their distribution as well as research (...) will emerge and grow. Such local coordinators will require some superior ones—at the scale of the country, at least, or even the continent. Is it possible that some conflicting situations will arise between them? Yes, absolutely” (Lem, 1964/2013, p.158). This raises the question of who will profit from a particular decision made by a machine, what is the guarantee that in a contentious situation the machine will choose a solution favourable to man? The writer expresses real concern about the shape of reality in which intelligent machines will work for humanity.

The issue of identity inscribed in a human body subjected to the power of technology, especially transplantology, is taken up by a futurologist in the story *Are You There, Mr Jones?* (1968) Lem reflects on a hypothetical problem of the legal status of a man who, as a result of a number of transplantation operations, has almost no organs left. All of them, including the brain, have been replaced by artificial prostheses. The man is then being sued by the company funding the operations which claims that the man is its property. The story touches on issues that only now, in the age of robotics development, are becoming relevant. The dispute concerns the existential basis on which Mr Johns can live, but not as an autonomous individual, but as the property of the manufacturer who produces the organs placed in his body.

The intensification of research in the field of nanotechnology is also the key element in Lem's vision of the technological world. Although the futurologist was not the creator of this field, he developed it significantly, and motifs connected with human nanotechnological improvements often appeared in his writing, as well as the use of nano-sized devices.
Another astute prognosis of Lem’s concerns the progress in robotics. In the writer’s opinion, the civilisational leap associated with the development of automation in the coming years is a foregone conclusion. And the risk of losing autonomy to automation in a technological paradise is by all means real. This issue is addressed in *Dialogues* published in 1957, at a time when cybernetics seemed to open unlimited possibilities for people. Philonous and Hylas discuss the problem of the original and the copy, the question of self-awareness in relation to cybernetic experiments with recreating human personality by means of a machine. Hylas, under the pressure of Philonous’s arguments, concludes: “This man can and will bear an infinite resemblance to me, everyone will take him for me, he will have the same feelings, inclinations, passions as I do, even work that I have undertaken will be completed by him in my spirit, but it will not be me! It will be a doppelganger, a kind of twin, and I shall die for ever!” (Lem, 1957, p. 15 [translation – author].) Thus, there is a recurring question about the shape of reality in which thinking machines will be able to replace humanity, whether they will accept the subordinate place assigned to them, or whether they will strive to remove humans as an unnecessary link in the evolution of reason. In the *Dialogues* (1957), there also appears the motif of a network comprising many machines working together and thus increasing their efficiency. This visionary concept brings to mind the contemporary Internet. Let us remember that Lem presented it at the end of the fifties of the twentieth century and the beginnings of the network date back to the end of the sixties.

**Conclusions**

When making predictions about the development of civilisation, the writer emphasises that both technocracy, of which Leszek Kolakowski accused him years ago, and technophobia, are completely unknown to him: “I am not a technocrat, I only realise how things are”, argues the author of *Solaris* (Lem, 1995, pp.91-92 [translation – author]). Although at a time when visions of future worlds were created, they seemed so distant and abstract that they were classified as purely fictional possibilities, modern times clearly show how true the writer’s insightful predictions have become. It is no longer just a creative fantasy, but above all science, in the form of automation, cybernetics and augmented reality, that shape everyday life in the 21st century, and with this direction of change, the writer’s concerns about the social consequences of such a civilisational leap echo ever more strongly. As Peter Haffner states: “Stanisław Lem has never had the illusion
that technological innovations could be suppressed: they will be implemented sooner or later, for good or for ill” (2001, p. 149). A critically realistic view of inevitable progress leads Lem to formulate, in the volume *The Secret of Chinese Room*, the concept of the technological trap, which aptly sums up all his views on the profound changes taking place in the world of science: “I propose the following definition of a technological trap: it is the social and living result of the widespread implementation of such technogenic operations, which in the initial phase was invisible, socially unpredictable and in the growth phase already irreversible, turning the presumed benefits of its spread into one or a multiform catastrophe, more and more clearly recognisable and more and more difficult to stop by those powerful decision-makers, to whom it owes its proliferative proportions and its overwhelming harmfulness” (Lem, 1996, p. 115 [translation – author]).

The degree of technological acceleration as well as the civilization leap connected with this trend strengthen the falsely created feeling of man’s enormous domination over the world of machines. Lem, however, seems to warn against this illusory conviction of controllability and encourages us to remember about maintaining sovereignty in the face of irreversible technicization of our own environment and to set boundaries between the automaton and ourselves. After all, what is at stake here is a battle for the human condition and existence, as well as the preservation of individuality in a cybernetically dominated world.

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The Role of Educational Coaching in Enhancing Teachers’ Well-being During Pandemic

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Abstract
The coronavirus pandemic has turned out to be the biggest challenge the modern educational systems across the world have ever faced. Many teachers observed as their well-being plummeted as they started to overwhelmingly worry about the health of their families, as they were facing confusing instructions, unclear expectations or technical difficulties. The purpose of this qualitative study is to diagnose the role of educational coaching in stimulating the well-being of teachers during the pandemic of COVID-19. The results indicate that educational coaching can help teachers improve their well-being during the pandemic when teachers need to change their role – from classroom to remote – and succeed under a new set of circumstances.

Key words: coaching, COVID-19, educational coaching, pandemic, well-being

Introduction
The coronavirus pandemic has turned out to be the biggest challenge the modern educational systems across the world have ever faced (Bakhshaei, 2020). From one day to the next, all teachers had to change their physical classroom environment to online, remote and home-based instruction. Many teachers observed as their well-being plummeted as they started to overwhelmingly worry about the health of their families, as they were facing confusing instructions, unclear expectations or never ending technical difficulties. As the United Nations admit-
Alicja Gałązka, Joanna Jarosz

Many people are distressed due to the immediate health impacts of the virus and the consequences of physical isolation. Under such circumstances, there has already been some scientific evidence that educational coaching can play a positive role when transitioning to a remote teaching model (Bakhshaei, 2020).

In the last few decades there has been a growing body of scientific research providing supportive evidence that coaching is an efficient approach supporting learning and professional development across the entire education sector: students, teachers, educators, and school leaders (Cornett & Knight, 2009; Green et al., 2007; Kraft et al., 2018; van Nieuwerburgh & Barr, 2016). Coaching has been described as a very powerful approach facilitating personal and professional change and learning through deep level listening, questioning, setting the right challenges and providing support along the process (Griffiths, 2005).

According to Griffiths (2005) the role of the teacher in modern educational setup has shifted from being an instructor to being a facilitator. More often than not, teachers are aiming at helping their pupils ‘to learn rather than teaching them’ (Whitmore, 2002). As Ellis & Smith (2020) state, more and more teachers integrate coaching into their teaching routine: ‘...the most effective teachers create opportunities for learning by allowing students to discover knowledge in a mutually supportive environment.’ Professional development within the education sector, especially that of teachers, is of paramount importance to students’ scholarly and academic achievements, as teachers’ classroom practices have been established as a predictor of students’ results in the classroom (Bush, 2009; Chetty et al., 2011; Knight, 2009).

The purpose of this qualitative study is to diagnose the role of educational coaching in stimulating the well-being of teachers during the pandemic of COVID-19. The study also focuses on analyzing the effects of the pandemic on teachers under a very unique scenario in which all of a sudden all teachers needed to change their classroom setting to fully online and face unprecedented stress.

**Literature Review**

**Educational Coaching**

Educational coaching has been defined as ‘a one-to-one conversation that focuses on the enhancement of learning and development through increasing self-awareness and a sense of personal responsibility, where the coach facilitates the self-directed learning of the coachee through questioning, active listening, and appropriate challenge in a supportive and encouraging climate’ (van Nieuwerburgh, 2012).
In particular, when teachers assume the role of coachees, they are coached ‘with a focus on improving their (...) teaching practice and outcomes for learners’ (van Nieuwerburgh, Barr 2016).

According to Wood et al. (2016), educational coaching is a reliable, valid, and established approach that helps educators enhance their professional skill set. When applied in practice, educational coaching seeks to facilitate the coachees’ growth and development and in order to do that, the educational coach will gather information, test its usefulness, applicability in a classroom setting, and help teachers co-create meaningful solutions (Sezer, 2016). In that sense, an educational coach aims at facilitating rather than directing the teachers, and supports them at finding the best and most resourceful ideas to improve student learning process and classroom experience.

The teacher and coach work together in an environment of continuous feedback and support that as a result helps teachers increase self-awareness, reflect, and grow. Educational coaches may provide feedback based on observations in the classroom setting. Such feedback would typically be followed by a coaching session in which the coach and the teacher discuss their observations, reflections on what happened, and improvement suggestions (Wesley & Buysse, 2006). Such coaching sessions aim at creating a permanent, constructive shift in teachers’ behavior patterns and help teachers establish a healthy professional growth and learning path for themselves.

Moreover, coaching has been described as one of the most efficient approaches for teachers’ development. Outcomes obtained by Wood et al. (2016) show that the results observed in teachers’ practice following coaching far exceed the results observed after application of other professional development approaches. The application of coaching in an educational setting has gathered enough positive evidence to become a common development strategy for teachers who want to grow professionally (van Nieuwerburgh, Barr 2016; Wood et al., 2016).

Positive results experienced by teachers in their teaching practice include the following: positive attitude, better teacher-student skill transfer, enhanced teacher efficacy, being open to implementing new learning and teaching strategies, improved students’ outcomes (Knight, 2009). As a result of their study, Vogt and Rogalla (2009) additionally noticed enhanced adaptive teaching competency amongst teachers following individual coaching sessions.

A study by Brown et al. (2008) adds to the above cited body of evidence. The outcomes suggest that coaching can support professional development of teachers, their efficacy in the classroom setting as well as learning relationships with fellow educators. In addition, Kraft et al. (2018) suggest that educational coaching may
improve classroom environment and help promote good studying habits amongst students. Guskey & Yoon (2009) point out that such substantial impact has mostly been seen as a result of coaching teachers and has not been achieved to such extent by any other professional development method or approach.

**Methodology**

**Participants**

The participants of the study were 30 teachers. A non probability convenience sampling technique was used to assemble the study group. One of the authors asked for volunteers within her professional network. According to Christensen (1994), convenience sampling is considered a verified and reliable method, which allows the researcher to assemble a research participants group in a convenient way, based on their availability within the researcher’s networks. There were 2 inclusion criteria for the participants: (1) they could not currently be in therapy, (2) they could not be taking medications for anxiety or depression.

**Procedure**

The participants were presented with the coaching program Information Sheet (including details about the Educational Coaching Program) and they were asked to fill out a Consent Form. The Information Sheet additionally included information about what *not* to expect in a coaching session, some common examples being therapy, counseling or training. Common understanding of *well-being* was established and the assumed definition was ‘optimal psychological functioning and experience’ (Ryan & Deci, 2001, p. 141). The authors also made sure that all 30 participants were clear that data collected would remain fully anonymous and only data summaries were to be made public.

The study aimed at diagnosing the role of educational coaching in stimulating the well-being of teachers during the pandemic of COVID-19. The study also focused on highlighting the effects the pandemic had on teachers under a very unique scenario in which all of a sudden all teachers needed to change their classroom setting to fully online and face unprecedented stress.

The coaching sessions were conducted over a period of three months. Both group and individual coaching sessions were offered to all participants. Out of which, all 30 teachers participated in 5 group coaching sessions and further 10 of those attended individual coaching sessions. Each of those who opted in for the individual coaching sessions attended 10 sessions.
Although the authors assumed multiple roles: the role of a researcher, the role of the coach and the role of the data collector, the participants of the study were clear on what roles there are as part of the procedure, which ones are assumed and when. One of the authors holds an ICI coaching credential and the other author holds an ICF coaching credential.

All coaching sessions were conducted via zoom, recorded and transcribed. The authors have no reason to suspect that the thoughts, feelings, beliefs and answers shared by the participants of the study were biased in any way.

**Qualitative measures**

The following qualitative research tools have been used: (1) observation and (2) analysis of teachers’ responses collected through both group and individual coaching sessions. Data collected were very complex and have been analyzed with qualitative data analysis approaches listed in scientific literature as valid and reliable (Creswell & Creswell, 2017; Saunders & Rojon, 2014). Example procedures include: (1) inductive/deductive data analysis, (2) noting patterns and clustering, (3) analyzing participants’ meaning, (4) common themes; finding dependence/co-dependence between themes.

**Findings**

The participants of the study noticed that although their initial well-being level was low at the beginning of the study, their overall self-reported well-being and the ability to cope as well as bounce back from adverse events (resilience in the time of stress) improved towards the end of the study. As one of the participants stated:

‘(…) not only do I feel better, I mean physically, you know. I can also see that my overall functioning greatly improved towards the end. I don’t drag my feet out of bed in the morning anymore, but I have this good, warm feeling that I’m able to face many things that come my way during the day. Maybe not all of them yet, but many.’

There were a few common themes around teachers’ well-being and everyday functioning that emerged from the group and individual coaching sessions over the period of 3 months as a result of remote work: (1) lost sense of control, (2) loss of track of time, (3) loss of job satisfaction, and (4) technological overload.
Lost sense of control
At the beginning of the study, nearly all of the participants struggled with uncertainty regarding the new situation, challenges of working from home, not being able to cope with all the demands and also not having any clarity whatsoever about what the demands were. Many participants had other family members living with them in the same household which made teaching an additional struggle. Nearly everyone agreed that their sense of control is simply gone. One of the participants shared her feelings:

‘It is an utterly and infinitely gloomy time for me. I feel like I’m trapped in a complete chaos, more like a tornado that keeps spinning me around and I have no idea if it’s going to spit me out at any point and if so – where exactly am I going to land. Can anyone, ANYONE, tell me what it is specifically that I’m supposed to do?’

Losing track of time
As the weeks progressed, the participants noticed another prevailing phenomenon. Nearly all of them have lost track of time. Class schedules are laid out very well throughout the week, however, what they were struggling with was to know which week of the semester/year they were currently in, which week of the lockdown, which week of remote work. Nearly all of them also experienced loss of work-life balance that only made things worse. As one of the teachers said:

‘If someone told me tomorrow that I’m supposed to share my final evaluations with my pupils this Thursday, I’d totally believe them. And on top of that I’d panic that I don’t have anything ready yet.’

Loss of job satisfaction
Most of the teachers with sadness admitted that they have significantly lost satisfaction related to teaching their pupils and being a teacher. Mostly they were pointing at: loss of belief that work has meaning and decreased sense of professional competence and self-efficacy as a cause. Example experiences that teachers shared during the group coaching session around job satisfaction were the following:

‘Nothing I’m doing makes sense anymore. I’m tired. I’m tired of trying to teach, I’m tired of seeing my students just trying to cheat through the tests all the time, I’m tired of pretending I don’t see that they’re cheating. I mean… what is the point of trying to teach in the first place?’
Another teacher shared:

‘I’m no longer perceived as knowledgeable by my students. They laugh at me when I’m trying to unmute my mic, they laugh at me when I’m trying to figure out how to share my screen. Nightmare! All of a sudden my competence in history is being evaluated based on my computer literacy!’

**Technological overload**

Zoom fatigue has been experienced by everyone. All of a sudden both teachers and students had to completely forget about the vibrant classroom environment and turn on their laptops to dial into a virtual classroom. Most of the teachers complained that technology combined with lack of instructions and IT support have caused them to fail completely in the early stages of remote work. One of them admitted:

‘My eyes were itchy, red and aching at the end of the day, my brain was tired from trying to figure out how “Teams” work, what is “Zoom”, where do I click, where do I submit, why do some of the messages go to Spam… that’s just the tip of the iceberg! Every single day brought 10 tech problems upon me, all of which were nearly impossible for me to solve. I have never, never, and I repeat, never, worked under so much stress.’

**Discussion**

The results obtained in qualitative analysis indicate that educational coaching can help teachers improve their well-being during the pandemic. Scientific research supports coaching as an effective strategy that can be employed for ongoing teacher learning and development (Cornett & Knight, 2009; Joyce & Showers, 1987; Knight, 2009; Kraft et al., 2018). Skiffington & Zeus (2003) describe coaching as ‘a holistic multifaceted approach to learning and change’. As such, educational coaching can play an important role in education across many domains: teachers’ professional development, students’ academic achievement, helping educational leaders or creating a supportive learning culture.

According to Aguilar (2013), educators face many challenges when they begin their teaching career – they instantly need more knowledge, both theoretical as well as the real time classroom applications. Teachers need to be able to make
optimal decisions on the spot, control their reactions in the classroom, make sure their responses portray both knowledge about the subject as well as deep interest in it, and much more to make sure that their students can learn in an optimal environment (Aguilar, 2013).

However, these challenges do not even measure up with the plethora of obstacles and additional requirements that the pandemic has demanded from teachers. The outcomes seen in this study indicate that educational coaching is indeed an approach that can answer those needs and positively impact teachers. As Aguilar (2013) states, coaching ‘can go where no other professional development has gone before: into the intellect, behaviors, practices, beliefs, values, and feelings of an educator’.

Positive results experienced by teachers in their teaching practice include the following: positive attitude, better teacher-student skill transfer, enhanced teacher efficacy, being open to implementing new learning and teaching strategies, improved students’ outcomes (Knight, 2009). A lot of these results have also been observed amongst the participants of the study and are discussed in the section below.

**Benefits of the coaching sessions**

One of the most frequently mentioned benefits of the educational coaching group sessions was being able to connect with other teachers who were facing the same set of unprecedented and stressful scenarios. All participants found it to be eye-opening to realize that they are not unique in their struggles and that the hardships of the pandemic have spread across the entire educational system. The coaching sessions were very rewarding for all participants as they were able to share their experiences, listen to the similar – or very different – experiences of others, learn what solutions others came up with and how to apply them specifically to their situation.

There were several aspects of educational coaching that the participants considered particularly efficient: (1) being provided with a safe space, where everyone could share their experiences, feelings and thoughts without fear of being judged or ridiculed, (2) increased self-awareness and awareness of one’s own environment as well as resources, strengths and weaknesses, (3) learning how to create solutions, set smart goals and use available resources to attain them.

Nearly all the participants of the educational coaching program experienced some form of a positive shift in their thinking patterns, in their perception of their immediate environment and the evaluation of how well/bad things are turning out for them. Most of the participants stated that they are able to see more solutions
to problems at hand, then they were able to come up with prior to the coaching program. Most of the participants also admitted that their level of self-acceptance and the acceptance of current circumstances increased and the feeling of being lost or lacking sense of control decreased significantly. All participants evaluated the coaching session very highly and considered it a time well spent – they felt that they have learnt a lot and grown professionally more than ever before.

**Limitations**

This study has some limitations. The fact that a non-probability convenience sampling was used may have had an impact on the motivation of the participants. Teachers who participated in the study could have been more motivated to improve their well-being than if the sample had been chosen randomly. Also, it is possible that a larger sample would have led to different qualitative results.

**Conclusions**

The purpose of this study was to diagnose the role of educational coaching in stimulating the well-being of teachers during the pandemic of COVID-19. The study also focused on analyzing the effects of the pandemic on teachers under a very unique scenario in which all of a sudden all teachers needed to change their classroom setting to fully online and face unprecedented stress. Qualitative analysis showed that educational coaching can help teachers improve their well-being during the pandemic when teachers need to change their role – from classroom to remote – and succeed under a new set of circumstances.

The following aspects of educational coaching were particularly efficient: (1) having a safe space, (2) increased self-awareness (3) learning how to create solutions using available resources. This qualitative study helps establish an empirical evidence that educational coaching can help teachers enhance their well-being during the pandemic, and possibly – during other crisis scenarios as well.

**References**


Abstract
This article presents the findings of an experimental study, the goal of which was to compare the average evaluation scores of university teachers given by students on the basis of the manner of delivering lectures and organising the teaching process at the university. This empirical field was problematised using three ethics hidden in the organisation of the teaching activities: the ethic of justice (Kohlberg), the ethic of one-sided care (Gilligan), and the ethic of care and responsibility (Gilligan). The study encompassed three groups of students who attended an entire teaching series (lectures), after completion of which the experimenter was evaluated by the students. The only difference was belonging to a given group (i.e., the style of working with the students). The remaining aspects of the teaching activities were very uniform. The experimenter was given the lowest evaluation scores when being fair and balancing care with responsibility, and the highest scores when one-sidedly caring for the students’ well-being.

Key words: Ethic of care, ethic of justice, styles of delivering a lecture, evaluation of university teachers by students
Problem

The evaluation of university teachers by students is one of the mechanisms by which a high standard of education can be maintained. When introduced into everyday teaching practice, this mechanism provides teachers with feedback regarding students' perceptions of their teaching activities. On the other hand, the evaluation process gives students significant power over their teachers. Given that power could, however, also influence teachers' attitude towards students, the evaluation mechanism functioning within the university system for awarding student grades (USOS) enables evaluations to be made no sooner than after a completed educational period. An educational period is deemed completed at the point of the final entry of grades into the aforementioned system. This means that students are only able to evaluate teachers after the end of their exams (in practice, in the next semester) and, often, in circumstances where the last class by a given teacher has already been held. This reduces the possibility of a potential negative reaction by teachers to any negative evaluations made by students. Put differently, the possibility of an unethical use of teachers' power over students is significantly reduced. At the same time, the possibility of students using their power over university teachers is increased. To date, this asymmetry has proved impossible to eliminate in the area of university education. However, the complete abandonment of the process of student evaluations of teachers in the context of education quality could bring back a situation where students' rights are disregarded. This problem poses both a teaching and an ethical dilemma.

In problematizing the aforementioned empirical field (i.e., student evaluations of teachers), two theories concerning the ethic of moral reasoning were used: Laurence Kohlberg's (1984) 'ethic of justice' and Carol Gilligan's (1993) 'ethic of care'. Such a theoretical presentation of the practice of students evaluating teachers should, as intended by the author, provide the premise for thinking about what should be done to weaken the previously mentioned student–teacher power asymmetry while not abandoning the practice of evaluation entirely. The aim, however, is not to verify these theories or fully operationalise them, but rather to treat them as a scientifically verified source of practices designed to structure the teaching process, based on the ethic of justice and the ethic of care.

Kohlberg's idea of justice emphasises reciprocity, equality and respect. Moral conflicts are seen as abstract logical problems, solving which requires a focus on laws and rules (Kohlberg 1984). Circumstances such as the subjects’ personal situation, their emotional condition or personal involvement, or difficulties in performing tasks are eliminated from the reasoning. The ethic of justice corre-
responds to acting according to a social contract and certain principles, which it is supposed will lead to effective solutions, where one faces the consequences of one's decisions. The central concept is therefore a judgement that is based on pure reasoning that, in turn, takes into account pre-established principles and paradigms (Rest et al. 1999).

The main elements of the second perspective (Gilligan's) are concern, care and openness to the needs of others. When making a moral decision, special attention is paid to the consequences that the decision will have for all the persons involved in a given situation, as well as to ensuring that the decision does not harm any of these persons (Gilligan 2003). Gilligan (1993) distinguished between two levels of using the ethic of care. The level that is simpler – in terms of moral development – is characterised by a great emphasis on obligations to others and on satisfying their needs. In such circumstances, being accepted by the participants in the interaction is key. To gain acceptance and create an atmosphere of being understood by others, individuals are ready to give up their own needs and expectations. The second – higher and proper – level of using the ethic of care in moral reasoning is marked by a shift from the previously mentioned one-sided approach towards obeying the rules of law under a contract created together with others, a contract based on respect for – and recognition of – the rights of all the parties (1993). The goal is to arrive at a situation where multiple factors are considered – factors that are important to many people, including oneself.

This conceptualisation generates three ethics of reasoning that can serve as a background to student evaluations of university teachers. It can therefore be assumed that a lecture series delivered in the context of the ethic of justice (EoJ), the ethic of one-sided care (EoC), and the ethic of care balanced with responsibility (EoCR) can constitute a varied experience from the perspective of which the students can evaluate their university teacher.

**Method**

Starting from this problematisation and gradually moving towards the operationalisation of the described study, questions can be asked concerning the differences between the averages of the evaluations given in the three experimental groups: lecture series with the EoJ message, lecture series with the EoC message, and lecture series with the EoCR message. When analysing such a research question as part of a natural experiment, the EoJ, EoC and EoCR messages in the lectures should be treated as the only difference. How was the study planned?
Ethic-related Messages in the Teaching Process

After deciding which variable constitutes 'the only difference,' it was ensured that the remaining aspects of the lecture series were as similar as possible. Firstly, three lecture series for one course (entitled ‘The Methodology of Social Research’) were included in similar – almost analogous – majors: Pedagogy, Early School Pedagogy, and Social Work. Secondly, apart from the identical content, the lectures were highly standardised in terms of teaching activities, including the methods for presenting materials. Each lecture was delivered by the same person (experimenter), based on identical literature, during the same semester, at one university and in one faculty. Thirdly, the structure of the student groups was similar in terms of gender, age and expectations with regard to the university. Fourthly, after the end of the lecture series, in the subsequent semester, and over a single period of time, data was collected by means of lecturer evaluation forms. Given that the students were not actively encouraged to make their university teacher evaluations, the study was repeated three times. This is associated with the generally low rate of returned forms (approx. 31 per cent). Therefore, in order to analyse the forms of the 120 students in each group, the data was collected over three lecture series. This extended the time of data collection to three semesters over a period of two years. This time was used to operationalise the set variable, i.e., ‘the ethic-related message in the lecture,’ primarily by defining the conditions for holding the lecture, the students’ independent work, the conditions for using office hours, the conditions for taking the exam, the examination procedures, the method used for marking exam papers, the conditions for retaking exams, the style of the discussions held with the students, and the general atmosphere of the lecture. Each of these parameters was defined in three different ways: typical of EoJ, typical of EoC, and typical of EoCR. For example, in the EoJ group, sharing examination topics with the students or offering them office hours after a completed lecture series but before the exam date were not allowed, even though these were requested by the students. A total of 52 per cent of the students passed on their first attempt. The EoC group received the questions before the exam. The group’s request to hold office hours before the exam but after the end of the lecture series was accepted. During office hours, the content that constituted correct answers was discussed in detail. All of the students who used the first possible date for the exam passed on their first attempt. The EoCR group received examination topics similar to the questions but not in the form of questions. Office hours were not offered despite the request of the students, but this issue was addressed and the group was provided with a choice: office hours and cancelling the exam topics, or no office hours and keeping the exam topics. The exam was passed on the first attempt by approximately 90 per cent of the students who took it.
After the standard amount of time from the second exam date had passed, in the subsequent semester the students evaluated the teacher who had taught the course. They made their evaluations with the use of standard evaluation forms. The students’ evaluation scores were then analysed. The average evaluation scores in the EoJ, EoC and EoCR groups were compared with respect to the categories listed on the forms.

**Findings**

Each group’s average evaluation score with respect to nine criteria for evaluating university teachers was analysed. The analysed form included the following evaluation criteria:

1. The lecturer was always prepared.
2. The lecturer taught the course in a clear and understandable manner.
3. The lecturer used the time of the lecture effectively (the lecturer neither shortened nor prolonged the lecture time and always arrived on time).
4. The course topics included in the syllabus were fully covered.
5. The content of the course and the manner of teaching allowed for the learning outcomes included in the syllabus to be achieved.
6. The lecturer assessed students fairly.
7. The lecturer showed good manners.
8. The lecturer was available to the students during office hours.
9. The course was valuable.

The quality of the subject-matter of these criteria constitutes a separate research area, one that requires thorough critical analysis, from several perspectives. Nevertheless, this is the tool that the students had at their disposal to evaluate the quality of the taught course. In the described natural experiment, we verified whether the average evaluation scores given to the teachers by the students were dependant upon the lecture group that the students belonged to from the perspective of the ethic-related messages. What follows is a presentation of the results of the one-way analyses of variance for the pairs of variables (lecture groups), the statistical description and the homogeneity of variance tests. It should be noted that all of the Levene’s tests were statistically insignificant, which means that the variances were homogeneous and ANOVA was an appropriate test in these cases.
Ethic of justice vs. ethic of care and university teacher evaluation scores

One can see at first glance that the mean values of both groups are distinctly different and have similar standard deviations that are not very high, which authenticates the calculated mean values.

Table 1. Statistical description of the evaluation scores from the EoJ and EoC groups

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>EoJ</td>
<td>9</td>
<td>3.4667</td>
<td>.53852</td>
<td>.17951</td>
<td>2.70</td>
<td>4.20</td>
</tr>
<tr>
<td>EoC</td>
<td>9</td>
<td>4.4667</td>
<td>.44721</td>
<td>.14907</td>
<td>3.60</td>
<td>5.00</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>3.9667</td>
<td>.70377</td>
<td>.16588</td>
<td>2.70</td>
<td>5.00</td>
</tr>
</tbody>
</table>

Source: own research.

Table 2. Homogeneity of variance test of the evaluation scores from the EoJ and EoC groups

<table>
<thead>
<tr>
<th></th>
<th>Levene's test</th>
<th>df1</th>
<th>df2</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score based on the mean</td>
<td>.512</td>
<td>1</td>
<td>16</td>
<td>.484</td>
</tr>
</tbody>
</table>

Source: own research.

Table 3. One-way ANOVA: evaluation scores from the EoJ and EoC groups

<table>
<thead>
<tr>
<th></th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>EoJ</td>
<td>4.500</td>
<td>1</td>
<td>4.500</td>
<td>18.367</td>
<td>.05</td>
</tr>
<tr>
<td>EoC</td>
<td>3.920</td>
<td>16</td>
<td>.245</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8.420</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: own research.

This observation confirms statistical significance of the ANOVA results. According to the problematisation of this study, the difference should be attributed to the lecture ethic communicated to students. The ethic of justice, which requires the lecturer and students to obey rules without invoking exceptions or special circumstances, resulted in a distinctly lower teacher evaluation score than the ethic of care. With the latter ethic, almost everything that suits students’ preferences is allowed. The students in this study received messages communicating full acceptance and understanding of their expectations and ideas concerning the exam. In
this instance, it was possible to cancel every rule. In the first group, the grade point average was satisfactory plus, and in the other group good plus. This difference emerged in a situation in which the experimenter reduced any differences in the mode of teaching of the course in order to expose only the differences resulting from the ethics of justice and care. As mentioned above, the exam grades were significantly worse in the EoJ group, as compared with the EoC group. Moreover, the degree of the students’ comfort was seemingly higher in the EoC group than in the EoJ group.

**Ethic of care vs. ethic of care and responsibility and university teacher evaluation scores**

The data from the statistical description shows a smaller (than in the previous case) difference between the average evaluation scores given by the students from the ethic of care group and the ethic of care and responsibility group. Standard deviations were, however, similar. This observation is confirmed by the ANOVA results shown in Table 6, which indicate that the differences between these mean values were not accidental, stemming instead from the applied procedures; they were statistically significant. The analytical trope assumed herein

<p>| Table 4. Statistical description of the evaluation scores from the EoC and EoCR groups |
|---------------------------------------------|----------------|----------------|---------------|-------------|--------|</p>
<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>EoC</td>
<td>9</td>
<td>4.4667</td>
<td>.44721</td>
<td>.14907</td>
<td>3.60</td>
</tr>
<tr>
<td>EoCR</td>
<td>9</td>
<td>3.9000</td>
<td>.36056</td>
<td>.12019</td>
<td>3.40</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>4.1833</td>
<td>.49020</td>
<td>.11554</td>
<td>3.40</td>
</tr>
</tbody>
</table>

Source: own research.

| Table 5. Homogeneity of variance test of the evaluation scores from the EoC and EoCR groups |
|---------------------------------------------|-------------|----------|----------|----------|
| Levene's test | df1 | df2 | Significance |
| Score based on the mean | .317 | 1 | 16 | .581 |

Source: own research.
suggest that the lower mean value of the evaluation scores given by the students from the ethic of care and responsibility group – as compared with the ethic of care group – stems from the teaching mode and the expectations about the exam communicated by the experimenter to the students. The experimenter attempted to balance his/her trust in the students with trust in himself/herself, and his/her concern for respecting their rights with concern for respecting his/her own rights. By giving the students choice and then respecting their decision, the experimenter made them face the consequences of their decisions. The students, in turn, experienced this in the form of disillusionment or disappointment. As shown, shifting the care towards a more symmetric relationship – inherent in the EoCR ethic – modified (lowered) the students’ evaluation by over half a score, even though the style of the instructor’s teaching was similar in both groups.

Table 6. One-way ANOVA: evaluation scores from the EoC and EoCR groups

<table>
<thead>
<tr>
<th>Source: own research.</th>
</tr>
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<tbody>
<tr>
<td><strong>Table 6. One-way ANOVA: evaluation scores from the EoC and EoCR groups</strong></td>
</tr>
<tr>
<td><strong>Sum of squares</strong></td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Between groups</td>
</tr>
<tr>
<td>Within groups</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

suggest that the lower mean value of the evaluation scores given by the students from the ethic of care and responsibility group – as compared with the ethic of care group – stems from the teaching mode and the expectations about the exam communicated by the experimenter to the students. The experimenter attempted to balance his/her trust in the students with trust in himself/herself, and his/her concern for respecting their rights with concern for respecting his/her own rights. By giving the students choice and then respecting their decision, the experimenter made them face the consequences of their decisions. The students, in turn, experienced this in the form of disillusionment or disappointment. As shown, shifting the care towards a more symmetric relationship – inherent in the EoCR ethic – modified (lowered) the students’ evaluation by over half a score, even though the style of the instructor’s teaching was similar in both groups.

Ethic of justice vs. ethic of care and responsibility and university teacher evaluation scores

Table 7 shows that the average evaluation scores from both groups were different but this difference was below half a score. The standard deviations authenticate these means as realistic. The results of the one-way ANOVA were not statistically significant, which means that they may stem from a measurement error rather than from the experimental procedures. Therefore, it can be said that the means do not differ. One must, however, be particularly careful in this case. The plan of the entire study assumed, before the commencement of the study, that the null hypotheses could be rejected if alpha was greater than or equal to 95 per cent. In the present case, as shown in Table 9, alpha was 94 per cent. The statistical decision in such cases is obvious – the null hypothesis is not rejected. Due to the fact that this result was close to the limit, however, this issue needs to be double-checked. If one sticks to the formal
Table 7. Statistical description of the evaluation scores from the EoJ and EoCR groups

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>EoJ</td>
<td>9</td>
<td>3.467</td>
<td>.53852</td>
<td>.17951</td>
<td>2.70</td>
<td>4.20</td>
</tr>
<tr>
<td>EoCR</td>
<td>9</td>
<td>3.900</td>
<td>.36056</td>
<td>.12019</td>
<td>3.40</td>
<td>4.40</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>3.683</td>
<td>.49735</td>
<td>.11723</td>
<td>2.70</td>
<td>4.40</td>
</tr>
</tbody>
</table>

Source: own research.

Table 8. Homogeneity of variance test of the evaluation scores from the EoJ and EoCR groups

<table>
<thead>
<tr>
<th>Score based on the mean</th>
<th>Levene's test df1</th>
<th>df2</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.776</td>
<td>16</td>
<td>.201</td>
</tr>
</tbody>
</table>

Source: own research.

Table 9. One-way ANOVA: evaluation scores from the EoJ and EoCR groups

<table>
<thead>
<tr>
<th></th>
<th>Sum of squares df</th>
<th>Mean square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>.845 1</td>
<td>.845</td>
<td>4.024</td>
<td>.062</td>
</tr>
<tr>
<td>Within groups</td>
<td>3.360 16</td>
<td>.210</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4.205 17</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: own research.

Results, both groups should be treated as evaluating the university teacher in a similar way – more negatively than the ethic of care group. Perhaps the common denominator of these ethics (different, after all) of delivering the lectures is a relative symmetry of the rights of both parties in the teaching process. This is a particularly relevant statement with respect to the asymmetric relationship in the ethic of care group. In the case of the EoCR group, the students had more obligations and less certainty as regards their privileged position, while they simultaneously felt that their rights were at the centre of the teacher's attention and that they could negotiate with the teacher on the shape of the reality of delivering the lectures and taking the exams. The latter privileges were not enjoyed by the students of the EoJ group, whose relationship with the university teacher was also symmetric. And it seems that the common feature of both ethics – the students’
Ethic-related Messages in the Teaching Process

obligations – overrode the openness towards them, since both ethics lowered the evaluation scores of the teaching activities of the experimenter in the study.

Conclusion

Out of the three ethics of delivering lectures, the ethic of care and responsibility seems to be the most functional and egalitarian one. The least functional and most one-sided one is the ethic of care. By contrast, the most demanding and formalised one is the ethic of justice. In the described experiment, the experimenter got the lowest evaluation scores when behaving fairly and balancing care with responsibility, and the highest scores when one-sidedly caring for the students’ well-being. One can say that this is to a certain extent logical in that good is rewarded with good. This is not, however, a logic of a proper concern for the quality of education. A recommendation stemming from this study would perhaps be to stress the need for improving the ethic of care and responsibility and associating it with the relevant criteria for student evaluations of teachers.

References

Abstract
The rapid inventions of social media in current era have changed the wellbeing of human lives. The current study aimed to explore the correlation between social media usage and undergraduate students’ psychological wellbeing in Mirpur, Azad Jammu and Kashmir. Two research instruments were used in this study Social Media Addiction Scale-Student Form (SMAS-SF) and Flourishing Scale (FS). The first scale measures the usage capacity of social media and the second measures the psychological wellbeing of undergraduate students. The correlation between the scores obtained from the scales was determined by applying Pearson correlation formula. The positive correlation between social media usage and psychological wellbeing of undergraduate students has been found in this study. The other finding related to most preferred social media concluded that WhatsApp was most preferable social media among undergraduate students. 61% undergraduate students used the WhatsApp to engage their daily life in using social media.

Key words: social media, psychological wellbeing, undergraduate students
Introduction

Social media is a new invention in modern era. People interact with each other via different networking sites and share their information around the world. This distinctive development endows individual to become nearer to others and interconnect virtually and share information promptly. People share their information, videos, pictures, announcements, update their profile, get comments, and engage their lives.

According to Livingstone (2005) the rate of social media usage is higher among the youth. By feeling happy, building healthy relationship with their fellows and family, social media have become person’s good wellbeing. Wellbeing is a state of person in which they feel happy, live a satisfactory life, have positive relation with others (Ryan and Deci, 2001).

Humans are basically socially connective species; they want to live in a group with great social interactions because it is human need to share and elaborate their feeling for improving their wellbeing. If the interaction among people is strong, it creates a strong satisfaction in their lives (Leary, et al., 1995). While addressing it, Festinger (1954) proposed the social comparison theory which explains the nature of human beings who behave and compare themselves with others in aspect of upward and downward social comparison theory.

People compare themselves with others to improve their attitude and living style with the use of social media. People compare themselves in aspect of their attitude, capabilities, and values with others to improve their attitude, capabilities, and values (Festinger, 1954). The social media and the new technologies change the aspect of every person’s life and make them digital. Majority of world’s population of various age groups are frequently using different social media sites for communication and entertainment. This communication has connection with wellbeing of people as well.

There is no doubt that these social media technologies have developed a wide range of activities for users by developing substantial online learning procedures. These technologies also increase the inter and intra relation, indulgence and response between the students, friends, and teachers too. But the social technology has positive and negative influence on psychological well-being of the students at variant age levels. Therefore, the current study aimed to explore the influence of social technology on the undergraduate students and the relationship between them at District Mirpur of Azad Jammu and Kashmir.
**Objective:**

_To investigate the relationship between the social media usage and the psychological wellbeing of undergraduate students in District Mirpur, Azad Jammu and Kashmir._

To achieve the objective of the study a hypothesis has been formulated.

**Hypothesis:**

_There is no significant relationship between the use of social media and the psychological wellbeing of undergraduate students in Mirpur, Azad Jammu and Kashmir._

The study has been limited to only eight main social networking sites. Moreover, the study is limited to the psychological wellbeing of the undergraduate students.

**Literature Review**

Shirase (2012) found that across the world approximately 1.5 billion people have their own social networking profile which has increased over the years. Facebook is the predominantly used social media to share comments, information, videos, audios, pictures, and images (Sheldon & Bryant, 2016). Whereas, Twitter belongs to microblog social media in which people tweet with others to share the information and happenings around them. YouTube is also a very popular social media site that provides information in the form of videos. Every day even every second there is billion users who make use of this social media. Instagram and Snapchat both are mobile-based social media (Stec, 2015).

Psychological wellbeing is about having a positive mental states, such as happiness or satisfaction (Edward, 2005). People having less depression, anxiety, fear and free of boredom develop positive mental health. Hence, psychological wellbeing contributes to the positive relation with others (Keyes & Haidt, 2003). Deci & Ryan (2008) distinguished two main approaches. Hedonic (Positive relation with other individuals) and Eudaimonia (Self-acceptance). Human flourishing is the basic condition and process of being positive, psychologically healthy human being. It is a positive attitude of human being that describes human health (Gable & Haidt, 2005). Seligman (2011) identified positive emotion, engagement, relationships, meaning and achievement that increase human tendency to achieve positive psychological wellbeing.

Shaheen (2008) stated that the use of social media among students provides a larger platform for expressing their feeling about their rights, encouraging their
confidence and enhancing their awareness. At the time of critical situation, the use of social media among students provides an opportunity to release tension by sharing their thoughts with others and getting suggestions from others how to escape from the situation.

Mcdoool, et al (2016) discovered that the use of social technology affected students’ well-being negatively. The social media users were found less satisfied with their lives and studies except their relationships. Further it was highlighted that the girls were suffering more than boys. Khurshid & Haroon (2018) concluded that social media have great influence on students’ lives and enhance their information that help them in their academic activities. Social media have a direct relationship with the human psychological well-being especially for young people like university students.

Alkan & Doğan (2018) explored that there was no significant relationship between social media usage and the wellbeing of secondary school students because the secondary school students do not use social media a lot and their wellbeing doesn’t increase by the use of social media. Further there was no difference in results while comparing usage of social media among genders.

Dhir, et al (2018) discovered that compulsive social media usage leads students towards social media fatigue which in turn causes higher level of anxiety and depression in them. The social media indirectly affect their wellbeing and cause fear of missing out and fatigue. Weinstein (2018) found that there are multiple dimensions of social media usage and well-being. Sometimes it had positive influence and sometimes it had negative influence. Therefore, this is a kind of emotional seesaw that has different effects on different people living in different settings.

Vannucci & Ohannessian (2019) explained that the higher use of social technology had variant effects on psychological wellbeing of early adolescence whereas lower use of technology had different effects. They concluded that the additional use of social technology was problematic for the children between age 11-14. Symptoms of higher-level depression, anxiety, irresponsible behaviors, family disagreements and less family and friend support had been observed in adolescents. Whereas the adolescents who were in low social technology usage subgroup had fewer or no evidence of such psychological issues.

Tariq, et al. (2019) analyzed the effects of smartphone usage on the psychological wellbeing of school going children in Lahore, Pakistan and discovered that long-term smartphone usage was significantly associated with behavioral problems as well as psychological problems and the smart phones have made access to the social media world even more easy.
Material and Methods

The current study is quantitative in nature and correlational design has been employed to explain the relationship between usage of social media and undergraduate students’ psychological wellbeing. Pearson correlation formula (Creswell, 2014) has been used to find out relationship between usage of social media and psychological wellbeing of undergraduate students. High scores indicate the high level of relationship between both variables.

Population

The population of this study is based on undergraduate students of Mirpur, Azad Jammu and Kashmir. There were thirteen governmental institutions in which four colleges are for boys and seven are for girls, one is co-education, and one university. The total number of undergraduate students is mentioned below:

Table 1. Number of Undergraduate Students in Mirpur, Azad Jammu and Kashmir

| Students in degree classes in colleges | 3236 |
| Students in BS classes in colleges     | 459  |
| Students in university                 | 4253 |
| Grand Total                            | 7948 |

Sample

The sample of this study has been composed of one thousand undergraduate students (five hundred males and five hundred female) from different government institutions by applying random sampling technique.

Data Collection Tool

This study was based on two research instruments that are

- Social Media Addiction Scale-Student Form (SMAS-SF) measured the social media usage score of undergraduate students.
- Flourishing Scale (FS) measured the score of psychological wellbeing of undergraduate students.

Social Media Addiction Scale-Student Form (SMAS-SF):

Sahin (2018) elaborated this scale as an instrument to measure the use and addiction of social networking sites among students. The scale, in its original form, consisted of 29 items with Likert construction and five response options, ranging
from “strongly agree” to “strongly disagree”. Furthermore, Sahin (2018) tried to make this scale more reliable and valid instrument. The overall reliability of this scale is $r=.94$, Spearman Brown reliability coefficient (.91), Guttman Split-Half (.90) and Cronbach Alpha reliability coefficient (.93), all these findings showed the internal validity and reliability of the whole scale. It consists of four factors a) Virtual Tolerance, b) Virtual Communication, c) Virtual Problem, and d) Virtual Information. These four factors are investigated by 29 items. All items of this scale are positive in nature, describe positive attitude of students toward social media usage.

**Flourishing Scale (FS):**

Diener, et al. (2010) attempted to create more reliable and valid instrument to measure the students’ psychological wellbeing. This instrument was developed to examine the insufficient measuring scores about the psychological wellbeing. It consists of eight items; all items describe the positive direction of human psychological wellbeing. High score of this scale represents the positive and high relation of human being. The internal consistency of this scale was .83, and factor loading ranged from .60 to .78, and item total correlation ranged from .47 to .67 represent the high validity and reliability of this scale.

**Pilot Testing of the Scales:**

The reliability and validity of each scale was already established but we do further pilot testing to content reliability of both scales. One hundred and ninety intermediate students were selected for pilot testing. Ninety male students from Post Graduate College for Boys and ninety female students from Ghazi-Elahi-Bakhsh Government Degree College for Women, Mirpur, Azad Jammu and Kashmir. The reliability of both scales is mentioned in below table.

<table>
<thead>
<tr>
<th>Table 2. Reliability of Both Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
</tr>
<tr>
<td>SMAS-SF</td>
</tr>
<tr>
<td>Virtual Tolerance</td>
</tr>
<tr>
<td>Virtual Communication</td>
</tr>
<tr>
<td>Virtual Problem</td>
</tr>
<tr>
<td>Virtual Information</td>
</tr>
<tr>
<td>Overall SMAS-SF reliability</td>
</tr>
<tr>
<td>Overall FS reliability</td>
</tr>
</tbody>
</table>
The overall reliability of both scales is excellent for conducting and applying a research tool for research study. The Cronbach’ Alpha value $\alpha=.86$ and $\alpha=.74$ of both SMAS-SF and FS respectively shows good level of reliability of scales (Bryman and Bell, 2007).

**Results and Discussion**

The collected data studied by applying Statistical Package for Social Sciences (SPSS) and Microsoft Excel. Both descriptive as well as inferential data analysis have been done.

**Descriptive Data Analysis**

Descriptive data analysis composed of demographic information of undergraduate students as representing students’ level of education, their age, and their perception about most preferred social media.

**Table 3.** Level of education and age of undergraduate students in term of percentage and frequency

<table>
<thead>
<tr>
<th>Education level</th>
<th>Percentage</th>
<th>Frequency</th>
<th>Age</th>
<th>Percentage</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.A/BSc/B.Com/B.S.Ed.</td>
<td>64.1</td>
<td>641</td>
<td>17–21years</td>
<td>87.9</td>
<td>879</td>
</tr>
<tr>
<td>BS/BBF</td>
<td>24.0</td>
<td>240</td>
<td>22–25years</td>
<td>10.8</td>
<td>108</td>
</tr>
<tr>
<td>B.Ed. / B.Ed. Hons</td>
<td>3.5</td>
<td>35</td>
<td>26–29years</td>
<td>0.7</td>
<td>7</td>
</tr>
<tr>
<td>M.A/M.Sc./M.Ed.</td>
<td>8.4</td>
<td>84</td>
<td>Above 29years</td>
<td>0.6</td>
<td>6</td>
</tr>
</tbody>
</table>

**Figure 1.**
Most preferred Social media websites among undergraduate students
Most respondents belong to undergraduates of age group 17–21 years. The high percentage and frequency of this age group showed that very young age students fall in using social media and evaluate their psychological wellbeing.

The Figure 1 revealed that WhatsApp was most preferable social media among undergraduate students with high percentage and Hangout and LinkedIn were the least preferable social networking sites among undergraduate students of Mirpur, Azad Jammu and Kashmir.

**Inferential Data Analysis**

In inferential data analysis, the Pearson correlation formula was employed to evaluate the relationship between both scales. Pearson correlation used to measure the relationship between the usage of social media and the psychological wellbeing of undergraduate students. Both scales were introduced in measuring the relationship in factor wise categories.

**Factor 1 (Virtual Tolerance)**

Item 1-5 of the questionnaire ask about the virtual tolerance of the social media users and the results after applying statistical formula are shown in the following table.

<table>
<thead>
<tr>
<th>Virtual Tolerance value</th>
<th>Pearson Correlation</th>
<th>Flourishing Scale Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.251**</td>
<td>.251**</td>
<td></td>
</tr>
</tbody>
</table>

**Factor 1 (Virtual Tolerance)**

The Pearson correlation between virtual tolerance and flourishing of human being has shown that there is positive relationship between virtual tolerance and undergraduate students' psychological wellbeing with \( r = 0.251 \) at significant level.
**Factor 2 (Virtual Communication)**

Item 6-14 of the questionnaire show the virtual communication of undergraduate students with their family, friends, and educational circle for getting and sending information. These items have asked about the use of social media particularly for communication and the results have been displayed in the table below.

**Table 5. Correlation matrix of SMAS-SF (Virtual Communication) with total item wise of FS**

<table>
<thead>
<tr>
<th></th>
<th>Virtual Communication</th>
<th>Flourishing Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual Communication</td>
<td>1</td>
<td>.307**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Flourishing Scale</td>
<td>.307**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>1000</td>
<td>1000</td>
</tr>
</tbody>
</table>

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

The table 5 revealed that virtual communication is a great attraction among undergraduate students. The finding of Pearson correlation between virtual communication and flourishing showed strong and positive relationship with \( r = .307 \) at significant level which means students feel good which using social media.

**Factor 3 (Virtual Problem)**

Item no 15-23 had shown the virtual problems related to social media. These items had inquired about the uncomfortable feeling and experiences faced by undergraduate students and the results are given in the following table.

**Table 6. Correlation matrix of SMAS-SF (Virtual Problem) with total item wise of FS**

<table>
<thead>
<tr>
<th></th>
<th>Virtual Problem</th>
<th>Flourishing Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual Problem</td>
<td>1</td>
<td>.255**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Flourishing Scale</td>
<td>.255**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>1000</td>
<td>1000</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
Social media may create some virtual problems, but the results show that there are not many virtual problems that influence the psychological wellbeing negatively. The findings of this virtual problem show that there is a positive relationship between virtual problem and undergraduate students’ psychological wellbeing.

**Factor 4 (Virtual Information)**

Item 24-29 inquired about the use of social networking sites for sharing and spreading information. The results of these items are shown in the following table.

<table>
<thead>
<tr>
<th>Virtual Information</th>
<th>Pearson Correlation</th>
<th></th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual Information</td>
<td>Sig. (2-tailed)</td>
<td>.415**</td>
<td>1000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>1000</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Virtual Information</th>
<th>Virtual Information</th>
<th>Flourishing Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual Information</td>
<td>Sig. (2-tailed)</td>
<td>.415**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>1</td>
</tr>
<tr>
<td>N</td>
<td>1000</td>
<td>1000</td>
</tr>
</tbody>
</table>

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

Social media have great impact on virtual information. Many students use the social media to get information from all over the world. The finding about virtual information and flourishing of undergraduate students revealed that there is a powerful and positive relationship between virtual information and flourishing of undergraduate students with r=.415 at significant level.

**H₀**: There is no significant relationship between usage of social media and undergraduate students’ psychological wellbeing.
Major Analysis

Social Media Addiction Scale-Student Form and Flourishing Scale

Table 8. Correlation matrix of SMAS-SF (Overall) with total item wise of FS

<table>
<thead>
<tr>
<th>Social Media Scale</th>
<th>Social Media Scale</th>
<th>Flourishing Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.357**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Flourishing Scale</td>
<td>Pearson Correlation</td>
<td>.357**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>1000</td>
<td>1000</td>
</tr>
</tbody>
</table>

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

The overall findings about social media users and undergraduate students’ psychological wellbeing have revealed that there is positive relationship between them and correlation value r=.357 is at significant level.

Conclusion

The most preferred social media among undergraduate students is WhatsApp. The study reveals that there is a positive relationship between usage of social media and psychological wellbeing amongst undergraduate students. The moderate relationship between virtual tolerance and flourishing of undergraduate students with r=.251 show that students have slightly positive relationship between social media use with their psychological wellbeing. There is a positive relationship between virtual communication and flourishing with Pearson value r=.307 at significant level.

With great use of social media students get more information and enhance their psychological wellbeing as well. This is revealed by positive relationship between virtual information and flourishing. The overall finding of the study on Social Media Addiction Scale-Student Form and Flourishing Scale revealed that there is a moderate and positive relationship between social media usage and undergraduate students’ psychological wellbeing with r=.357 at significant level. This finding has not supported the hypothesis therefore, the Null Hypothesis has been rejected.
The use of social networking sites has become an essential part of every student's life. Students use different social media during their study and daily lives to get more and more virtual information worldwide. By engaging in their social activities, students fall in virtual world and enhance their virtual information. Many students who do not know about social media privacy may be victimized by cyber bullying, therefore it is necessary for them to know their rights.

References


Abstract
A growing number of arts therapists around the world work in schools, but information on their practices is limited. The aim of this work is to examine the theoretical influences and therapeutic trends prevalent in Czech educational institutions. Data obtained from 142 respondents were collected using the “Practice of Arts Therapies” questionnaire. Based on a statistical analysis of the responses, the results show that therapists prefer predominantly humanistic trends with a wide range of other therapeutic influences based on assimilative integration tendencies. Contrary to the initial assumptions, it was found that there is little difference in the preferences for trends in different work environments. The results can be used for international comparisons of arts therapies in the educational environment, as they seem to be an important area of interdisciplinary practice associated with education.

Key words: arts, therapy, education, schools, special needs

Introduction
The changing social climate is bringing new problems to schools: the heterogeneity of pupils in the educational environment is increasing, it is necessary to respond to a number of negative societal forces, etc. (Karkou, 2010). Arts therapies (AT) and their respective fields – art therapy, music therapy, drama therapy or
dance/movement therapy – offer solutions to many of these problems, having been established in many schools around the world as so-called auxiliary services. With the growing importance of AT in schools, there is a need to examine the unique characteristics of AT in regard to their implementation in the educational environment.

From the very beginning, in the Czech schools, interest in AT has been associated mainly with pupils with special educational needs (SEN). In the 1980s there was a rise in interest in art therapy, in the 1990s a rise in interest in music therapy and drama therapy, and now dance/movement therapists are also starting to work in schools. Pupils with more serious educational problems have traditionally been educated in special schools, where ATs have been developed as part of comprehensive rehabilitation (Olejničková, Kantor, Maštalíř, Valenta, & Růžička, 2019). In the 1990s, integration and later inclusive trends began to transform the education system, which led to an increase in pupils with SEN in mainstream schools. These changes were further strengthened by the Education Act of 2016. Although AT is not a state-regulated profession in the Czech Republic, it is practiced in schools by a number of special pedagogues and psychologists. Education in AT can be obtained in the Czech Republic through several private and postgraduate courses, and there are also university programs in the field of art therapy (Faculty of Education, University of South Bohemia), drama therapy, and music therapy (Faculty of Education, Palacky University).

**Problem of Research**

AT in the educational environment is strongly influenced by learning theories, by the specifics of individual groups of students, and by the requirements and problems associated with a particular institution (Karkou, 2010). This creates a new AT identity that has not been sufficiently researched internationally. ATs bring to schools a variety of strategies for therapeutic, counseling and socially-oriented interventions. Specialized AT programs have been published in the literature focused on serious educational problems and pupils with SEN (Andreas, 2005; Rickson, 2006), prevention of social risk phenomena (Quibell, 2010), support of adaptive behavior (Łaba-Hornecka, 2017), integration of pupils from immigrant and refugee families (Rousseau, Sing, Lacroix, Bagilishya, & Measham, 2004), victims of terrorism and traumatic events (Gelkopf & Berger, 2008), etc.

Some authors state that working in the educational environment shapes the therapeutic orientation of arts therapists. V. Karkou & P. Sanderson (2006), in their analysis of the practice of arts therapists, observed that the preferred therapeutic trends in educational institutions were humanistic (pupil-oriented), develop-
mental, active / directive (e.g., behavioral and training-oriented approaches) and artistic / creative. K. McFerran (2010) analyzed the theoretical influences of music therapy approaches in schools based on literature published in English. According to her analysis, the dominant theoretical approaches were psychodynamic (52%), humanistic (44%) and behavioral (12%). A recent review of therapeutic trends (Ludíková, 2017) found that arts therapists in schools use a wide range of therapeutic trends, which in addition to the above also include neurorehabilitation (e.g., neurological music therapy), community (e.g., community music therapy or community-based art therapy), instructional (based on pedagogical concepts, e.g., from Orff’s *Schulwerk*) and other approaches. In addition, ATs have important overlaps with other disciplines, especially arts education, therapeutic arts, and art-based pedagogy (Ayers, 2016).

**Methodology of Research**

**General Background of Research**

The aim of this study was to identify therapeutic preferences used by arts therapists in educational institutions in the Czech Republic and to determine whether these preferences differ from other work environments. The research used the design of a cross-sectional study with the questionnaire “The Practice of Art Therapies” (Karkou & Sanderson, 2006), which was created in Great Britain and later applied in national surveys in Latvia (Paica, Martinsone, & Karkou, 2013) and in Russia (Karkou et al., 2011). The questionnaire was translated into Czech independently by two professional translators; the translation was consulted with V. Karkou and then finalized by one of the authors of the study.

**Instrument and Procedures**

The questionnaire consists of five parts and contains general information about the respondents’ practices, their biographical information, theoretical influences, therapeutic principles, assessment and evaluation. For the purposes of this study, the authors used the analysis of questionnaire items related to the respondents’ work environment, preferences for theoretical influences, therapeutic trends, and general information about the respondents. The theoretical influences were defined by V. Karkou and P. Sanderson (2006) as important psychological, psychotherapeutic, artistic and other theories, while therapeutic principles are considered to be statements that characterize the theoretical framework of the therapeutic process. The questionnaire in the Czech version was modified only with regard
to the items that relate to the qualification in AT due to the specifics of the Czech environment.

**Data Analysis**

While most items of the questionnaire are of a nominal nature and were analyzed using descriptive statistics, therapeutic principles were examined through preferences for statements on Likert scales and analyzed by t-test at a significance level of \( p = 0.05 \) (using STATISTICA 12). Respondents were divided into two subgroups: therapists from educational institutions and other therapists. For therapeutic principles, the internal consistency of the data (Cronbach’s alpha) was calculated to evaluate the validity and reliability of the conclusions.

**Sample of Research**

The exact number of practicing arts therapists in the Czech Republic is unknown. The latest known statistics are from January 2017, when professional associations of the respective AT fields registered a total of 419 therapists (210 music therapists, 153 art therapists, 39 dance/movement therapists and 17 drama therapists). However, it should be noted that the members may not be practicing therapists, and there are many practicing therapists not enrolled in any of the associations. To address as many practicing arts therapists as possible, a combination of the deliberate selection of respondents from professional associations and their recommendations for therapists who perform their practice outside of the associations was used. This approach made it possible to form a balanced research set.

For the purposes of statistical analysis, the resulting set of 142 respondents was divided into two sub-sets according to the work environment reported by the respondents (sub-set of respondents with experience in educational institutions and sub-set of those working elsewhere). The relative frequencies in parentheses in Table 1 express the ratio with respect to subsets by work environment.

<table>
<thead>
<tr>
<th>Modality of AT</th>
<th>Educational institutions</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music therapy</td>
<td>20 (40%)</td>
<td>30 (60%)</td>
</tr>
<tr>
<td>Art therapy</td>
<td>14 (36.8%)</td>
<td>24 (63.2%)</td>
</tr>
<tr>
<td>Dramatherapy</td>
<td>2 (22.2%)</td>
<td>7 (77.8%)</td>
</tr>
<tr>
<td>Dance/movement therapy</td>
<td>1 (11.1%)</td>
<td>8 (88.9%)</td>
</tr>
<tr>
<td>Expressive arts therapy</td>
<td>14 (38.8%)</td>
<td>22 (61.1%)</td>
</tr>
<tr>
<td>Total</td>
<td>51 (100%)</td>
<td>91 (100%)</td>
</tr>
</tbody>
</table>

**Table 1. Prevalence of AT modalities by work environment**
The qualifications of the respondents in the respective type of work environment are given in Table 2. Due to the lower expected number of respondents, students of long-term educational programs in AT were also included in the research group, provided that they had more than one year of therapeutic experience. During the preparation of data for analysis, six questionnaires were excluded because their respondents did not meet the inclusion criteria: specialization in at least one main direction of AT, experience in the Czech Republic, and qualifications in AT.

Table 2. Respondents’ qualifications by their work environment

<table>
<thead>
<tr>
<th>Work environment</th>
<th>Fully qualified therapists</th>
<th>Participants in training programmes</th>
<th>Other specialists using AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational institutions</td>
<td>18 (35.3%)</td>
<td>5 (9.8%)</td>
<td>27 (52.9%)</td>
</tr>
<tr>
<td>Other institutions</td>
<td>36 (39.2%)</td>
<td>22 (24.2%)</td>
<td>34 (37.4%)</td>
</tr>
<tr>
<td>Entire sample</td>
<td>54 (37.7%)</td>
<td>27 (19%)</td>
<td>61 (43%)</td>
</tr>
</tbody>
</table>

Participation in the research was anonymous, voluntary, and participants were informed of the research objectives in the header of the questionnaire. Anonymity was maintained throughout the process of analyzing and publishing the results.

Results of Research

The most common therapeutic influences in educational institutions included specific AT traditions (e.g., a holistic music therapy approach), an integrative approach, developmental theories, specific artistic traditions (e.g., modern dance schools), etc. (Table 3) On the other hand, the lowest preferences were given to specific psychoanalytic / psychodynamic theories. Due to the highest preferences for specific AT traditions, it seems that training in a specific method remains popular among therapists. A comparison of arts therapists in educational institutions with arts therapists in other work environments showed only a few minor differences: an unexpected discrepancy in the higher prevalence of transactional analysis or gestalt theories in educational institutions.

Based on the open question contained in this part of the questionnaire, it was possible to identify some theoretical influences specific to Czech arts therapists. Several respondents from the group of educational institutions stated that they
use various influences from the pedagogical field, such as principles based on alternative pedagogy (Montessori or Waldorf pedagogy) or from therapeutic pedagogy. Some respondents emphasized the focus on the healthy personality aspects of the pupils they are trying to promote. Other respondents from educational institutions describe therapeutic approaches and influences such as developmental changes, biosynthesis, musical traditions of various non-European cultures, or theories of psychosomatic medicine. Respondents also reported several therapeutic approaches that have not yet been described in the literature, such as physio-musical stimulation.

From the point of view of therapeutic principles, arts therapists from educational institutions were most characterized by humanistic principles. Less preferred were artistic / creative, active / directive, eclectic / integrative and developmental princi-
Therapeutic Preferences of Arts Therapists in Educational Environments

ple (the average scores of these principles were very similar). The least important were the psychoanalytic / psychodynamic principles.

In the next phase, the preferences of the therapeutic principles and their comparison in both subgroups were tested using a t-test. Based on previous findings (Karkou & Sanderson, 2006), we expected differences between the two subgroups, which we expected to be reflected as a higher preference for humanistic (student-oriented), developmental, active / directive and artistic / creative principles in those from educational settings. Overall, the statistical differences between the two types of work environments were not assessed as significant, however, lower preferences for eclectic / integrative and artistic / creative principles were observed among arts therapists from educational institutions (see Table 4).

<table>
<thead>
<tr>
<th>Therapeutic principles</th>
<th>Educational institutions</th>
<th>Other</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (n)</td>
<td>4.325</td>
<td>4.289</td>
<td>0.635</td>
</tr>
<tr>
<td>Humanistic therapeutic approach – average score</td>
<td>0.463</td>
<td>0.416</td>
<td></td>
</tr>
<tr>
<td>Humanistic therapeutic approach – standard deviation</td>
<td>3.216</td>
<td>3.364</td>
<td>0.292</td>
</tr>
<tr>
<td>Psychoanalytical/psychodynamic therapeutic approach – average score</td>
<td>0.842</td>
<td>0.783</td>
<td></td>
</tr>
<tr>
<td>Psychoanalytical/psychodynamic therapeutic approach – standard deviation</td>
<td>3.675</td>
<td>3.508</td>
<td>0.222</td>
</tr>
<tr>
<td>Developmental therapeutic approach – average score</td>
<td>0.762</td>
<td>0.785</td>
<td></td>
</tr>
<tr>
<td>Developmental therapeutic approach – standard deviation</td>
<td>3.765</td>
<td>3.980</td>
<td>0.034</td>
</tr>
<tr>
<td>Artistic/creative therapeutic approach – average score</td>
<td>0.661</td>
<td>0.521</td>
<td></td>
</tr>
<tr>
<td>Artistic/creative therapeutic approach – standard deviation</td>
<td>3.761</td>
<td>3.949</td>
<td>0.056</td>
</tr>
<tr>
<td>Active/directive therapeutic approach – average score</td>
<td>0.632</td>
<td>0.513</td>
<td></td>
</tr>
<tr>
<td>Active/directive therapeutic approach – standard deviation</td>
<td>3.729</td>
<td>3.960</td>
<td>0.045</td>
</tr>
<tr>
<td>Eclectic/integrative therapeutic approach – average score</td>
<td>0.749</td>
<td>0.593</td>
<td></td>
</tr>
</tbody>
</table>

Discussion

Art therapists in educational institutions can be characterized by humanistic therapeutic trends. One possible interpretation is associated with the noticeable impact of the student-centered approach, which is popular among many arts
therapists and special educators (Karkou, 1999) and which is philosophically rooted in humanistic thinking. On the other hand, other therapeutic principles have a comparable degree of significance (slightly lower than humanistic ones), while psychoanalytic / psychodynamic principles have the lowest preferences. This result very closely reflects the characteristics of the community of arts therapists in the Czech Republic, including in other work environments (Kantor, Chráska, & Ludíková, 2019). The most preferred principles among the respondents from the Czech Republic are similar to the results of the original survey in Great Britain (Karkou & Sanderson, 2006), while the least preferred principles are similar to the results of the survey in Latvia (Paica, Martinsone, & Karkou, 2013). When comparing educational and other institutions, only partial differences in artistic / creative and eclectic / integration principles are evident. This statistical difference is different from the original findings of V. Karkou and P. Sanderson (2006), although both sets appear to have many similar characteristics (e.g., the most numerous preferences for humanistic principles).

In the analysis of theoretical influences, respondents most preferred specific traditions of AT. This means that training in a specific method is still popular among therapists. At the same time, there is a high preference for an integration approach. This practice is sometimes called assimilation integration – based on specific theoretical orientations, various techniques are used and assimilated in a way that is beneficial to the student (Carere-Comes, 2020). On the other hand, it is surprising that the open questions did not reflect influences that are characteristic of the Czech AT community, such as body-oriented therapy (represented in the sample only by isolated statements about biosynthesis). This could be due to the method of sample selection or to omitting some important information on the part of the respondents, e.g., due to lack of time.

Given the results of the survey, it seems that in the Czech environment there is potential for enriching AT with approaches that have not yet been theoretically formulated and published. Some respondents from educational institutions noted that they used a theoretical framework based on the principles of various pedagogical theories. This assimilation of educational theories into therapeutic practice is another example of the influence of the educational environment on AT. An example of this trend is the close connection between Waldorf schools and anthroposophical art therapies (Intveen & Clark, 2016). The focus on positive, healthy aspects of pupils' personalities is in line with the context of the educational environment (Hayes, 2016).

In the discussion, several options were suggested for interpreting the results of the statistical analysis of the differences between the educational / other work
environment, especially those results that were in contrast to the prior assumptions. We reflected on why there were only partially significant differences that are difficult to interpret. An increased focus on developmental, artistic / creative or active / directive principles would be logical in an educational environment, not the other way around. The small (and difficult to predict) impact of the work environment may be related to the following causes:

- Limited selection of educational opportunities in AT in the Czech Republic.
- Therapists often work in several types of institutions simultaneously (part-time) and their main work environment often changes.
- The development of AT in the Czech Republic is chaotic rather than predictable. In the 1990s, many opportunities arose for the development of AT, but without a clear direction or set rules. There are also other specific demographic, historical, cultural, social and political conditions that may have influenced the development of AT.

Based on the results of this study, further considerations for practice and research in AT can be suggested:

- It would be useful to expand some items in ‘The Practice of Arts Therapies’ questionnaire to incorporate newer theoretical influences and therapeutic principles, e.g., in the area of systemic approaches or body-oriented therapies. Some items should be clarified – for example, in the item on full qualifications in AT, we assumed that respondents answered according to the professional standards of associations, but that was not explicitly stated.
- At the level of professional associations, a conceptual plan for the development of AT in educational institutions could be created and implemented in practice. Some of the ideas that emerged from this research focus on expanding the training of arts therapists in educational institutions, e.g., by implementing approaches from abroad toward AT that are typical for the environment of educational institutions abroad with the Czech therapeutic community, etc.
- Explore other aspects of therapeutic practice from the perspective of the work environment.

Given that this is the first national AT survey in the Czech Republic and the local community of arts therapists is rather fragmented, it would be useful to repeat data collection in a few years. In order to raise artists’ awareness of the importance of this research, members of professional associations were informed of the conclusions and the results were presented at several annual meetings and professional congresses.
**Study reflection**

The strength of the study is the use of a questionnaire, the items of which were based on extensive empirical research conducted in the United Kingdom and tested in subsequent national studies. In addition, the internal consistency of the data was calculated for all scale items (Table 5). The calculated Cronbach’s alpha has a higher value compared to the results of previous studies from Great Britain (Karkou & Sanderson, 2006) or Latvia (Karkou, Martinsone, Nazarova, & Vaverniece, 2011).

**Table 5. Internal consistency (Cronbach’s alpha) of arithmetic mean values of the responses concerning therapeutic principles**

<table>
<thead>
<tr>
<th>Therapeutic principle</th>
<th>Humanistic</th>
<th>Psychoanalytical/psychodynamic</th>
<th>Developmental</th>
<th>Artistic/creative</th>
<th>Active/directive</th>
<th>Eclectic/integrative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach’s alpha (Great Britain)</td>
<td>0.59</td>
<td>0.65</td>
<td>0.65</td>
<td>0.53</td>
<td>0.50</td>
<td>0.66</td>
</tr>
<tr>
<td>Cronbach’s alpha (Latvia)</td>
<td>0.55</td>
<td>0.50</td>
<td>0.50</td>
<td>0.59</td>
<td>0.69</td>
<td>0.54</td>
</tr>
<tr>
<td>Cronbach’s alpha (Czech Republic)</td>
<td>0.63</td>
<td>0.80</td>
<td>0.80</td>
<td>0.64</td>
<td>0.61</td>
<td>0.69</td>
</tr>
</tbody>
</table>

The weak point of the study was the number of respondents. The criteria for inclusion in the research set could not reach the same level of validity as was possible in countries with clear legislative rules for AT (UK, Latvia, Estonia, etc.). The questionnaire would require an update (despite its undeniable advantages) for further surveys to take into account the current concept of AT practice.

**Conclusions**

Arts therapists working in Czech educational institutions prefer mainly humanistic trends with a wide range of other therapeutic influences based on assimilative integration tendencies. This finding reflects the close relationship
between arts therapies, the student-centered approach, and various pedagogical disciplines, such as special education. Specific theories influence the practices of arts therapists, but these influences are not significant when comparing major trends in educational and other work environments. Based on the information obtained from the analysis of therapeutic preferences, similarities can be found between the practices of arts therapists in the Czech Republic and in some other European countries. The results of this study can be used to create strategies for the systematic development of AT in the Czech educational environment and for the implementation of future comparative studies in arts therapies.

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References


Stereotype-Oriented Teaching as an Effective Prospect of Korean-Ukrainian Intercultural Communication

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Abstract
The given article highlights an experimental study and pilot stereotype-oriented teaching aimed at an effective perspective of Korean and Ukrainian intercultural communication. Fifty-four Korean students of the faculty of Ukrainian studies at the Hankuk University of Foreign Studies took part in this project. The aim of the research consisted in determining and explaining the contents of ethnic stereotypes concerning Ukraine and the Ukrainians, which are common among Korean students. In addition, the study meant not only to develop effective means to overcome stereotypes, but also to offer ways how to manage them through stereotype-oriented teaching. The procedure of the analysis went through several stages: (a) revealing stereotypes through anonymous surveys among students; (b) quantitative and qualitative analysis of the data obtained; (c) stereotype-oriented / destereotyped teaching and feedback from the students. The experimental study has disproven certain fears of some researchers that stereotypes cannot be taught and spread within the learning process.

Key words: stereotypes, globalization, multiculturalism, Korean and Ukrainian intercultural communication, stereotype-oriented teaching, Korean students

1 This work was supported by Hankuk University of Foreign Studies Research Fund of 2021.
Introduction

Global processes in the modern world have changed priorities not only in everyday life, but in the system of education as well. In the sphere of language learning preparing students for efficient intercultural communication seems impossible without turning to the problem of stereotypes. In particular, ethnic stereotypes exist in every culture and are an integral part of mechanisms that the mankind has developed for interaction between cultures and a person's socialization within any national culture. Moreover, when people find themselves immersed into a globalization society, they have to become competitive in conveying their own ideas and ensuring successful and meaningful interactions (Fritz, Mölenberg, & Chen, 2002). That is why, language teachers who work with foreign students often face a problem of intercultural communication and have to adjust and be sensitive to their students’ culture. According to Huang (2013), “Since globalization makes people from diverse cultural backgrounds communicate effectively, being a global citizen has become the goal of our education” (p. 110).

Over the last decades, the Korean society has become and still is getting more diverse and polycultural due to intercultural marriages and the increasing number of foreign workers and students. Although many Koreans regard themselves to be hospitable towards representatives of other cultures, some of them still do not seem ready to immerse into a culturally diverse environment. Therefore, young Koreans often find it difficult to adjust and join effective intercultural communication.

Hankuk University of Foreign Studies (HUFS) is one of the biggest centers for learning and researching foreign languages in the Republic of Korea. Forty-five languages are taught in 52 departments, there are 182 foreign teachers (which constitutes 30% from the overall quantity) and over 2,000 foreign students every year. HUFS has become a centre for intercultural communication and a place where Korean students and teachers can feel the immediate effect of other cultures. Students of the faculty of Ukrainian studies were not a random choice as a source of research. It is one of the youngest faculties at HUFS, which was established in 2009 and is affiliated to the Institute of East European and Balkan Studies. The given group of students are a new generation that has grown and developed as personalities within global changes in the Korean society. Consequently, the stereotypes which appeared at the time of their socialization and education, namely about Ukraine and the Ukrainians as representatives of the Slavic people, as well as the problem of actual stereotypes in Korean-Ukrainian intercultural communication have not been studied properly yet.
A row of scholars in Korea and abroad have researched the problem of stereotypes in teaching Korean students as well as the Korean system of education with its peculiarities and impact on intercultural communication (Klopf, & Park, 1997, 2004; Cho, & Yoon, 2010; Kim, & Kim, 2012). The majority of these studies concentrate on teaching English as the second language, developing and introducing effective methods of teaching it in Korea and abroad to Korean students and schoolchildren, discovering intercultural sensitivity, competence of teachers and students, etc. (Park, 2012; Kim, Tatar, & Choi, 2014; Ghazarian, & Youhne, 2015; Kim at el., 2017). Generally, the researchers agree with the statement that Korea belongs to the countries where globalization, multicultural processes and intercultural sensitivity unfold rather rapidly. However, the development of language teaching is affected by the influence of Confucianism on the Korean education system (Lee, 2002; Juszczyk, & Kim, 2017), and the specificity of Korean education in which primary and secondary schools are predominantly focused on preparing the students for exams. The immediate impact of such factors becomes visible mainly at universities, particularly at the lessons of English as the second language. Therefore, it seems rather necessary and useful to research ideas, opinions and even prejudices which students of other cultures can possess concerning the culture and the country whose language they are learning. The questions of stereotypization / destereotypization and management of stereotypes when teaching Ukrainian as a foreign language in the broad context and to Korean students in particular have not been dealt with except for some works (Zbyr, 2020). This testifies to the topicality of the given paper.

**General Background of Research**

Throughout almost a hundred years, the history of research into stereotypes has been predominantly based on studying such aspects as definition, contents and the nature of the concept under analysis. Nowadays, scholars, as a rule, conclude that stereotypes are simplified standardized images, ideas or opinions of certain individuals or culture (or a group) in general (Moore, 2006). Depending on the approach, the definition varied from “units” which are the basis for ethno-centric perception, generalizations and broad categories about humans (Stewart, & Bennett, 1991) to forms of social perception (Bennett, as cited in Stewart & Bennett, 1991), unique perceptive emotional experience (Adler, 1993; Kohls, 1984), one social group’s perception of another social group (Elligan, 2008), and “mental pictures that are incomplete, biased, insensitive to variation, and resistant to disconfirming information” (Pinker, 2003, p. 201) etc. The other aspects of stereotypes that attracted scholars’ attention in the past and now include singling
out and analyzing stereotypes through the prism of sociology (the 1970s and 1980s), unconscious sources of stereotypes that were explored from the aspect of psychodynamics, or the process of stereotypization and its mechanism in the human conscience from the cognitive viewpoint (Kurtz, 1989, p. 216; Quasthoff, 1989, p. 182, as cited in Popovic, 2004). Later, since the 1990s and on, the focus has shifted to the linguistic study of the contents, i.e. language realization of stereotypes (Mieder, 1995; Eshich, 2002, etc.), discourse analysis (Scollon, & Scollon, 2000), the synergy approach, dynamic and semiotic approach, memetic approach (Gu, 2008) etc.

In recent years, much attention has been paid to managing stereotypes in education thanks to teaching English, English as the second language and intercultural communication courses. Scholars’ views on managing stereotypes do not appear to be straightforward. Some researchers claim that eradication of stereotypes proves to be problematic in intercultural education as their elimination is impossible (Lehtonen, 1994). Attempts at introducing the problem of national stereotypes into teaching foreign languages has been perceived as spreading stereotypes by teachers. A single discussion of the problem by students was estimated as threatening and the teachers were accused of strengthening the stereotypes (Peake, 2005).

There used to be an assumption that teaching a foreign language served as a perfect means for eradicating stereotypes, and both scholars and teachers identified learning a foreign language as internalization of a foreign culture which, as they believed, helped to automatically avoid stereotypes by learners of the foreign language (Byram & Risager, 1999). However, nowadays we can talk about rather successful attempts to manage stereotypes in education. Scholars have achieved great success in the process of stereotype-oriented teaching and various methods of managing them. In particular, Micah (2002) controlled stereotypes through reading an explanation (including a pre-reading activity), developing this reading, thinking about it and some extended activities. According to Belchamer (2007), destereotypization was achieved through writing a paper and individual approach to teaching the English language. The methodology of Honisz-Greens (2008) was based on self-conscience and reflection presented to teenagers through socially driven bilateral teaching activity. Furthermore, the author developed practical measures to ensure international experience of the English-language learners by using cutting-edge technological instruments such as chatrooms, video conferences, Skype etc. In another research into teaching English (Bruggeling, 2008) the results were positive and the stereotypes were eliminated through stereotype-oriented methods of teaching, namely role-plays created both by the teacher and the students with their further discussion. The research by Houghton (2009) is an
example of successful management of stereotypes through teaching English in the Japanese context. Acting by the methodological assumption that “students need to get comfortable with reflecting upon their own stereotypes in a critical way” (p. 140), the author claims to have eradicated the students’ stereotypes.

**Methodology of Research**

The main aim of the article consists in revealing ethnic stereotypes about Ukrainians that are common among Korean students and developing a set of measures to manage them with the help of stereotype-oriented teaching within the courses “Understanding Contemporary Ukrainian Cultural Code” and “Introduction to Ukrainian Studies” as parts of the curriculum for the faculty of Ukrainian studies at HUFS. In order to achieve this aim we have done a two-stage survey (at the beginning and at the end of the second semester) that focused on the views of Korean students about Ukraine and the Ukrainians. The obtained data have been compared and the results of the study now serve as an object of the given paper. Furthermore, our project aims at determining the connotations which, as a rule, the Korean students assign to the Ukrainian people and which define their (stereo)typical features. In the process of the research we have also introduced stereotype-based teaching, while the results serve as a basis for managing stereotypes and changing the students’ understanding of them.

**Participants**

The study that was carried out in autumn, 2020 at HUFS involved 54 students. The respondents included students of the 1st and 2nd years of the faculty for Ukrainian studies aged between 19 and 23 years (that average age is 21.5 years), 28 (51.85%) of them were female and 26 (48.15%) people were male. All the participants of the survey had almost equal education, namely they started learning Ukrainian at the university, have never taken part in any exchange programs for learning this language, have not lived in Ukraine for a long period of time etc.

**Instrument and Procedures**

The procedure of analysis consisted of several stages that reflect the method of determining ethnic stereotypes, quantitative and qualitative analysis of the obtained data as well as methods of stereotypization / destereotypization used for controlling students’ gradual understanding of the ways of eradicating stereotypes integrated into the studying process.
Step 1: Exposing students’ stereotypes in order to determine the problem. In order to expose national stereotypes we have carried out an anonymous two-stage survey among Korean students called “Ukraine and the Ukrainians as seen by the Koreans”. The first stage was held at the beginning of the semester, while the second one took place at the end of the semester. All the students received two question forms (with identical questions on both stages of the survey), where they had to write the ideas, images, characteristics and ideas coming to their minds when they speak or think about Ukraine. The survey had only open-ended questions and the participants were allowed to give as many answers as they wanted. The time limit was not more than ten minutes. As far as our respondents were 1st and 2nd-year students and their level of Ukrainian was rather low, the survey was performed in Korean.

Step 2: Quantitative and qualitative analysis. The obtained data on the essence of stereotypes have been analyzed and classified according to the frequency of reactions. Corresponding descriptors (30) have been defined as synonymous and similar lexical expression of reactions. The descriptors have been grouped and analyzed according to semantic components of the reactions. The data have been analyzed quantitatively and qualitatively.

Step 3: Stereotypical / destereotypical learning and the students’ feedback. The process of stereotypization / destereotypization involved numerous educational events and exercises that had been developed in order to eradicate stereotypes, in particular discussions, comments and reflections on stereotypes, critical thinking and reading, etc. To familiarize the students with the essence of stereotypes we have organized a number of activities, i.e. explicit and implicit, verbal and creolized formats, prominent features that served as a basis for stereotypes etc. These activities aimed at helping the students to figure out stereotypes and reflect on their various aspects. The students also had to do a project on Ukrainian culture, a part of which was to be devoted to stereotypes. After the project the students received a task to fill in feedback and assessment forms which performed the function of a follow-up.

Results of Research

Descriptors of Associations

First stage. The results of the first stage of the survey have shown that only 3 students (5.55%) of all the respondents answered all the questions. The other 51 students (94.45%) gave answers only to several questions of the questionnaire. We have to mention that 2 students (3.70%) have added their commentaries to the
questionnaire saying that in their childhood they used to travel a lot with their parents to Europe and they visited Ukraine as well. Thus, these were their impressions from the country and the people in Ukraine they met in their journeys. On the given stage of the research we do not consider these students’ answers, since the inaccuracy is rather slight and does not affect the results.

The data obtained in the first stage of the survey have revealed 20 reactions that were realized through 25 lexically different ways. Thirty descriptors have been singled out and ranked according to their frequency. The quantitative analysis has demonstrated such a distribution of descriptors: the descriptor with the highest rating of a Ukrainian heterostereotype was “beautiful / pretty” (frequency = 49.02%), followed by “cool” (23.53%); the next two descriptors – “kind” and “smart”, had the same frequency rating (13.79%). What concerns religion of the Ukrainians, we have singled out three descriptors in this stage, namely “Orthodox” (60.78%), “Catholic” (29.41%) and “different religions” (9.80%). The descriptors which rendered views about Ukraine were far more various: the descriptor “Russia” (33.33%) had the highest rating, while the following ones included “East Europe” (31.37%), “Donbas war” (17.65%), “Kyiv” (7.84%), “poor country” (5.58%), and rich in “natural resources” (3.92%). The descriptors characterizing Ukrainian cuisine were distributed as follows: “borshch” (41.18%), “dumplings” (27.45%), “bread” (21.57%), and “sweet taste” (9.80%). A popular kind of sport “football/ soccer” had the frequency of 58.82%, whereas famous Ukrainians included “Taras Shevchenko” (49.02%) and “Andriy Shevchenko” (29.41%). The qualitative analysis of students’ stereotypes has “painted” a stereotypical “portrait” of the Ukrainians that looked rather unambiguous. The image of a Ukrainian given by the Korean students is as follows: beautiful / pretty, cool, kind, smart, the majority of whom are Orthodox; there also are Catholics and representatives of different religions. As a rule, the Korean students associate Ukraine with Russia, the war in Donbas, Kyiv as the capital of Ukraine, poor country, which is located in Eastern Europe and is rich in natural resources. Among renowned Ukrainians the Koreans remember Taras Shevchenko and Andriy Shevchenko, and the latter represents the most popular sport in Ukraine, i.e. football; meanwhile, Ukrainian national cuisine is represented by such dishes as borshch, dumplings, bread, sweet taste etc.

Second stage. The results of the second stage of the survey differ drastically from the previous one. In this stage, all the respondents answered the full set of questions in the questionnaire. However, the majority of Korean students gave two or three answers to each question and only some of them gave a single answer. Nonetheless, it was not the primary aim of the given research, so the number of answers to each question will not be taken into account. What is more, the
majority of answers in the second stage coincided with those given in the first stage of our research.

The data obtained in the first stage of the survey have discovered 55 reactions that were realized through 65 lexically different ways. The quantitative and qualitative analyses have demonstrated the following images of Ukraine: this is the country located in “East Europe” – 33.3%, the majority of its territory are “vast plains/step” – 16.67%, the capital is “Kyiv” – 12.96%, “annexation of Crimea” – 12.96%, “war in the east” – 9.26%; is associated with “beautiful women” – 5.56%, “football” – 3.70%, the national colors “yellow & blue” – 3.70%, “my major study” – 1.85%; with developed “space industry and high-tech industry” – 44.44%, “aerospace” – 31.48%, “agriculture” – 14.81% and “abundant resources” – 9.26%; the national dishes include “borshch” – 31.48%, “holubtsi” – 14.81%, “bread” – 11.11%, “varenyky” – 11.11%, “oats” – 9.26%, “meat dishes” – 7.41%, “stewed vegetables” – 5.56%, “chicken dices” – 5.56%, “strong taste” – 1.85%, “sweet taste” – 1.85%; popular kinds of sport (“football/soccer” – 55.56%, “rhythmic gymnastics” – 35.19%, “chess” – 9.26%); art is associated with “Kobzari” – 31.48%, “classical music” – 24.07%, “Taras Shevchenko” – 14.81%, “religious works of art” – 12.96%, “Lviv and the Ensemble of the Historical Centre” – 9.26%, “Saint Sophia Cathedral” – 7.41%, “Murals” – 1.85%; famous Ukrainians include “Taras Shevchenko” – 51.85%, “Andriy Shevchenko” – 27.78%, “Pavlo Chubynskyi” – 7.41%, “Ivan Franko” – 7.41%, “Yulia Tymoshenko” – 5.56%. The Korean students have such an image of a Ukrainian: “beautiful women” – 31.48%, “pretty” – 29.63%, “beautiful eyes” – 27.78%, “cool” – 16.67%, “handsome” – 14.81%, “beautiful appearance” – 12.96%, “active” – 14.81%, “silent” – 11.1%, “sincere” – 11.1%, “kind” – 9.26%, “not lazy” – 5.56%, “logical & smart” – 16.67%, the majority of whom are “Orthodox” – 50.00%, “Catholic” – 33.33%, “Most of them are Christians” – 11.11%, “different religions” – 5.56%.

After comparing the results in the first and second stage of the survey one can notice considerable changes in the Korean students’ views about Ukraine and its people (see Figure 1). The qualitative analysis of the second stage confirms a more generalized image of Ukraine and the Ukrainians. Not only did the Korean students manage to answer all the questions in the questionnaire, but they also gave more than one answer to the question about their associations with Ukraine, enumerating several stereotypical features of character of the Ukrainians, their appearance, etc. The quantitative analysis of data has revealed that 88% of heterostereotypes about the Ukrainians were positive, 12% were neutral and there were no negative ones. Thus, this fact has become a starting point for many discussions at the lessons and has led to developing focused awareness through various activities, control and eradication of stereotypes.
Module of Stereotype-Oriented Teaching

The research has applied a complex methodology not only for eliminating ethnic stereotypes, but also to some extent for allowing the Korean students to shape certain stereotypes with the help of different activities, exercises, texts etc. Stereotype-based teaching was based on authentic texts from modern literature, films, cartoons, jokes, idioms, proverbs and sayings, mass media, Internet forums, blogs, students’ personal experience and the experience of the author of the given paper etc. We have organized four focus-awareness types of events that aimed at switching the students’ attention from one aspect of ethnic stereotypes to another in order not to just highlight these aspects, but also to encourage them to think critically. Three types of activities focused on various manifestations of ethnic stereotypes in the language (Activity 1), non-verbal (Activity 2) and creolized (Activity 3) formats. Activity 4 drew attention to fundamental features of ethnic stereotypes.

Therefore, Activity 1, which aimed at detecting language manifestation of stereotypes, included some tasks for tracing the language realization of ethnic stereotypes in an authentic text; identifying the status of a certain language means used for stereotypes; generalizing linguistic methods of presenting stereotypes and considering the role of a language in creating stereotypes in intercultural
communication. Activity 2 focused on drawing the students’ attention to another (non-verbal) way of conveying a stereotype. The task for students was to determine non-verbal features presenting stereotypes and to consider the role of non-verbal means in realization of ethnic stereotypes. The Activity 3 aimed at developing students’ focus awareness by drawing their attention to verbal and non-verbal depiction of ethnic stereotypes. The students had the following tasks: to interpret or comment semiotic signs and language manifestation; to elaborate on the role of two heterogeneous systems (natural language and semiotic signs), namely what is more expressive and influential, how they complement or contradict each other; to answer the questions on how the cartoon affected them. The Activity 4 consisted in determining characteristic features of ethnic stereotypes, which serve as a basis for stereotypes in general. The students were offered to find stereotypes in texts and comment on their major features as well as determine if those characteristics are true to life, and consider the question why a stereotypical person as a rule blames the others.

Each type of the activities was meant to encourage reflections on the main aspect of stereotypes. Exercises with various tasks were developed to improve critical thinking skills that helped to perceive ethnic stereotypes theoretically. The tasks were based on certain definitions, alternative theoretical views, positively and negatively marked stereotypical expressions which the students were asked to consider. The tasks for critical reading, which aimed at developing critical thinking skills, were taken from the article by Robert L. Heilbroner (1961), Don't Let Stereotypes Warp Your Judgments. There were assignments that encouraged the students to think over some reflections and ideas in order to explore authors’ views and express their own opinions.

Due to the limited time for teaching stereotypes in the curriculum, the Korean students also had an assignment to write an essay on ethnic stereotypes as a part of integral and more comprehensive research project on the Ukrainian culture. The task was assigned at the beginning of the semester and the deadline was due three weeks before the semester finished. The students were free to choose between a processed text and the PowerPoint presentation. In order to get the students’ feedback and discover changes in the perception of stereotypes in general as well as ethnic heterostereotypes of the Ukrainians in particular, we have carried out one more survey and the students were asked to fill in a feedback and assessment form.
Attitudes to Ethnic Stereotypes

We could monitor changes in the students’ attitude from three main sources: (a) the teacher’s evaluation of both written and oral answers during seminars, (b) the feedback and assessment forms and (c) the part of a research project on stereotypes. After integrating various activities into the studying process, the students’ attitude to stereotypes has changed a lot. The axiological aspect of stereotypes gave us the understanding that stereotypes can be positive, negative and neutral. The general tendency of all the activities and exercises for critical thinking has allowed the students to perceive the nature of stereotypes and the ways to eradicate them. In particular, here we mean the critical reading assignment where the students discussed Heilbroner’s article on stereotypes. Positive changes in the students’ attitude could be vividly traced from the feedback and assessment forms.

Discussion

The purpose of this pilot research was to define and explore the essence of ethnic stereotypes about Ukraine and its people that are common among the Korean students. We also aimed at developing activities for eliminating them as well as managing them through stereotype-oriented teaching. The first stage of the survey preceded the given research. The data obtained from the survey have confirmed the author’s expectations that the Korean students have a one-sided perception of the Ukrainians. The quantitative analysis has revealed positive features that prevailed in heterostereotypes about the Ukrainians along with the neutral ones. Meanwhile, the qualitative analysis has demonstrated a rather primitive content of stereotypes. The statistics of the quantitative analysis as well as the results of the qualitative analysis testify to people’s prejudices. They do not think critically, but have a superficial understanding of stereotypes and believe that these stereotypes do not affect the studying process. Experimental research and preliminary stereotype-oriented teaching has led the author to the thought that it seems much easier to teach skills than to develop the right attitude to stereotypes. Despite the fact that the skills can be acquired through experimental studies, the attitude requires reflexive approaches to learning because it is based on cognitive processes and is deeply rooted in the people’s conscience. Furthermore, we have discovered that the students do not only gradually develop their skills in eliminating their own stereotypes in the intercultural context, but also acquire sensitivity to and understanding of ethnic stereotypes and changes in their own paradigms.
After getting familiar with the non-verbal format, the students understood that stereotypes could be represented through various explicit and implicit means as well as formats (verbal, non-verbal and creolized one). The non-verbal format of the stereotype is as important as the verbal one, since both verbal and non-verbal channels shape the infrastructure of the person's information. Realization of the stereotype in creolized texts, which have never been used to analyze stereotypes in intercultural communication, was rather innovative. The importance of the given format can be vividly seen in its emotional impact on the person's perception. Creolized texts have singled out two systems of expressing stereotypes in their interaction, i.e. natural language and semiotic signs (animated movies).

Learning about the axiological aspect of stereotypes allowed the students to realize that there can be negative, positive and neutral stereotypes (the majority of students were certain that stereotypes can be only positive). Their theoretical awareness of ethnic stereotypes has risen after a series of exercises that highlighted the typology of stereotypes, contrasted theoretical definitions of stereotypes, discussed alternative views on the problem of teaching stereotypes and considered what was wrong in the sentences with stereotypical utterances.

The students’ impressions from the feedback and assessment forms testified to positive changes. The majority of them gave various answers to the question “Now that I have done some research into Ukrainian culture what can I personally do in order to avoid stereotypes, culture shock and understand a foreign culture?” For instance,

“I think I’ll be more attentive to representatives of other cultures, common cultures and subcultures. I won’t make conclusions about their “weird” behavior. I’ll try to communicate with people of different cultures and learn as much as I can about the people who represent this or that culture”. (translated from Korean)

Conclusions

Experimental research and preliminary stereotype-oriented teaching have allowed us to make three main conclusions.

Firstly, the Korean students interpreted heterostereotypes of the Ukrainians in the context of their own culture, and that was why evaluation of the same feature differed drastically from the way the Ukrainians perceived themselves. One can mention vivid interpretations of the following descriptors like “logical & smart” (“… is inventive, logically formulates the aim and tasks, knows how to put them
Stereotype-Oriented Teaching as an Effective Prospect of Korean-Ukrainian Intercommunication

into practice” etc.). Lexical realization of the given descriptor presupposes positive interpretation of this content in the Korean culture, but it is neutral in the Ukrainian culture. As a matter of fact, the Koreans are usually good at putting the other people’s ideas or inventions into practice, while they have some problems with their own ideas and critical thinking. In the eyes of the Korean students Ukraine is rich in “natural resources”, has highly developed “space industry and high-tech industry”, which was evaluated as a positive feature. Meanwhile, reactions like “poor country” had a negative connotation, since Korea does not have plenty of mineral resources but still is a technologically developed country. This can be explained by the fact that the Koreans and the Ukrainians have different assessment of and attitude to progress.

Secondly, stereotype-oriented teaching has to be integrated into all the courses despite the fact that some scholars believe that it is impossible to teach stereotypes (Lehtonen, 1994). The given research has shown that stereotypes have to be taught in a specific way so as to gradually draw the students’ attention to ethnic stereotypes, shift their focus awareness onto the necessary object of analysis (their character, implicit and explicit perception, characteristic features that stereotypes are based on, their types, functions, etc.), ponder over stereotypes, discover alternative views, introduce critical thinking and reading, which highlights various aspects of the problem. Stereotype-oriented teaching has been integrated into the courses “Understanding Contemporary Ukrainian Cultural Code” and “Introduction to Ukrainian Studies” through focus awareness, critical thinking and a reflexive approach that was implemented in the given research. This has demonstrated positive changes from an unconscious stereotype to a well-thought one.

Thirdly, if stereotype-oriented teaching had been applied the students’ attitude towards stereotypes would have changed from unconscious stereotypical assumptions to the conscious understanding of them. In this pilot study we have managed to disprove the fears some authors had about spreading stereotypes through teaching them (Peake, 2005). This conclusion is based on the students’ feedback that vividly demonstrated the change in their attitude to stereotypes. In our view, stereotype-oriented teaching could help the Korean students not only to solve the problem of Korean-Ukrainian intercultural communication, but also to develop their critical thinking, perceive multiculturalism as an undeniable phenomenon of our life today and accept other cultures without prejudices.

With these hopeful preliminary conclusions the author of the paper sees the perspective of further research in introducing updated means of collecting data, namely questionnaires before and after the survey, new methods, using internet technologies (i.e. social networks) to connect with students from other countries.
and cooperate with scholars in order to find the best ways of managing stereotypes. In the future we plan to write a textbook on stereotype-oriented teaching that could help students (Korean students, in particular) to understand various world cultures and contexts as well as improve perception of our world with its fast globalization and slow-changing stereotypes.

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Psychological Well-being of Senior Secondary School Students of Kashmir Valley in Relation to their Place of Living and Academic Achievement

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Abstract

The aim of the study was to investigate the influence of place of living on psychological well-being of students studying in senior secondary schools and to test for interaction effects of place of living and academic achievement on psychological well-being. The analyzed data set contained information on 519 boys and girls in the 11th grade from the Kashmir valley of Jammu and Kashmir India. The study has a survey type design. Psychological well-being scale developed by Dr. Devendra Singh Sisodia and Ms. Pooja Choudhary (2012) has been used. The marks obtained in science by students served as the indicator of academic achievement. The statistical analysis was 2 × 3 (ANOVA) factorial designs. Results reveal a significant effect of the place of living on psychological well-being and show no significant interaction effect between the academic achievement levels (groups) in science and the place of living in terms of the psychological well-being of senior secondary students.

Key words: psychological well-being, academic achievement, place of living, senior secondary students

1. Introduction

In contrast to psychopathology, the field of positive psychology focuses on understanding the conditions that enhance individuals' life satisfaction (Seligman
and Csikszentmihalyi, 2000; Suldo and Huebner, 2004). This focus on conditions has the potential to fundamentally enrich and widen the study of psychological well-being, as it not only includes individuals who are already at risk of developing illnesses and show significant levels of psychopathological symptoms, but also healthy and normal-functioning individuals as well. Therefore, the positive psychology contributes to the development of prevention and intervention programs of mental hygiene goals (Greenspoon and Saklofske, 2001; Stewart and Suldo, 2011).

The period of adolescence is characterized by emotional upheaval (Gilman and Huebner, 2003) as well as exposure to both more opportunities and risks (Chow, 2005), adolescents are at a risk of developing psychological ill-being. Furthermore, they face and they are exposed to a great number of challenges and stressors that are related to school life. For this reason, research on adolescents’ well-being has been based in the context of education, in both regular (Huebner, 1997) and in special education (Crocker, 2000). This reflects a significant shift in perspective of seeing the students from a functionalist view to the point of seeing them not only as learners but promoting their rights and needs as well (Bullinger, 2009).

Students face increased pressure to succeed academically today, especially in highly selective, private and academically rigorous schools, investigators have examined the relationship between students’ academic achievement and psychological well-being, and so far, studies focusing on this relationship have shown conflicting results. In today’s competitive world, students face different academic challenges. Such environment at times makes them bold and strong whereas on other times makes them feel stressful, worried and anxious. Fear of failure, building self-identity, high level of competition etc are some of the examples of the problems faced by students at the senior secondary school level. In such conditions, their psychological well-being becomes the subject matter to be addressed. Present study focuses on studying the psychological well-being of the senior secondary students in relation to academic achievement and place of living. Although research carried out before did not consistently find correlations, latest studies have reported a positive relationship between adolescents’ academic achievement and psychological well-being (e.g., Kirkcaldy et al., 2004). Therefore, investigators have emphasized the importance of examining any underlying mechanisms and potential moderating variables of this relationship (Suldo et al., 2006). As earlier studies on students’ well-being and academic achievement have been criticized for not taking into consideration any demographic or contextual information (Suldo et al., 2006), studies concentrating on potentially moderating variables (contextual information) of this kind such as place of living or socio-economic background,
have not been carried out yet. To address this research gap, the present study set out to examine whether the place of living, moderated the relationship between students’ academic achievement and psychological well-being.

2. Methodology

The survey type of study which falls under the broad descriptive method was used to get the required data for analysis.

2.1. Population

All the senior secondary school students of Kashmir valley affiliated to the Jammu and Kashmir Board of School Education (JKBOSE) was the population of the study.

2.2. Sample

For the present study, 519 senior secondary school students were selected from the Kulgam and Anantnag districts of Kashmir valley, from the schools affiliated to the Jammu and Kashmir Board of School Education (JKBOSE). The sampling technique selected was Multistage stratified random sampling technique. The criterion of stratification was the place of living. The different stages for sample selection were the selection of districts, educational zones, schools and finally the students who were stratified on the basis of place of living.

2.3. Tools for Data Collection

The tools of data collection were Psychological Well-Being Scale (PWBS) developed by Dr. Devendra Singh Sisodia and Ms. Pooja Choudhary (2012) and academic achievement as the marks obtained by senior secondary school students in the board examination conducted by JKBOSE. It is necessary to mention here that the total sample of senior secondary school students was divided into three groups on the basis of marks obtained in science. These are (a) High achievement group, (b) Average achievement group and (c) Low achievement group. The academic achievement in science for the present study was assessed through the marks obtained by the 11th class students of science stream in the subject of science of 10th class examination conducted by the JKBOSE in the year 2014-2015. The marks of the sampled students were received through the information sheets. The students were requested to write their marks obtained in the science subject of the class 10th examination conducted by JKBOSE. Then these marks
were also cross-checked with the official record. These marks were then converted to standard scores by changing raw scores to standard scores using the formula:

\[ T = \frac{10(X-M)}{\sigma} + 50 \]

where:
- \( X \) = Raw score,
- \( M \) = Mean of raw score,
- \( \sigma \) = Standard deviation of the raw score.

2.3.1. Selection of High Achievement Group (HA), Average Achievement Group (AA) and Low Achievement Group (LA)

Based on the scores in the academic achievement in Science, the subjects were classified into three groups, viz., High, Average, and Low. The Mean (\( M \)) and Standard Deviation (\( \sigma \)) of the distribution of scores on academic achievement in Science for the whole sample were determined. The subjects whose scores were at or above \( (M + \sigma/2) \) were grouped as a High group and those subjects whose scores were at or below \( (M - \sigma/2) \) were grouped as Low. Those subjects whose scores were in between \( (M + \sigma/2) \) and \( (M - \sigma/2) \) were grouped as Average.

3. Objectives

1) To study the difference in the psychological well-being of senior secondary students based on the place of living.
2) To study the interaction effect between the academic achievement levels (groups) in science and the place of living in terms of the psychological well-being of senior secondary students.

4. Null-Hypotheses

1) There is no significant difference in senior secondary students’ psychological well-being based on place of living.
2) There is no significant interaction effect between the academic achievement levels (groups) in science and the place of living in terms of the psychological well-being of senior secondary students.
5. Analysis and Interpretation

The statistical analysis of the collected data from the sampled students was carried out objective wise which is as follows:

5.1. Objective 1:

The objective of the survey was to study the difference in the psychological well-being of senior secondary students in terms of academic achievement levels (groups) in science and place of living.

In order to study the above-mentioned objective, following Null hypotheses were formulated for their empirical testing:

5.1.1. Null Hypothesis

There is no significant difference in senior secondary students’ psychological well-being based on the place of living.

5.1.2. Null Hypothesis

There is no significant interaction effect between the academic achievement levels (groups) in science and the place of living in terms of the psychological well-being of senior secondary students.

To check the difference in the psychological well-being of senior secondary school students with respect to the place of living and achievement levels in science in a combined fashion and in the main effect, we used two-way ANOVA with 2×3 factorial design and the results are shown in the table 1 below:

Table 1. Summary of 2×3 (ANOVA) factorial design for the scores of Psychological Well-Being according to the levels of Achievement in Science and Place of Living

<table>
<thead>
<tr>
<th>Source</th>
<th>N</th>
<th>Mean</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place of living</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>189</td>
<td>193.25</td>
<td>742.406</td>
<td>1</td>
<td>742.406</td>
<td>1.991</td>
<td>.020**</td>
</tr>
<tr>
<td>Rural</td>
<td>330</td>
<td>196.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achievement levels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>183</td>
<td>200.81</td>
<td>13910.700</td>
<td>2</td>
<td>6955.350</td>
<td>18.650</td>
<td>.000*</td>
</tr>
<tr>
<td>Average</td>
<td>173</td>
<td>192.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>163</td>
<td>189.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place of living × Achievement levels</td>
<td></td>
<td></td>
<td>794.560</td>
<td>2</td>
<td>397.280</td>
<td>1.065</td>
<td>.345</td>
</tr>
<tr>
<td>Error</td>
<td></td>
<td></td>
<td>191319.440</td>
<td>513</td>
<td>372.942</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>19799270.000</td>
<td>519</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 0.01 level;  ** Significant at 0.05 level
As it can be seen in table 1, the value of F for the place of living (F=1.991, P<0.05) is significant at 0.05 level. Therefore, the investigator concludes that there is a significant effect of the place of living of students on their psychological well-being. Hence, the Null hypothesis 1 stands rejected at 0.05. It is also evident from table 1, that there is an insignificant F interaction value (F=1.065, P>0.05) between the place of living and achievement levels in science of students meaning that there is no combined effect of these two independent variables (place of living and achievement levels in science) on the dependent variable (psychological well-being). The table 1 shows that there is a significant difference in psychological well-being of students based on the place of living. Further, it is shown from the analysis that there is a significant difference in the psychological well-being of students among the levels of achievement in science. The figure 1 shows that the lines of profile plot are not parallel with each other but in reality, the difference between them is not enough to produce a common significant effect on the outcome of the psychological well-being of senior secondary school students. Hence, the Null hypothesis 2 stands accepted.

Figure 1. Interactional Effect of the Place of Living and the Academic Achievement levels in Science on Psychological Well-Being of students
6. Findings of the Study

Through this study the following findings have been found:

- The variable of Psychological Well-being clearly discriminated between High achievers and Average achievers in science; and High achievers and low achievers in science. However, there was no discrimination found between Average achievers and Low achievers in science on the above variable.
- A significant difference was found between the urban and rural school students in their psychological well-being.
- The insignificant interactional effect was found between place of living and academic achievement levels in science on the Psychological well-being of senior secondary school students.

Acknowledgment:
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Analysis of Anxiety, Knowledge, and Beliefs Toward E-Learning During Covid-19: The Case of Science Teachers in Aceh, Indonesia

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Abstract
The aim of this research is to analyze anxiety, knowledge, and belief toward e-learning acceptance, especially by science teachers in high schools in Aceh, Indonesia. About 117 teachers were randomly selected for this study. A questionnaire was used to collect data, and analyzed using the Likert scale. The results indicate that most teachers view the use of e-learning in teaching science to be positive. Despite the fact that only half of them are knowledgeable in the use of media and have concerns about some negative effects of e-learning on students, they still believed in the usefulness of e-learning in science education. Hence, more related research is recommended to further corroborate the findings of this study.

Key words: science teacher; e-learning; anxiety; knowledge; belief; education

Introduction
The rapid growth of e-learning is due to several benefits, such as providing solutions for easier learning, applying paperless technology, and maintaining high standards and quality of education (Irwandi et al., 2018). The rapid development of information technology today is not separated from the daily teaching and learning activities of teachers and students when using e-learning (i.e., electronic learning) (Srivastava et al., 2014). Information and Communication Technology (ICT) and e-learning offer a chance to improve the quality of education because
communication technology is revolutionizing the way we live, learn, work, and even the way we play today (Halim et al., 2018a; Halim et al., 2018b). Accordingly, Yunis and Kristian (2017) said that the e-learning is a learning source that optimizes electronic media and ICT in the education process to facilitate the explanation and transfer of knowledge from teachers to students in a digital room.

Studies in the field of e-learning have been carried out, mainly related to the acceptance of e-learning technology as a learning medium (Teo, 2010), barriers in using e-learning in learning (Chan, 2019; Muslem et al., 2018), the attitude of education staff towards the use of e-learning (Redmond, Lock, 2019), and the implementation of assessment with e-learning (Resta et al., 2020; Halim et al., 2020). The user's attitude towards the use of e-learning as a medium of learning at schools and in colleges have also been studied, including the attitude of e-learning users as influenced by gender (Chen et al., 2018), by local culture (Chen, Nath, 2016), and by belief (Karim & Nigar, 2014). Based on the results of previous studies it can be understood that the culture and religion of users influence the teachers’ attitudes towards media-based IT learning, including e-learning. But there has not been a study of attitudes on the use of technology in the educational environment by users who obey religious teachings and live in an Islamic cultural environment.

Regarding religious freedom, the Aceh government is given the freedom to implement the Syariah law (Islamic religious law) in the world of education, for example, Muslim female teachers and students are required to wear hijab in schools and colleges. For years, Aceh was famous for its closed and conservative lifestyle, but after the 2004 conflict and tsunami that hit the region, and the subsequent Helsinki MoU agreement (Ronnie, 2016), there was a shift in culture, social life, and transformation in the world of education (Grayman, 2016).

**Problem of Research**

Previous studies on Acehnese teachers have focused on the challenges in facing the ICT era in teaching and learning. Nevertheless, studies on how prepared these teachers are, particularly those majoring in science, in accepting e-learning in the classroom have not been fully explored. Therefore, this study intends to fill the gap. Consequently, the research question for this study is formulated as follows:

- **What is the level of acceptance of e-learning by high school science teachers in Aceh, Indonesia?**

This is essential to investigate because today, science and technology are strongly interrelated. Teachers were chosen as the subjects of this study because they play a role in motivating the students to learn better through e-learning. Presumably, if teachers are known to be well-prepared to implement e-learning in the classroom,
then they have greater potential to provide effective teaching and learning to the students.

**Research Focus**

This study is focused on (1) the level of teacher anxiety about the use of e-learning in physics learning, (2) the level of teacher belief in the use of e-learning in physics learning, (3) the level of teacher knowledge of the use of e-learning in physics learning, and (4) the relationship between these variables.

**Methodology of Research**

**General Background of Research**

During the Covid-19 pandemic, the implementation of learning from primary to secondary schools in Indonesia is generally required to use online media. The same is true in Aceh Province, there are schools where learning is still carried out face-to-face and many schools have used online learning media. Moreover, Aceh is the only province in Indonesia that applies Islamic Syariah law, and so its people strongly adhere to Islamic religious values. As a result, when teachers are required to use online media, various forms of attitudes, perceptions, or views have emerged regarding the acceptance of online media for learning. Therefore, it is important to know in-depth the level of acceptance of online media by science teachers in Aceh in terms of anxiety, belief, and knowledge.

**Sample of Research**

13 districts out of 23 in Aceh province were chosen as the location of research. Three high schools were selected from the city in each district, making a total of 39 schools involved in this study. The chosen high schools are known to support their teachers and students with the use of e-learning. Furthermore, three science teachers were selected from each high school, making a total of 117 teachers as the respondents of this study.

**Instrument of Research**

The questionnaire is used as the instrument to collect data. It is adapted from Teo (2010), thus some of the items are modified to suit the context of this research. Therefore, the indicators in this study are modified to anxiety, belief, and knowledge on the use of e-learning. Further references were also used to compose the
items for the anxiety indicator; these items are based on the theories proposed by Parkinson et al. (2008). Meanwhile, for the belief indicators, references from Haste (2004) were applied. Finally, for the knowledge indicator, the references from Tsai (2009) were employed. The initial draft consisted of 25 items. This was given to educational technology experts specializing in the use of e-learning in the teaching and learning process. After the experts’ assessment and judgment, seven items were discarded as they did not suit the context of this study. At the end, 18 items were used in the questionnaire. Accordingly, the researchers revised this questionnaire into the Instrument of Science and E-Learning Attitude Scale (ISEAS), with six items related to anxiety, six items related to beliefs, and six items related to knowledge. The ISEAS instrument has been tested for its validity and reliability to 125 high school science teachers in Banda Aceh, Indonesia. The result of the validity index is 0.670 and the reliability index is 0.743; this implies that the instrument is within the category of validity and very good. The response for each item of the ISEAS is classified into 4 categories, which are 1) strongly disagree, 2) disagree, 3) agree, and 4) strongly agree.

Data Analysis
The collected questionnaires were later analyzed using descriptive statistics. The mean was used to determine the highest positive responses for each item. To obtain information about the relationship between the research variables, analysis was carried out using inferential statistics with the Pearson product-moment correlation formula (r).

Results and Discussion

Analysis for Anxiety
Table 1 shows that most science teachers feel the anxiety to teach science subjects through e-learning. This is supported by item A2, which states “I do not enjoy discussing e-learning with colleagues”, and this suggests that these teachers are not keen to talk about or learn more about e-learning from each other. In view of that, Gungor and Akdag (2018) state that anxiety plays a role in the implementation of technology. Therefore, lesser anxiety corresponds to a greater positive impact on the use of e-learning in teaching.

Meanwhile, a quarter of the teachers have concerns regarding the use of e-learning. The emergence of these concerns is influenced by the number of increasingly sophisticated technological tools that enable access to a variety of information
Analysis of Anxiety, Knowledge, and Beliefs Toward E-Learning During Covid-19 throughout the world (Gungor, Akdag, 2018). It can be said that most of the students in Aceh, especially those residing in the cities are familiar with the use of ICT and some can be said to even understand it better than the teachers. It may result from the fact that in the teachers’ opinion, e-learning cannot be implemented in the school environment for students. In addition, half of the teachers reported that they feel nervous to learn something new and the process requires doubled effort in thinking about how to utilize e-learning in teaching. The emergence of these concerns is conceivably due to their lack of knowledge on ICT, despite the facilities or software already made available to them in their institutions. Most teachers feel comfortable with the methods that they have utilized for many years, and thus to learn something new requires much effort; this is especially marked in teachers who have aged (Muslem et al., 2018; Yusrizal et al., 2020).

### Analysis of Belief

Table 2 shows that most science teachers already have a high level of belief in the use of e-learning to teach their students. They believe that this medium will make teaching easier, more enjoyable, and more meaningful (Dai et al., 2017). In addition, teachers also believe that the government will make the rules needed to control any dangerous developments in e-learning activities. Teachers try to enjoy and motivate their students while studying with e-learning because they

<table>
<thead>
<tr>
<th>Code</th>
<th>Items of Anxiety Indicator</th>
<th>Response of Teachers (%)</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>The use of E-learning in learning will be a new problem for me.</td>
<td>3.39 27.12 47.46 22.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>I do not enjoy discussing e-learning with colleagues.</td>
<td>0.00 5.08 38.98 55.93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>Using e-learning will give users a chance to access web pages normally not available to them.</td>
<td>13.6 25.42 40.68 20.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A4</td>
<td>Using e-learning makes me nervous and requires more thinking in the process.</td>
<td>3.39 18.64 59.32 18.64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A5</td>
<td>The impact of e-learning is that students’ social skills will decline.</td>
<td>1.69 27.12 55.93 15.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A6</td>
<td>The technique of direct or face-to-face interactions through learning will be lost if the learning is merely by e-learning.</td>
<td>3.39 20.34 59.32 16.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Average Total Score: 4.24 20.62 50.28 24.86
believe that when this happens, new positive values and beliefs can be formed and represent a developing community (Wang, 2014).

Table 2. The belief of science teachers to use e-learning

<table>
<thead>
<tr>
<th>Code</th>
<th>Items of Belief Indicator</th>
<th>Response of Teachers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>B1</td>
<td>I believe the government will make the rules needed to control any dangerous development in e-learning activities.</td>
<td>22.03</td>
</tr>
<tr>
<td>B2</td>
<td>Learning with e-learning makes learning easier, more enjoyable, and more meaningful.</td>
<td>38.98</td>
</tr>
<tr>
<td>B3</td>
<td>Western beliefs, values, and thoughts are embedded in the learning system with e-learning.</td>
<td>1.69</td>
</tr>
<tr>
<td>B4</td>
<td>When e-learning is enjoyed by all communities (teachers, students, and students), new values and beliefs are formed that represent the community.</td>
<td>15.25</td>
</tr>
<tr>
<td>B5</td>
<td>E-learning will progress and develop in the same way, regardless of user cultural intervention because e-learning is universal.</td>
<td>20.34</td>
</tr>
<tr>
<td>B6</td>
<td>I will stop using e-learning if I know that e-learning can harm users.</td>
<td>30.51</td>
</tr>
</tbody>
</table>

Average Total Score

|                      | 21.47 | 53.95 | 20.62 | 3.95 |

About 29 teachers, or one fourth of the respondents, are reluctant and have doubts on the use of e-learning to their students. The reluctance is based on their belief that this new technology, via the Internet, can instill in their students “Western” beliefs, values, and thoughts, which these teachers believe are against their own religious and cultural beliefs, values, and thoughts of Muslims in general (Twofeek & Jaafar, 2012). The concept of Western beliefs and values is generally perceived by these teachers as against Islamic teaching. This makes them stick to the traditional teaching methods that do not require ICT use in the process because they are afraid that their students can be influenced by these Western ways when they are exposed to IT-based learning. Nevertheless, this condition may be due to their lack of readiness, available infrastructure, and lack of training related to e-learning. Despite the fact that the teachers are provided with e-learning facilities they are not ready to use them as the teachers lack professional training on how to use e-learning facilities. Accordingly, training is essential for teachers so that positive outcome can be achieved to fulfill the goals of teaching (Hameed et al., 2008).
Analysis of Knowledge

Table 3 shows that most science teachers know that the facilities commonly used in e-learning are the internet, intranet, extranet, CDROM, and videotape. They are aware that e-learning can be used anywhere and anytime, and thus time and place are not a problem in conducting the teaching and learning process. Of course, the use of e-learning is inseparable from internet services. If the services are adequate, e-learning can be more flexible because students can study anytime, anywhere, and with different types of learning techniques within this medium.

<table>
<thead>
<tr>
<th>Code</th>
<th>Items of Knowledge Indicator</th>
<th>Response of Teachers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1</td>
<td>E-learning can be used anywhere and anytime.</td>
<td>23.73 64.41 11.86 0.00</td>
</tr>
<tr>
<td>U2</td>
<td>The facilities commonly used in e-learning are the internet, intranet, extranet, CDROM, and videotape.</td>
<td>20.34 77.97 1.69 0.00</td>
</tr>
<tr>
<td>U3</td>
<td>Supporting software for running e-learning that is often used is Moodle, Sakai, WebCT, and Claroline.</td>
<td>5.08 25.42 62.71 6.78</td>
</tr>
<tr>
<td>U4</td>
<td>E-learning does not require the paper; it is global and very addictive.</td>
<td>15.25 45.76 38.98 0.00</td>
</tr>
<tr>
<td>U5</td>
<td>The teacher only includes reading material, sources, and feedback in the e-learning.</td>
<td>15.25 52.54 32.20 0.00</td>
</tr>
<tr>
<td>U6</td>
<td>I understand that e-learning can be used for small and large classes.</td>
<td>20.34 66.10 11.86 1.69</td>
</tr>
<tr>
<td></td>
<td>Average Total Score</td>
<td>16.67 55.37 26.55 1.41</td>
</tr>
</tbody>
</table>

Table 3 shows that most science teachers know facilities are commonly used in e-learning. First of all, the internet service must be adequate so that e-learning is effective. Second, they are also aware that e-learning can be used without any restrictions to place and time conducting the teaching and learning process. The teachers can also save time during the teaching-learning process and train students to be more independent in learning (Ambusaidi et al., 2018). Besides that, half of the teachers are also familiar with the supporting software that are needed to run e-learning. E-learning electronic circuits are used to convey the contents of learning, interaction, or guidance (Dyson, 2004).

The results further show that only half of the teachers have enough knowledge on the use of e-learning. It can be concluded that the teachers’ knowledge, at large, on e-learning is still not optimal. From the knowledge indicator, it can be assumed that only half of the teachers (about 58 teachers) of this study make use of e-learn-
ing facilities that have been provided by their schools. Therefore, there is a need for more training for these teachers to use e-learning in the teaching and learning process. Hence, Keramati et al. (2011) assert that the readiness of teachers and sufficient training are among the most important factors in e-learning to improve teachers’ knowledge and motivation to use it.

The Correlation between Indicators

The results from the three indicators that assess the science teachers’ e-learning acceptance show that there is a strong correlation between anxiety, belief, and knowledge. Between anxiety and knowledge, the correlation coefficient for the science teachers is -0.67. This result denotes that the correlation is negative and has a fairly strong relationship, which means that a high level of knowledge will lead to a low level of anxiety. Therefore, in relation to the results of the questionnaire, especially to the knowledge indicator, there is an urgent need for more training for these science teachers on how to use e-learning and be well-informed on its benefits along the process. Once teachers are equipped with enough knowledge, their anxiety will be reduced, and they can even be motivated to use group methods in e-learning networks (Handayani, 2000). Similarly, Alenezi & Karim (2010) reveal that belief and anxiety in e-learning also influence the ICT experience at perceived ease of use. This means that once teachers can use ICT comfortably for teaching and embrace its convenience, their belief will become stronger on its advantages and confidence in its use will increase.

Between belief and anxiety, the correlation coefficient for the science teachers is – 0.86. This result indicates that the higher the belief of teachers in e-learning, the lower the anxiety will be. In relation to this, individuals who have anxiety over the use of the internet will have lower self-confidence and performance results compared to individuals who do not suffer anxiety (Joiner et al., 2005). This study shows that half of the science teachers are accepting the use of e-learning, and meanwhile, the other half are not. The literature notes that several factors hinder the effective use of ICT as a learning medium, and these include the infrastructure problems, the willingness of the school, teachers, and students, satisfaction in using technology, among others (Kharisma, 2013). For the teachers in this study, especially, the main obstacle is their willingness to use the e-learning that is made available by their institutions. Regardless of e-learning to assist teachers in the teaching process (Kusairi et al., 2017), stated that the use of e-learning increases their work, time, and efforts in the teaching process (Park, 2009).
Conclusion and Future Research

Based on the results of this study, it can be concluded that the use of e-learning in science teaching is still challenging for the science teachers in Aceh, Indonesia. Despite the fact that most of the teachers have a high level of belief and low level of anxiety in using e-learning to teach, only half of them are knowledgeable in using this medium. This problem can be mitigated by improving the teachers’ knowledge of e-learning. This can be done by providing more training and workshops for the teachers throughout the process. Schools that have been providing teachers to use e-learning should also maintain the facilities. The preparedness, enthusiasm, and sufficient knowledge of teachers can bring about positive effects to students and teachers themselves in using e-learning in the teaching and learning process.

This study has some limitations. As mentioned earlier, there are 23 districts in Aceh, and thus, due to the limitation of this study, it only managed to collect data from 13 districts. Further research is recommended to cover the districts not included in this study. More indicators on the acceptance of e-learning should also be utilized, such as learning style, environment, and assessment. Interviews with teachers should also be considered to gain more in-depth information on anxiety, knowledge, and beliefs toward e-learning. Comparative studies with other teachers from other provinces in Indonesia are also encouraged to obtain more insights into this issue.

Acknowledgments
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References


Remote Learning During the Covid-19 Pandemic in the Opinion of Polish University Students

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Abstract
Universities around the world have overwhelmingly switched to online teaching and e-learning, necessitated by social distancing measures due to the COVID-19 pandemic.

In order to provide education as effectively as possible and achieve the required educational objectives, people involved in the teaching process at the university have taken a number of steps to give students access to materials necessary to obtain the intended learning outcomes in a particular subject.

In this article, we present the results of empirical research on remote classes at Polish universities during the COVID-19 pandemic. The research focused on methods and forms of distance learning.

Key words: University Study-Oriented System, Covid-19 pandemic, university students, online education

Tell me and I forget.
Teach me, and I will remember.
Involve me and I learn.
– Xunzi (paraphrased)

Introduction

Since March 2020, higher education has experienced disruptions due to the COVID-19 pandemic. All public and private institutions of higher education have started implementing distance/remote learning to protect students from the
COVID-19 virus. Often, the teaching staff had to quickly decide on how to adapt their classes to remote learning with little experience and no training. Therefore, to ensure a successful distance learning process, universities conducted professional training for teachers. In addition, educational platforms were launched and guidelines and instructions were developed to manage the behaviour of teachers and students during distance learning.

Remote learning breaks down educational barriers such as the place of residence or fixed class hours typical of in-person learning set by universities. The educational media can be all means of communication that present the educational content as well as university educational platforms.

Remote learning generally maintained the same educational strategies as those used during in-person teaching and learning (Lederman 2020 and Supiano 2020). Many teachers also reported a change in the way students were assessed, for example by changing the form of the exams or reducing the number of assignments (Lederman 2020, Lederman 2020). Some of the lecturers changed the form of classes from asynchronous to synchronous, allowing students to navigate the content of the subject more independently. Students had to adapt to these new forms of classes and overcome barriers impeding the teaching process. Research has shown that technological problems quickly emerge, such as lack of reliable Internet access and finding appropriate technology or own place for work, which has a significant impact on participation in synchronous meetings, such as those held via web conferencing software, e.g. Zoom (Flaherty 2020; Lederman 2020).

The implementation of remote education should be diversified in terms of the forms of teaching and should be based on online resources and take into account various individual and group projects.

It is therefore important that, in the face of the COVID-19 pandemic, teachers should be able to change their current habits and design a distance learning process that would give satisfactory results.

The success of distance learning is based on three key elements:

1) Technical capabilities on the part of both the teacher and the student, i.e. equipment, good internet access, and remote education management software;

2) Educational resources;

3) Skills of the teaching staff in organizing distance education (Koludo, 2020). Distance learning can draw on a variety of digital tools that should inspire teachers to use them. The educational process should not be just a series of computer-based tasks; it should also arouse curiosity in students and motivate them to work creatively. This raises the question of teacher competencies and motivation to
transfer new educational trends into virtual space. Among the many possibilities, the following three are particularly noteworthy:

1) the WebQuest method,
2) the flipped classroom method, and
3) the constructivist learning model (Koludo, 2020).

In order to improve the efficiency of remote learning, universities organize various types of courses and training. YouTube has many videos on how to use collaboration software such as Microsoft Teams, Kampus, Moodle, Google Classroom, Zoom, and Skype.

E-learning classes should not be regarded as an imperfect substitute for in-person classes – their curriculum should be consistent with the syllabus guidelines but taking into account the specifics of working in a virtual environment.

In addition to collaboration software and other application programs, there are many websites that offer remote learning guidance, for example the recorded webinars by Microsoft on distance learning, which contain a collection of useful tutorials to improve the learning process.

During distance learning, it is advisable to:

- introduce, in consultation with students, short breaks during 90-minute classes and establish rules on turning camera on/off by the participants in synchronous classes;
- use student activation methods that will strengthen the sense of belonging to the group;
- include independent, individual student work in synchronous classes (e.g. reading a text, completing a task, or preparing a short speech on a given topic);
- use different forms of interactions between students, including working in pairs and subgroups (e.g. the so-called rooms), which largely allows the achievement of social competence written in the syllabuses;
- use spiral learning, which is based on previous content, for example by asking questions about knowledge (e.g. ‘What is the connection between this issue and the one we discussed previously?’), skills (‘Which theory will you use to solve this problem?’), and/or social competence (‘What and how can be changed?’);
- carry out so-called debriefing—talk about feelings and emotions related to the performed task, read text, work in subgroups, etc.;
- jointly analyse the progress of the classes and their effects (e.g. ‘What worked?’, ‘What failed?’, ‘Were the goals achieved?’, ‘If not, why?’);
• introduce elements of formative assessment, focused on highlighting the results achieved (Janiak-Jasińska, 2020).

At universities, the transition to remote learning has resulted in the creation of teaching materials and enhancement of the educational process through the use of distance learning methods and techniques, i.e. a gradual shift from traditional support of the teaching and learning process to the use of various online materials to activities involving work on an e-learning platform. For example, the University of Wrocław regularly hosts webinars (Nowicki, 2020) on the following topics: the basics of planning teaching work; activation of students during classes; support for developing social skills and competences during remote classes; importance of communication during remote classes; motivation tools during remote classes; multimedia projects and tasks as an alternative to traditional tests; and learning the functionality and use of the e-EDU platform and the Office 365 suite, which are useful when conducting tests and exams.

Nowadays, when the use of computers and the Internet is becoming commonplace, traditional teaching methods must be adapted to new technologies and meet the expectations of the current generation. The young generation uses new information technologies from an early age, quickly adapting to the new educational situation and therefore has specific expectations of teachers using collaboration software and web applications for distance teaching. Therefore, it seems necessary to get to know the opinions of students on the implementation of the teaching process at a university in order to constantly improve teaching.

**Methods**

The aim of this research was to show how learning is being carried out in such unprecedented times. It seemed interesting to examine the methods and forms of remote teaching, student assessment of teacher competencies, and learning barriers of students related to distraction, increased anxiety, and decreased motivation during the Covid-19 pandemic.

Each scientific discipline, as part of institutional science, is inherent in the macro-structural order of the social system and is functionally linked to it in many ways, thus imposing specific research strategies (Malewski, 1998). Own research was based on the positivist paradigm.

The research employed quantitative methods, i.e. a diagnostic opinion poll using a survey as the technique and an online questionnaire as the instrument.
The main research problem was formulated as follows: what are the opinions of university students about the implementation of remote learning? This main problem implies the following specific problems:

- What differences do students see in remote learning in the summer term 2020 and the winter term 2021?
- Which student activation methods were used by the teachers?
- What kind of learning do students prefer?
- What are the opinions of university students about the effectiveness of remote learning?

The research was conducted by means of a diagnostic opinion poll using an online questionnaire. The survey was attended by 208 people, representing all years of Bachelor’s degree studies, supplementary Master’s degree studies, and five-year Master’s degree studies. The surveyed research sample consisted of 67.6% women since the survey was most popular at pedagogical faculties, where most students are women. The vast majority of the respondents studied in Wrocław but there were also individuals studying in Katowice, Brzeg, and Polkowice.

**Results and Discussion**

Efficient implementation of remote learning depends on good organization of classes, competence of teachers and students, and a functional Internet connection. Therefore, it seemed interesting to examine what disrupted remote learning, especially in the first months of the COVID-19 pandemic. In their comments, 77.7% of the surveyed students reported various technical and organizational problems arising during the classes.

At the beginning of the pandemic, i.e. between May and June, synchronous classes often could not be held due to problems with audiovisual equipment and Internet connection on the side of both students and teachers. Presentations would not load, both teachers and students could not be heard, and exam sheets were received with huge delays. Learning was also disrupted by poor quality and dropped connections as well as problems with microphones and cameras.

According to students, the first two weeks of the pandemic were marked by cancelled classes. During the classes, a malfunctioning collaboration software was replaced with another one, e.g. Zoom, Google Meet, or Skype.

The biggest problem was slow connectivity due to poor coverage or overloading of servers and networks. As a result, students got disconnected from classes, their voices were echoing (feedback loop issue) or distorted, groups were not visible, and
the image was blurry. There were often problems with joining classes; sometimes, the classes were interrupted by crashes.

The students had reservations about the IT skills of the teachers and their behaviour in the new learning mode, which resulted in their dissatisfaction with participation in classes.

Some teachers did not know how to share presentations and multiple unsuccessful attempts took up class time. The students objected to the requirement to turn on webcams on a given platform during testing on the e-portal and students at technical universities did not have enough time to solve the tasks. The collected factual material shows that there were a lot of technical and organizational problems and not all of them could be efficiently resolved.

The survey asked students what differences they perceive between remote learning in the Summer 2020 and Winter 2021 semesters. The vast majority noticed an improvement in the quality of education, and the perceived changes are included in the table below.

**Tab. 1. Differences between evaluating the quality of distance learning in the summer 2020 and winter 2021 semesters – the most frequent statements. Own study. (Percentages do not add up to 100)**

<table>
<thead>
<tr>
<th>No.</th>
<th>Differences between evaluating the quality of distance learning</th>
<th>Number of answers N-208</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Better organization and contact with the instructor, more involvement of both sides of the teaching process;</td>
<td>179</td>
<td>86.2</td>
</tr>
<tr>
<td>2.</td>
<td>Greater order and tidiness;</td>
<td>150</td>
<td>72.0</td>
</tr>
<tr>
<td>3.</td>
<td>Changes in the way of transferring knowledge; more interesting didactic ideas;</td>
<td>142</td>
<td>68.3</td>
</tr>
<tr>
<td>4.</td>
<td>Increased ability to use distance working tools;</td>
<td>128</td>
<td>62.0</td>
</tr>
<tr>
<td>5.</td>
<td>Increase in the number of classes conducted synchronously according to the schedule;</td>
<td>110</td>
<td>53.4</td>
</tr>
<tr>
<td>6.</td>
<td>Activating class participants; working in rooms;</td>
<td>108</td>
<td>52.2</td>
</tr>
<tr>
<td>7.</td>
<td>Less technical problems;</td>
<td>104</td>
<td>50.3</td>
</tr>
<tr>
<td>8.</td>
<td>On-line practices; videos of lab experiments; video meetings; videos of exercises;</td>
<td>101</td>
<td>48.8</td>
</tr>
<tr>
<td>9.</td>
<td>Adaptation of content and teaching methods;</td>
<td>85</td>
<td>41.2</td>
</tr>
<tr>
<td>10.</td>
<td>Clearer requirements; checking and evaluation methods; more oral forms of exams;</td>
<td>79</td>
<td>38.4</td>
</tr>
<tr>
<td>11.</td>
<td>Better content preparation of instructors; instructors making available their own scientific materials;</td>
<td>73</td>
<td>35.4</td>
</tr>
</tbody>
</table>
The questionnaire also asked students what changes they would propose in remote learning if this form of study was to continue in the following term. This was an open-ended question, so the respondents were free to present their suggestions. Most people indicated the need for greater activation of students in non-lecture classes (56.7%). Being unable to participate actively, the students relatively quickly became weary, which lead to a fall in concentration and attention. The lack of the ability to ask questions and participate in discussion made students feel deprived of a very important element of study, namely dialogue. The respondents also pointed out that this way of conducting classes enabled the kind of behaviour where, after logging in to the subject channel, some people did not participate in the classes at all, doing something else.

Another need expressed by the students, partially related to the need for activation discussed earlier, was the expectation of more attractive classes. Students suggested that classes would be much more interesting if they included elements of edutainment (learning through play), such as quizzes, educational games, cooperation in creative problem-solving, and tasks requiring innovative thinking.

Many students demanded that laboratory classes be restored in the classroom mode. They were very critical and emotional in their assessment of remote implementation of this type of classes, considering them completely pointless. In addition, the following factors contributed to the unfavourable opinions: technical problems, unavailability of certain materials necessary to write a report, and replacement of demonstrations with oral presentations.

A large number of students indicated that it was necessary for the teachers to provide class materials. The respondents complained about too fast-paced practical classes, laboratory classes, or lectures but also about recurring technical problems that made it impossible to take notes in real time and often resulted in incomplete knowledge gained from the classes. In the context of sharing it is worth noting that some students mentioned the opposite situation, where they received a huge amount of material from the teacher. In the future terms, the students wanted to see a clear distinction between the content required for an exam, evaluation, or test and the content constituting supplementary material.

Another change recommended by students was to standardize the software used. The implementation of classes on different platforms was assessed as burdensome and needlessly confusing.

There were repeated calls for greater understanding and tolerance on the part of teachers. As the students emphasised, the situation we find ourselves in is just as difficult and new for the teachers as it is for their students. One of the issues particularly often mentioned by students was the mistrust and suspicion of the teachers regard-
Remote Learning During the Covid-19 Pandemic

ing whether or not the student really had technical problems, actually attended the classes, did not cheat during testing, and their work was done independently. This lack of trust often resulted in the use of sophisticated supervision strategies and, above all, deterioration of the atmosphere during classes and reluctance towards the teacher. As regards changes expected from academic teachers, there were also calls for acquisition and improvement of their skills in the use of media in education (it was even suggested that universities should impose this obligation on their academics under threat of punishment) and greater involvement in individually assisting students who do not understand the material or cannot cope with a task.

For many respondents (38.7%), the only expected change was the return to universities, but. Even when they had no major reservations about remote learning, they expressed great desire to return to ‘traditional’ learning conditions and be members of the academic community. Slightly over 50% believe that some classes should be continued in a remote form, also after lifting the restrictions resulting from the pandemic.

Despite listing the problems that should be addressed in the future, the students also saw a number of advantages of remote learning. The most frequently mentioned advantages were the time and money saved. The lack of need to rent accommodation for the period of study and to travel to and from the university are undoubtedly great positives of remote learning, especially when travelling by public transport or when the student commutes from outside the city. The respondents also stressed that it was important for them to be able to plan other activities during the day much more freely and manage their time more efficiently. Other advantages included the lack of need to get up early or move between different university buildings and the ability to rearrange at least some study hours to the time of day when the students were most productive. The flexible time budget made it possible to reconcile studies with work, family life, and everyday matters and duties. Many respondents emphasised that this was invaluable for them (‘I have a small child and if I were not able to learn online, I would probably have to stop my studies, but at present I don’t need to worry because I can stay with my baby and keep studying’). The students also observed that they saved money due to the reduction of ‘unplanned’ expenses, which are sometimes difficult to avoid while living in a big city, tempting with a multitude of offers. In addition, they pointed to the lower cost of meals eaten at home.

Informal mode of learning allowed for casual attire. The feeling of comfort resulted from the ability to stay in a familiar place, adopt a comfortable body position, and even eat meals. It was also important to the students that they could attend the classes even when they had minor medical problems.
In their comments, the students emphasised the importance of being able to repeatedly return to the studied content thanks to the rich and varied materials provided by the teachers and the fact that they could use it at any time and place. In their opinion, this latter aspect influenced the class attendance, which ‘during in-person learning’ was not as high as it is today. Almost all students agreed that lectures should remain online even after universities resume in-person classes.

Another advantage noticed by the students was the ability to strengthen their skills in using modern technologies and software while acquiring knowledge. They considered the acquisition of these competencies to be valuable because, in their opinion, they made the learning process easier and more attractive; they also saw the possibility of using these skills in their future work or private life. A small group of the respondents felt that remote learning offered no advantages and the only effective form of study was in-person learning.

For most academic teachers, the sudden need to switch from in-person learning to remote learning created a situation where they had to acquire skills in the use of new technologies in the teaching process. In response to this situation, universities organized dedicated training for their staff and provided the necessary hardware and software. In addition, the Internet offers a huge number of videos and training materials on the use of various software in the teaching process, so anyone interested can easily find clear instructions. The survey results show than only a few individuals did not conduct online classes. Almost all teachers were coping (with better or worse results) with the new form of teaching and communication with other university staff. Academic teachers not using e-learning platforms implemented the curriculum in a different form. This was most often done by sending the necessary content via e-mail in the form of presentations or Word documents. In the case of teachers who took up the challenge of using new educational solutions, the most popular platforms were Microsoft Teams (83.9%), university e-learning websites (56.9%), and Zoom (55%)\(^1\). Other, much less popular tools included Google Drive, YouTube, and Moodle, while the least popular solutions were OneDrive, live chat services on websites, Google Classroom, TeamSpeak 3, Facebook Messenger, Internet Relay Chat (IRC) clients, Discord, Microsoft Forms, Padlet, Mentimeter, and Miro.

Although virtual reality is well known to the young generation, it also required assistance in the new situation. Comments from the respondents suggest that most of the students (77.7%) were satisfied with the assistance in remote education received from the universities. The main form of support was organisation of

\(^1\) Percentages do not add up to 100 because more than one answer could be selected.
training in the use of media and various programs in the learning process. Some universities provided their students with the necessary equipment and helped them gain access to high-speed Internet.

Another form of help offered to students was the provision of various materials (presentations, audio and video recordings, notes, PDF or Word publications, and links to relevant sources). Comments by the respondents showed that only over 2% of the teachers did not support the students in this regard while around 4% of the students believed that the sent materials were of little use. The majority of the respondents welcomed this type of support, stressing that it was of great help to them, allowing them to avoid the stress of having to work under time pressure. Despite partially limited access to libraries, students were very successful in accessing the necessary materials using the sources available to them-as shown in the table below.

**Tab. 2.** Sources used by students in the implementation of remote learning.
Own study. (Percentages do not add up to 100)

<table>
<thead>
<tr>
<th>No.</th>
<th>Sources of student's knowledge</th>
<th>Number of answers N=208</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Internet</td>
<td>201</td>
<td>96.7</td>
</tr>
<tr>
<td>2</td>
<td>Materials provided by tutors</td>
<td>187</td>
<td>90.0</td>
</tr>
<tr>
<td>3</td>
<td>Materials provided by colleagues</td>
<td>138</td>
<td>66.6</td>
</tr>
<tr>
<td>4</td>
<td>Library</td>
<td>47</td>
<td>22.9</td>
</tr>
</tbody>
</table>

**Conclusions**

The sudden shift in work mode related to the lockdown forced the academic community to immediately modify its methods, teaching and learning tools, syllabuses, and teaching materials. The lack of prior experience in distance learning certainly did not help to make this change go smoothly and efficiently. Most students and teachers faced challenges due to the pandemic, including technical difficulties, distraction, anxiety, and decreased motivation. A year has passed since the introduction of online learning. During that time, we have got somewhat used to the new reality, we are now navigating the world of virtual education with more confidence. The respondents noticed favourable differences in the quality of teaching between the university terms. However, they feel that many aspects of distance learning require further improvement.
The survey shows that further work on the quality of distance learning should focus on creating a space for discussion, natural (although virtual) interactions, problem solving, group work, edutainment, and other forms of student activation giving a sense of participation in the educational process. The students called for avoiding excessive use of verbal forms and large chunks of scientific texts for imparting academic knowledge. The expectations of the students concern the selection of the materials, their categorization according to specific requirements, and forms of knowledge verification. Despite the limitations resulting from the virtual method of interactions, the students want to achieve a sense of empowerment and development of mutual trust. The challenge is therefore to develop the soft skills of the participants of the educational process who, despite the lack of direct contact, want to fully experience two-person interactions.

Regardless of these demands, it should be noted that remote university education is merging with best practices and may become their integral part.

References


Lifelong Learning in Six Central European Countries

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Abstract
The aim of the article is to compare the situation of lifelong learning in Central European countries. Six countries were selected for the study: Poland, Lithuania, Estonia, Slovenia, the Slovak Republic, and the Czech Republic. The research is based on data from the International Survey of Adult Skills (OECD PIAAC). Respondents 30 years old and over were selected for analysis because a significant proportion of younger people have not yet completed their formal studies. According to the analysis, Estonian adults are most often involved in lifelong learning activities, while representatives from the Slovak Republic are the least involved. In all countries, those with above high school education are the most likely to participate in lifelong learning activities compared to those with lower than high school education and with high school education. In different countries, different kinds of learning activities prevail.

Key words: adult education, lifelong learning, PIAAC

Introduction

The idea of lifelong learning is established in the EU Memorandum on Lifelong Learning and declared as the UNESCO key principle of education and learning based on which access to continuous learning and development for both individuals and organizations is the core value for the future. Access to high quality lifelong learning is essential for all people, regardless of their occupation or circumstances. Although the concept of lifelong learning covers the learning activities of people of all ages in all life conditions, adult learning and education are among the key components of lifelong learning (UNESCO Institute for Lifelong Learning, 2016).
The field of lifelong learning research is diverse. The theoretical discourse usually distinguishes two main study approaches: at the micro (studies of individual self-determination) and macro (influence of national socio-economic factors) levels. However, the researchers note that the establishment of lifelong learning was a paradigm leap from lifelong education, where the concept of education is seen as a collective entity and a state obligation, to the concept of learning where learning is “seen as an individual entity and a personal duty” (Barros, 2012, 120).

At the individual level, lifelong learning provides the necessary knowledge, skills and a broader perspective as well as enabling adaptation to an ever-changing, global, competitive world marked by rapid technological development and immense flow of information. From a societal perspective, lifelong learning contributes to the creation of productive, innovative and competitive societies. The members of society who are more educated and seek constant professional development create new ideas and adapt to challenges and changes more easily (Laal & Salamati, 2012). Adult learning and education now also gain special weight in the context of the Education 2030 Agenda, which is linked to the UN Sustainable Development Goals.

Analysis of the discourse of scientific publications of recent years has revealed that the concept of lifelong learning is most often associated with the concept of formal education, especially higher education, as well as adult education and continuing professional development. The concepts of self-directed learning, employability, collaborative learning, literacy, mobile learning and sustainable development are also increasingly examined (Erdoğan, 2020).

Formal education is implemented in specialized institutions and confers an academic degree and leads to a profession or qualification. Such learning is usually associated with an earlier stage of life. Continuing professional development is usually analysed in the context of non-formal learning, which is carried out through the implementation of various educational and professional upskilling programmes. It is the most common form of lifelong learning for adult learners, usually for those who have already completed a certain stage of formal education. In the context of lifelong learning, the dimension of informal learning has also emerged (Mankin, 2009). Such learning is primarily related to everyday life, with emphasis on its naturalness by nature when the learner does not always even become aware of the learning process and learns without extra effort by simply performing various roles in life. In work activities, this learning is seen in various unregulated situations, e.g. when a more experienced employee instructs a less experienced one. Finally, all other direct and implicit forms of learning that a person engages in without a direct correlation to a teacher or
formally designed learning programme can be referred to self-directed learning. Thus, continuing professional development encompasses a wide range of adult professional learning activities: from a variety of courses offered by various organizations to a variety of unregulated informal learning activities in a specific work environment.

The analysis of scientific discourse shows that adult involvement in lifelong learning is not as active as intended in the programme documents. As Capman (2006) notes, adults make the decisions themselves, and some people live full lives without the need to engage in learning activities. However, there are certain obstacles to lifelong learning: many adults have negative learning experiences, their learning skills are poorly developed and they fear further learning (Beardwell et al., 2007), they lack time, energy, and curiosity (Delahaye, 2003). A person’s decision to engage in lifelong learning is influenced by external pressure (e.g. societal attitudes), subjective perception of and resilience to such pressure, and the socio-economic situation which enables or hinders the use of free time for learning (Silva et al., 1998).

**Research Problem**

Although the guidelines for adult lifelong learning are developed in the EU and globally, there might be differences in impact among countries. In each country, there could be a reinterpretation of lifelong learning guidelines based on the specific contextual aspects that are valued in various national adult education policies (Guimaraes, 2017). In this context, it is important to analyse how the idea of lifelong learning and the conditions and opportunities for its implementation are realized in different regions, how adult learning differs in non-formal education, and what social factors are related to this learning in different countries.

**Research Focus**

Six Central European countries (Poland, Lithuania, Estonia, Slovenia, Slovak Republic, and Czech Republic) have been selected for the research. The OECD PIAAC (International Survey of Adult Skills) data are analysed. The choice of countries was determined by the fact that these six Central European countries participated in the OECD PIAAC survey. The article analyses only adult participation in non-formal education through courses, seminars, etc. as this form of learning can be objectively measured, which would be difficult to do with other forms of lifelong learning (e.g. self-directed learning).

The purpose of the article is to analyse the prevalence of adult lifelong learning and the factors determining this learning in six Central European countries.
Analysis of non-formal adult education aspects in the research area is uncommon partly due to the difficulty in establishing a reliable sample of adults. This article will contribute to filling the gap in adult lifelong learning research in the Central European context.

**Research Methodology**

**Research General Background**

Assessment of the prevalence of lifelong learning in the Central European countries requires data covering the adult population in these countries. Data from the OECD Programme for the International Assessment of Adult Competencies (PIAAC) were used for the analysis as the most suitable source for this purpose. The analysis covers the data of the following six Central European countries which have participated in the PIAAC study: Poland, Lithuania, Estonia, Slovenia, Slovakia, and the Czech Republic. The PIAAC questionnaire databases of the aforementioned countries were used for the analysis.

**Research Sample**

In the PIAAC study, the respondents were aged 16–65. Respondents from 30 years of age and over were selected for the analysis because a significant proportion of younger people have not yet completed their formal studies. The survey sample by country: Poland – 9366, Lithuania – 5093, Estonia – 7632, Slovenia – 5331, Slovakia – 5723, the Czech Republic – 6102 persons from all geographic areas and different types of living areas. The probabilistic systematic sample method was applied in the survey.

**Instrument and Procedures and Data Analysis**

A block of questionnaire variables was used for the analysis to address the topic of lifelong learning. The main analysis was carried out by applying descriptive statistics methods. The Independent Sample T-test and Spearman correlation were used to calculate the statistical significance. The IBM SPSS 25 software package was used for the data analysis.
**Research Results**

In the PIAAC survey, the questionnaire included some questions aimed at assessing the lifelong learning situation. These were questions about attending various courses, trainings and private lessons which are not related with pursuing formal education but with upskilling for work purposes or learning for pleasure and expanding knowledge.

The summarised data of the analysed Central European countries show that the largest proportion of adults aged 30 and over who tend to study in non-formal education is recorded in Estonia (47.8 per cent) (Table 1). Similar situation is observed for the Czech Republic (44.2 per cent) and Slovenia (43.2 per cent). In the other three countries, the proportion of adults who are inclined to engage in non-formal education is significantly smaller: in Lithuania and Poland – 28.6 per cent in each, in Slovakia – 27.2 per cent. These statistical data refer to the proportion of adults aged 30 and over in each country who have participated in non-formal education activity (courses, trainings, seminars, etc.) at least once in the last 12 months before the PIAAC study.

<table>
<thead>
<tr>
<th>Country</th>
<th>Proportion of adults who attended learning activities (per cent)</th>
<th>Average time spent on learning activities (days)</th>
<th>Average time spent for learning activities (hours)</th>
<th>Mean of the number of learning activities per total population</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic</td>
<td>44.2</td>
<td>8.5</td>
<td>31.6</td>
<td>1.9</td>
<td>4.5</td>
</tr>
<tr>
<td>Estonia</td>
<td>47.8</td>
<td>8.4</td>
<td>45.3</td>
<td>2.1</td>
<td>4.7</td>
</tr>
<tr>
<td>Lithuania</td>
<td>28.6</td>
<td>7.4</td>
<td>33.1</td>
<td>1.5</td>
<td>4.2</td>
</tr>
<tr>
<td>Poland</td>
<td>28.6</td>
<td>10.4</td>
<td>37.4</td>
<td>1.2</td>
<td>3.6</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>27.2</td>
<td>7.0</td>
<td>21.4</td>
<td>1.1</td>
<td>3.3</td>
</tr>
<tr>
<td>Slovenia</td>
<td>43.2</td>
<td>7.5</td>
<td>40.2</td>
<td>1.7</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Analysis of the data on time spent by adult population for non-formal education activities in the last 12 months reveals ambiguous results: in terms of days, the largest number of days spent by adults on learning activities was recorded in Poland (10.4 days), while in terms of hours – in Estonia (45.3 hours). The least time for learning was spent by Slovaks: 7.0 days and 21.4 hours. The calculation of the average number of learning activities in the last 12 months per total population...
aged 30 and older shows that the largest number of learning activities is recorded for Estonia (2.1, Std. Dev. 4.7), the smallest – for Slovakia again (1.1, Std. Dev. 3.3). Upon summarizing the above data, it can be stated that the representatives of Estonia are the most likely to participate in non-formal education activities, and the representatives of Slovakia – the least likely.

The assessment of correlation between the adults who are inclined to engage in non-formal learning and the educational attainment shows that the number of learning activities attended in all countries is directly correlated with the highest level of education attained. The calculated correlation coefficients vary from 0.31 (the Czech Republic) to 0.47 (Lithuania), p < 0.001. The summarised data on the correlation between educational attainment and the number of the attended learning activities, with the level of educational attainment grouped into three groups (less than high school, high school, above high school), are shown in Figure 1. The graph reveals the same trend in all countries: the higher the educational attainment of a person, the more learning activities he/she chooses to attend.

**Figure 1.** Correlation between educational attainment and learning activities in the last 12 months

A closer look at specific learning activities attended by adults in the last 12 months reveals that different learning activities prevail in different countries (Fig. 2). The most popular learning activities in Estonia and the Czech Republic are private
lessons (39.3 and 27.7 per cent respectively). In Lithuania and Poland, distance education prevails (28.5 and 21.7 per cent respectively). Seminars and workshops are the most frequently attended in Slovenia (32.4 per cent). Job-related training ranks second in popularity in all countries. In Slovakia, there are no priorities in terms of learning activities: all types of activities are chosen approximately equally.

**Figure 2.** Proportion of adults aged 30 and over who attended different learning activities in the last 12 months

It is important to assess whether employers are interested in raising the qualification of their employees and their willingness to learn. The data presented in Figure 3 show whether the employer paid for the job-related (upskilling) learning activities last attended by the employee. The graph shows that in all countries, especially in the Czech Republic and Slovenia, employers tend to reimburse all learning-related costs: such costs are reimbursed in full by 50.2–61.1 per cent of the employers. However, 11.7–26.1 per cent of employers do not reimburse learning-related costs at all, as is often the case in Slovakia.

Analysis reveals that not all adults aged 30 and over could participate in the learning activities they wanted. Table 2 presents the data on the proportion of adults who wanted to participate in learning activities but, for some reason, could not do so. The largest such proportion was recorded in Estonia (30.0 per cent), the smallest – in Slovakia (7.7 per cent). It is interesting to compare these results with
the results provided in Table 1: in terms of participation in learning activities, the highest activity is observed in Estonia, the lowest – in Slovakia. Hence, in Estonia, even more people would study in non-formal education if they had the conditions, while in Slovakia, even if learning conditions were more favourable, an increase in learning activity would not be so significant.

Table 2. Proportion of adults aged 30 and over who in the last 12 months wanted to participate in learning activities but could not do so

<table>
<thead>
<tr>
<th>Country</th>
<th>Learning activities: interested but didn’t start (per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic</td>
<td>16.6</td>
</tr>
<tr>
<td>Estonia</td>
<td>30.0</td>
</tr>
<tr>
<td>Lithuania</td>
<td>14.6</td>
</tr>
<tr>
<td>Poland</td>
<td>10.1</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>7.7</td>
</tr>
<tr>
<td>Slovenia</td>
<td>17.2</td>
</tr>
</tbody>
</table>

As regards lifelong learning, it is important to examine whether any demographic factors influence adults’ choices or opportunities to devote their time to learning. Tables 3 and 4 provide analysis of the correlation between the number
of learning activities and gender, country of birth, having partner and children – these are the key factors which could have a direct effect on conditions related to a person’s ability to devote time and money to learning.

**Table 3.** Correlation between participation of adults aged 30 and over in the learning activities in the last 12 months and gender, and whether they still live in their birth country

<table>
<thead>
<tr>
<th>Country</th>
<th>Gender</th>
<th>Number of activities (mean)</th>
<th>Sig. (2-tailed)</th>
<th>Country of birth</th>
<th>Number of activities (mean)</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic</td>
<td>Male</td>
<td>2.0</td>
<td>p ≥ 0.05</td>
<td>Yes</td>
<td>1.9</td>
<td>p ≥ 0.05</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1.8</td>
<td></td>
<td>No</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>Estonia</td>
<td>Male</td>
<td>1.6</td>
<td>p &lt; 0.001</td>
<td>Yes</td>
<td>2.2</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>2.5</td>
<td></td>
<td>No</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Lithuania</td>
<td>Male</td>
<td>1.1</td>
<td>p &lt; 0.001</td>
<td>Yes</td>
<td>1.6</td>
<td>p ≥ 0.05</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1.8</td>
<td></td>
<td>No</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>Male</td>
<td>1.0</td>
<td>p &lt; 0.05</td>
<td>Yes</td>
<td>1.2</td>
<td>p ≥ 0.05</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1.3</td>
<td></td>
<td>No</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>Male</td>
<td>1.1</td>
<td>p ≥ 0.05</td>
<td>Yes</td>
<td>1.1</td>
<td>p ≥ 0.05</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1.1</td>
<td></td>
<td>No</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Slovenia</td>
<td>Male</td>
<td>1.5</td>
<td>p &lt; 0.001</td>
<td>Yes</td>
<td>1.8</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>2.0</td>
<td></td>
<td>No</td>
<td>1.1</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 shows that women are more likely to engage in learning activities in most of the six Central European countries: Estonia, Lithuania, Poland and Slovenia. The largest difference between women and men in terms of the average number of learning activities attended in the last 12 months was recorded in Estonia (the number of learning activities attended by women averages 2.5, by men – 1.6, t-test p < 0.001). In Slovakia, there is no difference between men and women in this regard. In the Czech Republic, men are more likely to engage in learning activities, but the difference between men and women is not statistically significant. When assessing who is more likely to engage in learning activities – local residents (people born in the country they live) or immigrants, statistically significant difference is observed only in two countries: Estonia and Slovenia, where learning activities are more often attended by local residents (in Estonia, 2.2 and 1.6 respectively, t-test p < 0.001; in Slovenia, 1.8 and 1.1 respectively, t-test p < 0.001).
Assessment of correlation between the number of lifelong learning activities and the factor whether a person lives with a spouse/partner showed that a statistically significant difference is recorded only for Poland where persons living with spouse/partner are more likely to engage in learning activities (1.3 and 0.8 respectively, t-test p < 0.01). In other countries, except Slovakia, the trend is similar, yet no statistical significance is observed. In Slovakia, there is no difference whether a person lives with a partner or alone in terms of the average number of learning activities attended. Statistically significant childlessness contributes to an increase in learning possibilities only in the Czech Republic (2.4 and 1.8 respectively, t-test p < 0.05). In Estonia, Lithuania and Slovenia, the trend is similar, yet no statistical significance is observed. In Poland and Slovakia, having/not having children does not affect the frequency of learning activities.

Table 4. Correlation between participation of adults aged 30 and over in the learning activities in the last 12 months and living with partner, having children

<table>
<thead>
<tr>
<th>Country</th>
<th>Living with spouse or partner</th>
<th>T-test</th>
<th>Having children</th>
<th>T-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of activities (mean)</td>
<td>Sig. (2-tailed)</td>
<td>Number of activities (mean)</td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Yes</td>
<td>1.9</td>
<td>p ≥ 0.05</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>2.0</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Estonia</td>
<td>Yes</td>
<td>2.2</td>
<td>p ≥ 0.05</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>2.1</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Lithuania</td>
<td>Yes</td>
<td>1.7</td>
<td>p ≥ 0.05</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1.3</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Poland</td>
<td>Yes</td>
<td>1.3</td>
<td>p &lt; 0.01</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>0.8</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>Yes</td>
<td>1.1</td>
<td>p ≥ 0.05</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1.1</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Slovenia</td>
<td>Yes</td>
<td>1.8</td>
<td>p ≥ 0.05</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1.5</td>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>

Discussion

When analysing the models of adult engagement in learning, one of the most important criteria is participation rate, which indicates the proportion of adults participating in lifelong learning activities. According to Desjardins at al (2006),
the analysis of the data of the International Adult Literacy Survey (IALS) (1994–1998) by proportion of adults participating in non-formal education distinguished four groups of countries. In a small group of countries (Scandinavian countries), participation in learning activities exceeded 50 per cent. A strong tradition of adult learning, many state-supported learning sectors in these countries have enabled a large proportion of the adult population to engage in lifelong learning. In the second group of countries (UK, USA, Canada, Switzerland), the adult engagement in learning accounted for 35–50 per cent. Slovenia and the Czech Republic fell into the third group of countries with adult participation rate of 20–30 per cent. The last group includes some Southern European countries (Greece, Portugal) and Eastern European countries (Hungary, Poland). Lithuania and Estonia did not participate in the IALS study.

In later PIAAC surveys (2012, 2015), adult participation rates are higher. Countries featuring the lowest annual flows of non-formal AE have participation rates ranging from as low as 20 per cent in Greece, Italy and Turkey. Lithuania, Poland and Slovakia are among the countries with adult participation rate below 30 per cent. In the leading countries of adult participation in non-formal education, participation rates are 2–3 times higher. In Slovenia and the Czech Republic, the rate of adult participation in non-formal learning exceeds 40 per cent. Meanwhile, the participation rate in Estonia is close to that of the Nordic countries including Denmark, Finland, Norway and Sweden (Desjardins, 2020). Why are the data for Estonia so different? Estonia adopted a perception of non-formal (in particular non-formal vocational) education as an important part of the adult learning system from the Nordic countries at the very beginning of the education reform. The government focused on non-formal adult learning system, ensured the existence of a non-formal education institutions network and applied funding models that allowed the cost of such education to be reduced (Märja, 2008). Meanwhile, Lithuania, which had similar starting positions, chose another model of non-formal adult education.

The research on adult participation in lifelong learning shows a tendency that adults who have already participated in learning activities are more inclined towards learning. In virtually all countries, there was a trend observed that more than half of adults who had participated in non-formal education were engaged in more than one such activity (Desjardins, 2020).

Gender and education attainment are the characteristics for more detailed analysis of models of adult participation in lifelong learning. The Eurostat data show that women participate in lifelong learning more actively than men (Eurostat, 2018). The results of the study in the Central European countries are not unam-
biguous in terms of gender and only partially confirm the tendencies emerging in the scientific literature (Chang, Wu & Lin, 2012) that women are more actively involved in lifelong learning activities than men.

The results show that in the Central European countries, the number of adult non-formal learning activities correlates with educational attainment. Greater involvement in learning activities by adults with higher educational attainment is also confirmed by the data of other researchers (Desjardins, 2020). Even in developed countries, social gaps still exist, with less educated people facing barriers to education that deter them from learning (Árnason & Valgeirdóttir, 2015).

Studies carried out in countries with high immigrant flows (Scandinavian countries, Germany, Canada, USA) show that there are quite significant differences between immigrant and non-immigrant learning in these countries (Støren & Børing, 2018). These differences are particularly obvious in non-formal learning related with work activities. In the analysed Central European countries, this trend is not observed. Only in two countries (Estonia and Slovenia) local residents statistically significantly more often engage in learning activities. Such results may also be determined by lower flows of immigrants.

**Conclusions**

Comparison of the six Central European countries in terms of participation in lifelong learning activities showed that the largest number of adults participating in non-formal learning activities as well as the greatest number of hours spent on learning activities in the last 12 months were recorded in Estonia. Moreover, Estonia also has the largest number of persons who want to engage in non-formal education but, for some reason, have not been able to do so. Adults are the least involved in non-formal learning activities in Slovakia.

The frequency of participation in learning activities in all six countries correlates statistically significantly with a person’s educational attainment: the higher the educational attainment, the more learning activities were attended in the last 12 months.

Different formats of learning activities prevail in different countries: private lessons are the most popular format of learning in Estonia and the Czech Republic, distance education – in Lithuania and Poland, seminars and workshops – in Slovenia.

In all six Central European countries, only about 50–60 per cent of employers pay in full for training related to professional upskilling.
In most of the six countries, women are statistically significantly more likely to participate in learning activities. Other demographic factors have little effect on the frequency of participation in learning activities in the six Central European countries.

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References
Framework for Assessment the Quality of Digital Learning Resources for Personalized Learning Intensification

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Abstract
The paper presents the framework for the assessment of digital educational resources for students who are engaged in autonomous personalized learning. Through a questionnaire and personal observations, we identified the necessity to equip students with skills and knowledge on resources quality assessment in terms of digital competence advancement. We adapted the framework that includes four components: pedagogical, technological, didactic and academic and expanded their content. Having analyzed the students’ narratives on their resources application experience, questionnaires answers and results of the personal assessment process, we observed the positive dynamic in mastering the skills of resources quality assessment after the implementation of the framework into the learning process. We suggest the algorithm of the framework implementation.

Key words: personalized learning, digital learning resources, digital competence, language learning, instruction design

Introduction
The development of digital educational technologies contributes to the transformation of the traditional teacher’s role as a unique source of information and transmitter of knowledge. In today’s society, overloaded with information,
traditional centralized learning instructions do not meet the needs of students who seek to determine the personal purpose of learning and construct personal educational environment. Technologies, as a means of independent learning stimulation, offer unlimited opportunities for the realization of students’ aspirations for self-education. The combination of the processes of globalization and digitalization of education contributes to the creation of the learning environment with the synergy of traditional learning and technologies.

The result of the combination is the emergence of a sustainable system of continuing advanced education, the main value of which is the personal needs of a student. Scientists identify the following conceptual aspects of the educational digitalization: didactic (development of new educational standards); technological (quality and availability of digital resources); methodological (development of blended forms of teaching with priority on personalized autonomy). Recognizing the fact that the formation of students’ ability to self-development and lifelong learning is the leading task of higher education, we consider the use of digital educational technologies as an effective resource for the practical advancement of self-directed and self-initiated learning skills.

Analyzing the experience of Polish and Ukrainian educational practices, we have identified key trends in the educational digitalization: creating conditions for the development of digital critical competence and media literacy of the population; ensuring free access for everyone to digital educational resources according to their educational needs; introduction of distance education; development of modern digital teaching aids; promoting personalization and autonomy of the learning process through the creation of individual modular programs taking into account specific capabilities and needs; development of methodological support for the effective implementation of technologies and criteria for assessing the quality of digital tools; increasing the level of digital competence of in-service teachers; ensuring the development of national digital networks of education and science.

**Theoretical background**

Scientists identify the following advantages of using digital resources in terms of personalized learning (Castellano, Mynard, Rubesch, 2011):

- variability of information and resources to optimize the search for information and meet the educational needs of each student;
- input of information in different multimedia modes: video, audio format, hypertext;
- interactivity of digital resources;
- activation of inner motivation to study by adapting resources to the interests and level of the educational background of students;
- objective immediate assessment;
- development of critical and creative thinking systems;
- space-time unlimited access to resources;
- creating conditions for simultaneous work in groups;
- creation of a virtual authentic linguistic and cultural environment for the development of communication competence;
- development of digital critical competence and skills in assessing the quality of digital resources.

In addition to the mentioned above, digital technologies provide students not only with much wider access to resources but also accessibility to autonomous personalized learning (Reinders, White, 2011). According to Sefton-Green (2019), the variety and accessibility of Internet resources, networking services and educational software intensify students’ search and desire to learn new issues and self-development. In this context, Benson and Chik (2010) suggest that technologies offer the potential for autonomous personalized learning, especially in the context of “globalized online spaces” (Benson, Chik, 2010, p. 63). However, teaching strategies with technologies are different from those used in the classroom, so teachers also need to master their digital skills.

Modern students were born in the digital era and teachers should make an effort to build a real partnership in the digitalization of the educational process. It requires carefully planned and thoughtful action by the teacher from the first day of school education, when relevant strategies are developed to inform students about the different ways they can choose to learn how to identify and use quality digital content.

Taking into account students’ perceptions of autonomous self-initiated learning through digital technologies, researchers found out that the role of teachers changed, and students perceived them as learning management counsellors, advising on learning strategies, creating an atmosphere that encourages and supports autonomous learning, recommending resources and encouraging the active use of these resources (Fang, Zhang, 2012). Furnborough (2012) claims that among the various roles of teachers, students are more interested in the role of a counsellor in providing resources and learning strategies than the assistance in planning, monitoring, and evaluation processes due to students’ lack of information about possible learning resources and opportunities or ability to use resources effectively (Gamble et al., 2012). This conclusion is confirmed by the results of
Godwin-Jones’s research (2019), in which the researcher pays attention to students’ complaints that they do not understand the learning potential of technological resources, feel lost in the diversity of technological resources. Thus, providing students with support in promoting independent personalized learning, teachers should focus on information about resources, encourage the active use of technological resources and assist in the development of the ability to use resources effectively for future successful self-realization.

Research also confirms that students use the technological resources that their teachers used in class. Moreover, teachers’ guidance on the use of digital resources for learning is crucial in assisting students in the transition from the use of technology as a means of entertainment to their use as learning tools. Leshchenko et al. (2020) identified different ways in which teachers can promote self-directed learning: provide students with conceptual information that enhances their awareness of the learning process and metacognitive concepts; provide methodological information about digital resources, strategies and their involvement in the experiment and identify what works for them and what does not; provide students with psychological support for effective management.

Research focus

The results of the analysis of the source allow us to state that it is important not only to focus on what teachers can do with technology in the classroom but also to explore how to maximize the didactic potential of technology for learning by increasing the quality of independent use of learning technologies by students. With this in mind, we outlined two objectives of our study:

- demonstrate and substantiate the application of the framework of digital resources quality assessment for the intensification of personalized learning;
- share the experience and verify the framework effect on students’ skills of resources assessment skills as well as personalized learning skills.

Methodology of Research

Since the objective of the study was to develop a comprehensive and measurable framework with a dual focus on digital resources evaluation skills and fostering personalized autonomous learning, we applied multi-phase active qualitative research methodology. The methodology included a literature review, identification of criteria for digital resources evaluation, defining key skills for personalized learning implementation, development of the framework, testing of the framework
while developing the skills of personalized learning. The study overlaid academic and practical methodological resources to meet the objectives of the research. We adopted participatory qualitative research tools because we implied to develop the framework and immediately test it while teaching to evaluate the quality of the resources.

**Data collection tools**

The creation and testing of the framework required a collective decision on the main criteria and dimensions. With this in mind, we employed such tool as online focus groups discussions (FGD) which cause greater actionable insights..... We organized the following focus groups: teachers-experts (to work out dimensions of personalized learning), students majoring in IT (to develop criteria for digital resources evaluation), students with the positive experience of self-directed learning (to share and single out ways of correlation of students’ educational needs and resources requirements). Another tool was online surveys and worksheets in Google Forms format aimed at the formative assessment, collecting the information about students’ perception, level of skills formation and its dynamics during the studying. In order to collect objective and full information about the results of the research, we conducted a post-experimental interview with students and teachers.

**Data analysis tools**

As the nature of our study is qualitative and descriptive, we adopted such data analysis tools as content analysis for literature information analysis and responses from interviewers to identify explicit and latent structures in texts; keywords-in-context analysis of information from focus groups and students’ narratives on the successful experience of personalized learning through digital resources; assessment rubrics for demonstration the results of students’ academic achievements on the selection of digital resources. All discussions were audio-recorded and e- transcribed through on-line resource Transcriber. Coding of the narratives and interview responses was done using RDQA coding software. For the FGD and students’ narratives we identified the following codes concepts: autonomous learning skills, personalized learning skills, learner-centeredness, digital resources/platforms, content quality, feedback, operation modes, learning strategy, needs identification, career expectations, time-management, self-organization, self-directed learning anxiety. We analyzed the frequency of the codes, their negative and positive connotations.
**Procedure**

The procedure of the experiment included some stages: questionnaire for students concerning the experience of autonomous personalized learning employing digital resources and problems students encounter with; pre-experimental online survey for students focused on the level of students' skills of digital resources assessment; organization of FGD aimed at developing the framework for digital resources quality assessment; teaching with the framework and testing it; post-experimental skills formation assessment and final interview with participants.

**Participants**

Students and teachers from three universities took part in the study: National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Ukraine (n=22), Poltava University of Economics and Trade, Ukraine (n=17), Jan Kochanowski University in Kielce, Poland (n=25). Students were from the Master degree programs as they had an experience of self-directed study, the basic background of the professional subjects, so they could easily determine their educational needs and opportunities. Moreover, those students knew future employers’ requirements and could identify what additional knowledge and skills were necessary to master to meet those requirements. Students’ and teachers’ participation was voluntary; all interviews records were anonymous.

**Results and Discussion**

Learning through digital learning resources differs from traditional learning in that human interactions become indirect. In this new environment, where the student finds himself alone in front of the device, careful attention to the quality of digital content is especially important. However, this quality is not always guaranteed. Digital educational resources are produced in a variety of settings, many of which do not include quality control procedures or pedagogical recommendations. Thus, the authors often do not follow the principles of design development, which were established in the fields of instructional design, educational psychology and pedagogy. Besides, there is no single international body or council for standardizing, evaluating or establishing criteria for evaluating the quality of resources. Digital learning resources often lack the regulation of content validity and reliability. In this context, we anticipate that the development and use of evaluation tools will help potential users identify high-quality resources.
With this in mind, we launched our study and the first stage was to find out students’ knowledge and skills on digital resources assessment for application as a tool for personalized learning. We suggest students completing online worksheets with two tasks: rank the criteria for the digital resources quality assessment from the most important (1) to the least important (17) or leave without a number those that are not considered as criteria at all; after that, we proposed students two resources of different quality level and ask students to choose which one was the most appropriate for personalized learning. In table 1, we suggest the results of students’ choices before and after the experiment. We marked with numbers only those criteria that were identified by the majority of students (>25%).

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Students’ choice before the study (rank of the criteria / students %)</th>
<th>Students’ choice after the study (rank of the criteria / students %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material/content reliability</td>
<td>1 (87%)</td>
<td>1 (89%)</td>
</tr>
<tr>
<td>Well-developed and understanding structure</td>
<td>3 (54%)</td>
<td>10 (44%)</td>
</tr>
<tr>
<td>Interactivity, elements of gamification</td>
<td>2 (63%)</td>
<td>15 (42%)</td>
</tr>
<tr>
<td>Flexibility and adaptability to background level</td>
<td>8 (34%)</td>
<td>8 (55%)</td>
</tr>
<tr>
<td>Instruction formulation</td>
<td>5 (51%)</td>
<td>6 (57%)</td>
</tr>
<tr>
<td>Content simplification</td>
<td>4 (44%)</td>
<td>0</td>
</tr>
<tr>
<td>Learning strategies</td>
<td>0</td>
<td>11 (32%)</td>
</tr>
<tr>
<td>Problem-solving tasks presence</td>
<td>0</td>
<td>7 (38%)</td>
</tr>
<tr>
<td>Interactions between learners</td>
<td>0</td>
<td>14 (33%)</td>
</tr>
<tr>
<td>Clarity of the assessment procedure</td>
<td>6 (56%)</td>
<td>10 (43%)</td>
</tr>
<tr>
<td>Authenticity of content and tasks</td>
<td>0</td>
<td>2 (73%)</td>
</tr>
<tr>
<td>Quality of browsing between the elements</td>
<td>7 (43%)</td>
<td>9 (29%)</td>
</tr>
<tr>
<td>Clear objectives of the resource</td>
<td>0</td>
<td>3 (57%)</td>
</tr>
<tr>
<td>Correspondence of a resource objectives and your personal goals</td>
<td>0</td>
<td>4 (77%)</td>
</tr>
<tr>
<td>Objectivity and helpfulness of feedback</td>
<td>9 (47%)</td>
<td>5 (84%)</td>
</tr>
<tr>
<td>Intellectual stimulating</td>
<td>0</td>
<td>12 (43%)</td>
</tr>
<tr>
<td>Users-friendly interface</td>
<td>10 (48%)</td>
<td>13 (38%)</td>
</tr>
</tbody>
</table>

Analyzing and comparing students’ answers we would like to mention that before the experiment some criteria were left without attention because students did not understand them or did not consider as applicable to the digital resource.
The most significant criteria remained information reliability, however, after the experiment students marked the importance of authenticity. It should be noted that students paid attention to objectives correspondence, whereas background correspondence was ranked as 8 before and after the study. Problem-solving tasks and learning strategies were left without ranking before, although students paid attention to the quality of instruction and feedback. After the study, a pedagogical component became more significant for the resource quality assessment and notified learning strategies and authenticity of tasks. Less attention was paid to the interaction between users and elements of gamification as students understood the didactic potential of the resources and its influence on the results of learning. For example, the variety of tasks for the training of one skill or searching the topic from different points are more important than the number of winning points. Students also expressed their growing requirements to the feedback: an explanation of mistakes, referencing to other sources or experts, stimulation of further learning.

While completing the second task on resource assessment before the study, students wrote that “… the resources are useful if I the content is given in simplified and interactive way”; “Simple instruction and immediate feedback are very important”. During the final post-study interview and according to the content analysis, we found out that students became more mindful about choosing the resources justifying their choice with structured content, learner-centeredness, active mental engagement, a match between the audience, content and objectives, helpful feedback, authenticity of tasks. Therefore, as students claimed due to the application of the developed framework, it was a simulative transformation of the entertainment tool to the learning tool.

The result of the FGD was the development of the framework. We adapted a tool for evaluating digital resources developed by Mhouti1, Nasseh, Erradi (2013). The tool combines four key components of a digital learning resource: academic content, pedagogical, didactic and technological components. In the context of the research objectives, this tool was adapted and some sub-components were changed or added: interactivity or quality of feedback (to the pedagogical component), focus on the development of independent personalized learning skills (to the didactic component), structural and functional interdisciplinary unity of educational material (to the academic component).

The aspect of the quality of academic content depends on the quality of the information presented in the digital learning resource. The following criteria were selected to determine the quality of academic content:

- criterion of reliability, accuracy, reliability and security of information messages;
• criterion of relevance, authenticity, usefulness and compliance with the interests, age and needs of the user;

• structural and functional interdisciplinary unity of educational material, which contributes to the unification of knowledge and correlates with the principle of authenticity, because in real life students must solve interdisciplinary problems. Training in solving interdisciplinary problematic tasks activates scientific and cognitive activities, promotes further scientific activities, which ensures the continuity and consistency of the results of personalized learning.

Assessing the quality of the pedagogical component is of paramount importance. Assessment of an educational resource involves the study of its purpose, objectives, teaching strategies and assessment. The main criteria are:

• instructions for tasks, which determines the degree of students' understanding of the content of information messages. The degree of comprehension is influenced by simplification or adaptation of the content or level of language, explanation of abbreviations, availability of a short description of the resource, use of visual presentation of information;

• quality of the resource structure: whether the structure of the digital learning resource corresponds to the expediency of its use in the pedagogical context: logic of organization, mode of browsing between the elements;

• quality of learning strategies, based on techniques, methods, approaches and various learning models for learning styles differentiation. The main subordinate criteria for evaluating pedagogical strategies are: clearly defined learning objectives; the degree of differentiation of strategies and tasks according to learning styles (encourages teacher intervention, provides opportunities for cooperative, problem-based learning, etc.), promotion of students' active involvement through the option of a survey; encouragement of students' creativity and group interaction; development of critical thinking;

• interactivity, or quality of feedback for self-monitoring of results, tracking the dynamics of the learning process;

• assessment tools.

The next criterion is the didactic aspect of quality with the following key criteria:

• authenticity of educational activities: tasks should reflect real-life or professional problems that a student may face outside the classroom;

• the relevance of the content of the digital educational resource to the purpose and target audience;

• focus on the development of autonomous personalized learning skills.
The last criterion determines the technical quality of the digital learning resource that is assessed by the following criteria:

- design and organization of the visual product;
- clear interface to simplify viewing;
- technological innovation and multimedia tools.

To illustrate the tool for assessing the quality of digital educational resources, we have developed the scheme shown in Figure 1.

![Figure 1. Digital educational resource quality assessment framework](image)

If teachers make all the decisions about the use of a particular digital resource, then students do not have the opportunity to become independent. However, with too much freedom to choose, students are distracted and unable to focus on one goal and choose the most useful resource. Providing options is one way to help them learn to navigate and evaluate resources. Besides, variability provides the personalization of learning. We offer the following procedure of the framework introduction:

1. Demonstrate a high-quality digital tool, point its benefits and practice its use in the classroom. Offer support and suggestions on adapting the tool for personal needs and interests.
2. Applying testing software or during personal interviews with students explaining them how to identify their needs and find resources to satisfy those needs.
3. Conduct discussions and debates on digital educational technologies and its quality using the framework.
4. Conduct reflective discussions about the experience of working with resources in which students exchange views, links, experiences, analyze the advantages and limitations.

This algorithm facilitates a critical analysis of the digital tool, generates considerations about its advantages and disadvantages in terms of needs. Students with a high degree of autonomy can find digital tools without the support of a teacher. The teacher makes several suggestions, and students explore how to use them. They then critically analyze the tool and decide if it was useful.

Conclusions

The most obvious finding to emerge from this study is that the digital educational environment is a set of conditions and opportunities for autonomous personalized learning. The key idea of supplementing the educational space with technologies is to implement innovative pedagogical strategies and improve educational pathways to foster the perception and awareness of educational information, as well as the development of metacognitive abilities such as reflection and critical thinking. Thus, learning and technology must complement each other. The framework for digital resources assessment expands students’ opportunities to continue their study at any time matching their needs with high-quality resources despite the limitations of the university. It also influences students’ motivation by creating a situation of success in learning and personalization of the educational process. The motivating factor is also the quality and timely feedback that digital learning technologies provide to each student directly in the process of performing educational tasks. Further research should focus on determining the beneficial ways of connection the pedagogy with digital instruction design to equip teachers with skills of digital educational competence.

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Abstract
The article demonstrates the expediency of integrating of knowledge of the structure and properties of substance and building materials. It is shown that this approach avoids duplication of related material, overcomes inconsistency in the interpretation of concepts, the use of quantities and units of their measurements. Didactic requirements for the implementation of the ideas of integrated learning of related material are substantiated, the integrated content of knowledge of the substance and materials is worked out, different forms and methods of knowledge integration are tested depending on the nature of the integrated material. Special feedback from teachers of special technology and masters of industrial training is received. The training offered by our programs also receives a positive assessment of the students due to the decrease in the workload, the reduction of homework with the same educational significance, the availability of special concepts, the emergence of interest in the study of physics. The experiment reveals that integrated lessons, lectures, laboratory and tests, as well as integrated questions, tasks with integrated content, concretization and supplementation of physical knowledge with general and special ones, use of complex tasks, etc. are found to be effective forms of knowledge integration. Generalization of the results of the experimental work shows the benefits of learning oriented programs that involve the integration of students' knowledge about the structure and properties of substance and building materials. It is important not to overburden any educational process with excessive integration, but to focus on its optimal use: in fact, the laws of educational integrology are aimed at it.

Key words: integration, integration in education, integration of knowledge, integration of forms and methods, training, students, vocational school
Introduction

Scientific understanding of integration processes that are actively developing in the society in the second half of the XX – beginning of the XXI century affect the education. It resulted in fast growing number of researchers on the topic given at the general scientific level, as well as in the educational aspect: integration in enhancing teaching and learning (B. Bandhana, 2012), the curriculum integration (J. Beane, 1998), integrated education (M. Fan, 2004), obstacles to integration in education (W. Pelgrum, 2001), effects of technology on education integration (C. Rhonda, 2002; S. Rodney, 2002), teaching and learning of the integrated science (A. Jacinta, 2011), predictors of technology integration in education (K. Rogers, J. Wallace, 2011) etc.

We are convinced that the problem of integration in education should be solved not only at the empirical level but on the basis of a profound theoretical-methodological and philosophical bases. Many authors dedicated their publications to this area: integration of theoretical and practical undergraduate training in the processes of developing student teachers' professional competences (Rovnanova L. & Nemcova L., 2017), the integration of instructional technology into public education (Rodney S., 2002), form of curricular program integration (Udom, P., 2005), needs for the integration of agricultural subject with Thai Language (Sati-ansiríwiwat, S., Intorrathed, S., & Siriwan, S. 2016) etc.

At the same time, many problems related to the development of a holistic theory of the integration in education still need special research. These difficulties include the cumbersome disordered terminological apparatus of integration; lack of coordination of approaches to understand integrative approaches in education; divergence of scientific research on various aspects of the problem; the presence of a large number of separate principles, regulations, and laws related to integration; fusion of the concept of “integration” at numerous levels, scales etc.; identification of integration with similar concepts (synthesis, complexity, systematization, interdisciplinary) and the replacement of integrative processes with eclectic ones, etc.

Thus, in the practice of vocational educational institutions, the combination of curricula of secondary schools and vocational schools has led to increased consumption of study time, reducing the quality of general knowledge of VES students, duplication of educational material in different courses of subjects, knowledge disunity, and the unjustified overloading of knowledge.

We believe that the effective way of eliminating these shortcomings is the introduction of integrative forms and methods of teaching in the educational process, and the integration of the content of students’ knowledge. It promotes the formation of a comprehensive system of knowledge of students, activates their mental
activity, enhances the educational functions of education. As a result, both the quality of students’ general education knowledge and the level of their professional training increase. The importance of the problem of knowledge integration is also significant because at this stage, it is necessary not only to use natural resources rationally, but also to create new materials and technologies.

Many researchers agree that knowledge integration in vocational training is important as it is the knowledge itself that provides a solid foundation for the development of key competences. There is a growing body of research focusing on both theoretical and practical aspects of the issue: integrated education (M. Fan, 2004), obstacles to integration in education (W. Pelgrum, 2001), predictors of technology integration in education (K. Rogers, J. Wallace, 2011), etc.

However, there is limited evidence of multidimensional analysis of staged influence of knowledge and skills and their integration on students’ competence. It would also be of importance to consider vocational competences expressed through such specific aspects as efficiency, diligence, speed of assimilation, purpose, etc.

The object of research refers to aspects of integration of knowledge and skills as means of improving levels of students’ professional competence. The aim of research is to establish the relationship between the quality of acquired knowledge, skills and professional competences and the level of knowledge integration following the proposed methodology. The objective of the research is to compare the qualitative and quantitative aspects of knowledge and skills integration following the traditional and proposed methodology with the influence this integration may have on students’ skills and professional competences.

**Research Methodology**

The prognostic function of integration is the transition of its status from an instrument to a scientific methodology that is able to solve a number of debating issues in specific educational problems. From our point of view, what is most relevant is that integration (as a means of transitioning a set of elements into a new quality) is based on the resurgence of natural, objectively existing links between the elements. The development, as a process of emergence of new qualities that are significantly different from previous ones, is one of the most essential features of integration. Laws, dynamic and statistical patterns, the likelihood of events and processes occurring in different systems under an integrative approach are considered interdisciplinary. A number of phenomena that are seen as an opportunity in one area of knowledge become reality in another one. During the integration,
the external and internal status can change, giving a more complete picture of the phenomenon or object under study. The essence and the phenomenon of the integrative approach are the most complete, and also eliminate the danger of changing the essence of visibility. Therefore, we emphasize that the integrative approach fulfills its methodological function only if its use is justified.

**Methods**

Data was collected with the use of a survey and analysis was carried out using descriptive statistics methods. The comparison between control and experimental groups was made using Student’s criterion t-test independent by groups (quantitative data) and criterion Pearson test (nominal data) with the view of establishing the effectiveness of applying an integrative approach to the formation of students’ professional competences.

**The basis of the empirical research and its sample**

The survey was conducted with students of the specialty “Vocational Education (Computer Technologies)” in Interregional Vocational School of Road Transport and Construction and specialty “IT Education” in State Educational Institution “Higher Vocational School” № 8 in Stryi. The experimental group was taught using the integrative approach. Following the results of written tests and work experience, the students were assessed with the use of the following categories: professional knowledge (quantitative 100-point scale), professional skills (qualitative scale: low, Average, high) and professional competence (qualitative scale: absent, partially present, present). The group comprised 214 students.

**Research Results**

The summary of the results of research and experimental work shows the advantages of learning in targeted programs, which involve the integration of students’ knowledge about the structure and properties of substances and building materials. The introduction of integrative forms and methods in the educational process helps to increase students’ knowledge of physics, materials science and specialized disciplines.
The effectiveness of the implementation of knowledge integration is tested at three levels. At the first level, only some topics and sections of the program are tested, or the integration of knowledge only in terms of content. At the second level, the effectiveness of the integration of the content and forms of education are tested simultaneously, concerning all topics of the Physics course related to the structure, properties of substances and building materials. The third, the highest level, combines the integration of the content of educational material, the use of integrative forms of learning, and also provides for the synchronization of educational material in physics and materials science. At this level, synchronization causes the greatest organizational difficulties.

A total number of the students involved in the experiment is 25.

The comparison of results in control and experimental groups leads to the conclusion that the experimental groups observed qualitative changes in students’ knowledge. When answering the questions, the students of experimental groups try to proceed from the essence of the physical phenomenon that underlies the properties of the substance process. The understanding of physical nature of the learning material allows them to apply effectively physical and material science knowledge in specialized technology and vocational training: the knowledge levels of students of experimental groups in specialized technology were higher than those of the control groups.

In explaining the properties of materials and studying technological operations, the students of the experimental groups tried to explain the physical essence of the phenomenon, to apply different knowledge (in physics, chemistry, materials science). The phenomenon or process was considered not only as purely technical by the students of the experimental groups but in all their complexity.

An important result of the integration of students’ knowledge was that students of the experimental groups not only had a system of interconnected concepts and could use them effectively, but they also developed the need to penetrate into the nature of the phenomenon, to compare the results of different approaches to the phenomenon, to consider it comprehensively. At the lessons of physics, students applied knowledge of materials science and vice versa. Let us show the confirmation of these findings in specific examples.

1. The students of the control and experimental groups were asked to compare the properties and briefly describe the crystalline and amphorae bodies. In the answers of the students of the control groups, at the lessons of physics, there were practically no specific examples of different states of bodies, and at the lessons of material science the answers contained only isolated facts, not only related to the physical bases of this knowledge but also to each other.
The students of the experimental groups gave the answers both at the lessons of physics and materials science, trying to build them in a certain sequence with the use of physical and material science. First of all, the students tried to tell about the peculiarities of crystalline bodies: the presence crystal lattice, elementary cells, types of crystal lattice. Some answers suggested that each type of chemical bond corresponds to a specific type of a crystal lattice. The students also tried to explain the difference between ideal and real crystals.

2. Analyzing the answers to the questions of integrative character, it can be noted that the students of the experimental and control groups answered the questions of the first subgroup in a different way, which envisaged the basic knowledge in physics. For example, almost all the students in the experimental groups were able to answer and substantiate their answer to the question “Does the density of bodies change when it is heated?” In the control groups this question turned out to be quite difficult for most students. The largest difference in responses was observed in the third subgroup of questions of a production nature, where the level of knowledge of the students in the experimental groups was significantly higher, which indicates the direct impact of integration of general education and general technical knowledge on the level of professional knowledge.

3. At the end of the courses of physics and materials science the students of the experimental groups solve the tasks much faster, more accurately and more qualitatively. The analysis of the control work on Molecular Physics and Thermodynamics showed that the majority of the students of the experimental groups coped with the tasks of integrative nature, and their solution was often more rational and justified than the solution of the students of the control groups. The combined problem of mechanical properties of materials and thermal expansion was solved by the majority of students in the experimental groups, but caused difficulties for the students of the control groups. The same picture is observed when solving quality tasks.

The most effective forms of knowledge integration were integrated lessons, lectures, laboratory and test work. Such methods of knowledge integration as storytelling, integrated questions, tasks with integrated content, concretization and supplementation of physical knowledge both with general technical and special one, the use of complex tasks, gave positive results.

The results of a survey of teachers of physics and materials science, as well as conversations with teachers of special technology and masters of vocational training made it possible to conclude that they generally accept the proposed plans and programs for the study of physics and materials science. First of all, because it
Iryna Kozlovska, Iryna Savka, Oleh Stechkevych

increases the motivation to study physics and the level of knowledge of students in all three subjects. The learning offered by our programs has also received a positive assessment of the students. Most of them explain it by decreasing the load, reducing the volume of homework at the same pedagogical value, the availability of the study of special concepts, the emergence of interest in the study of physics.

We briefly present the results of quantitative analysis of students’ knowledge in the integration of content and forms of learning. To determine the effectiveness of learning according to the proposed programs and the use of integrative forms of learning, the coefficients of mastering the relevant qualitative (Kₚ) and quantitative (Kₚₑ) knowledge of students are calculated:

\[ Kₚ = \frac{A}{Q} \]

where: \( A \) – the number of correct answers to questions;
\( Q \) – the number of questions asked

\[ Kₚₑ = \frac{R}{N} \]

where: \( R \) is the number of correctly performed actions;
\( N \) is the number of actions that must be performed to obtain the correct answer.

Accordingly, the levels of students’ knowledge were set on the following scale:
Level 1 Grade “5” 1 < K < 0.9
Level 2 “4” 0.9 < K < 0.7
Level 3 “3” 0.7 < K < 0.5
Level 4 “2” 0.5 < K < 0.3
Level 5 “1” K < 0.3

The results of the analysis are presented in table 1.

<table>
<thead>
<tr>
<th>Levels Knowledge</th>
<th>Mastering Coefficients (in percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ascertaining groups</td>
</tr>
<tr>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>32</td>
</tr>
<tr>
<td>3</td>
<td>48</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 1. Coefficients of students’ knowledge acquisition at different levels
As can be seen from Table 1, training in experimental programs helped to increase higher and intermediate levels of knowledge and reduced the number of students with weak and very weak levels of knowledge.

Analyzing the level of students’ awareness of the acquired knowledge, we used a five-level system, where the levels are arranged in order of importance. The results of the analysis are presented in table 2. As it can be seen from the table, the coefficient of knowledge acquisition for different levels in students of experimental groups is much higher for didactically important levels that involve students’ ability to creatively use knowledge. This is directly facilitated by their integration. Levels of knowledge were set on the following scale:

1 – fragmentary knowledge
2 – formal knowledge
3 – awareness of the perception of factual material
4 – application of knowledge in familiar situations
5 – application of knowledge in non-standard situations

<table>
<thead>
<tr>
<th>Level</th>
<th>Assimilation coefficients (in percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ascertaining groups</td>
</tr>
<tr>
<td>1</td>
<td>40,3</td>
</tr>
<tr>
<td>2</td>
<td>29,2</td>
</tr>
<tr>
<td>3</td>
<td>16,5</td>
</tr>
<tr>
<td>4</td>
<td>12,8</td>
</tr>
<tr>
<td>5</td>
<td>1,2</td>
</tr>
</tbody>
</table>

An important indicator of the level and quality of students’ knowledge is their thoroughness, which can be roughly estimated using the coefficient of soundness of knowledge

\[ T = \frac{C}{M} \]

where: \( C \) – knowledge / in the form of elements: concepts and operations / \( M \) – knowledge that remains in memory / active / for time \( T \) after their receipt.

The results of the analysis of the soundness of knowledge are presented in table 3.
Table 3. Coefficients of soundness of knowledge

<table>
<thead>
<tr>
<th>Time interview</th>
<th>Coefficient of soundness of knowledge (in percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control groups</td>
</tr>
<tr>
<td>0</td>
<td>82</td>
</tr>
<tr>
<td>1 week</td>
<td>81</td>
</tr>
<tr>
<td>2 weeks</td>
<td>78</td>
</tr>
<tr>
<td>1 month</td>
<td>75</td>
</tr>
<tr>
<td>3 months</td>
<td>62</td>
</tr>
<tr>
<td>6 month</td>
<td>42</td>
</tr>
<tr>
<td>1 year</td>
<td>24</td>
</tr>
</tbody>
</table>

Pearson's criterion was used to test the validity of the obtained results (the differences between characteristics were compared with a reliable boundary, which expresses the boundaries of random variations (if the difference is greater than the reliable boundary, then the difference is significant, it expresses the systematic difference of the compared characteristics).

The test began with the formulation of the null hypothesis: the sample data were obtained from statistically identical populations, and therefore any difference in students' knowledge levels at the beginning and end of the experiment was a random variation. In the second step, the theoretical frequencies were calculated (see Table 4). The third step of the calculation was to determine the differences between the respective observed and theoretical frequencies. In the fourth step, a comprehensive indicator $\chi^2$ was calculated. A probability corresponding to this value was then determined (= 0.05, a reliable probability of 0.95). The fifth – the last step – was to search an upper bound $\chi^0_\alpha$ for $\chi^2$ and compare them. According to $\chi^0_\alpha > \chi^2$ the null hypothesis was denied, and therefore it was argued that the difference between the groups is systematic, that is, caused by the implementation of the proposed methodology.

Table 4. Computation of a Complex Indicator $\chi^2$

<table>
<thead>
<tr>
<th>Group</th>
<th>Educational Activities</th>
<th>Volume</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>At the beginning</td>
<td>25</td>
<td>76</td>
<td>98</td>
</tr>
<tr>
<td>At the end</td>
<td>25</td>
<td>62</td>
<td>86</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>138</td>
<td>184</td>
</tr>
</tbody>
</table>
Thus, in the course of research and experimental work the pedagogical expediency of integration of knowledge about the structure and properties of substances and building materials is proved; it is shown that it makes it possible to avoid duplication of related material, to overcome inconsistencies in the interpretation of concepts, the use of quantities and units of measurement. Didactic requirements for the implementation of the ideas of integrated learning of related material are substantiated, the integrated content of knowledge about matter and materials and the principles of thematic planning of physics and materials science courses by future machinists of construction machines are worked out, different forms and methods of knowledge integration.

The testing showed that the redistribution of students by level of knowledge had undergone significant changes compared to the initial testing (see Fig. 1):

![Students distribution chart](image)

**Figure 1.** Students distribution chart according to the level of knowledge at the beginning and the end of the experiment (according to the number of students)
Conclusion & discussion

The integration of students’ knowledge is an effective, sometimes non-alternative tool for shaping students’ scientific outlook.

The integration of general and technical knowledge on a scientific basis is a reliable basis for the formation of vocational knowledge; this ensures the effectiveness of knowledge, its depth, completeness, accessibility etc.

The integration of knowledge makes it possible to eliminate such negative phenomena as duplication of knowledge, the overload of students, fragmentation and formalism of knowledge, since it implies a unified approach to knowledge, their systematicity and interaction.

Integration of knowledge allows to provide logic of formation of complex concepts, understanding by students of physical essence of the phenomena which are studied in various subjects, correct and creative application of knowledge in the future professional activity of students.

Knowledge integration and forms of knowledge integration in the educational process must be scientifically substantiated in order to avoid pseudo-integration and eclecticism in the teaching material.

Knowledge integration has been appropriately implemented at various levels (knowledge proficiency, inter-curricular links, knowledge synthesis, knowledge interaction, etc.) and in various forms. The integration of knowledge in the educational process, in contrast to the synthesis of knowledge, involves the differentiation of knowledge. The processes of integration and differentiation, as well as the correlation between subject and integrated learning, depend on the content of specific subjects and profiles of vocational schools.

The implementation of integration into the educational process requires a certain sequence and involves such stages of research as the analysis of programs in disciplines that form complex concepts, the establishment of the structure of the integrated educational material (the selection of concepts, the definition of objective prerequisites for their integration, the establishment of a logical sequence of study educational material, the substantiation of forms and methods of knowledge integration); the analysis of the acquired knowledge system as a whole, the identification of qualitative and quantitative changes related to the integration implementation process.

Many problems related to the development of a holistic theory of integration in education still need some research. This led to the justification of a new field – educational integrology. We are convinced that a holistic theory of educational integration should be shaped as a scientific theory (regardless the field of
research) – that is, based on a system of laws (or regularities, postulates) and their consequences that explain a large number of empirical facts and have predictive capabilities. This is a positive role for educational integration laws for the transition from an axiomatic to a rigorous scientific theory of educational integration, for explaining a large number of empirical facts and observations based on educational integration laws and their consequences, and for strengthening the prognostic component of the scientific foundations of the educational field.

Discussions include issues that are directly related to integration in the educational field. It is important not to overburden any educational process with the excessive integration, but to focus on its optimum use: in fact, the laws of educational integrology are aimed at it. A number of problems are created by the presence of false integration, covering-up by the term integration of processes that are not integrative in the scientific sense.

References
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Pedeutology
University Degree and Citizen Science:
The Necessity for Promotion of the Latter
and the Possibilities of Its Organization in the Teachers’
Professional Training

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Abstract
The article reveals the opportunities, types of organization and ways to use the citizen science results at the Pedagogical University. It’s been proved that future teachers of different specialties have certain personal qualities that affect their training for scientific research activity. These qualities differ significantly. All in all, the average values of personal qualities indicators point out that future teachers can be quite successful in certain types of scientific research activities, considering their strong personal characteristics and improving the weak ones. It is proved that if the pedagogical university organizes the participation of students in citizen science, then they better develop the skills of self-organization and other personal qualities, essential for a modern teacher-researcher.

Key words: citizen science, future teacher, scientific research activity, personal qualities of a scientist, teacher-researcher.

Introduction

In the modern era of informatization, humanity has accumulated such amounts of information that they do not have time not only to use them with
benefits, but also to analyze them. Meanwhile, scientists from various fields understand that such arrays of information have a huge potential not only for new discoveries, but also to accelerate the development of certain areas of human activity and improve the quality of life in general. Who and how should analyze, systematize and offer to use the information accumulated by all citizens in practice? It is obvious that professional scientists will not be able to cope with this task. Other citizens should assist them. Awareness of the need to organize cooperation between scientists and ordinary citizens has led to the emergence of a new term «citizen science».

In the world in general and, in Australia, the USA, many Western European countries in particular, the concept of citizen science provides for research involving a wide range of volunteers, mainly amateurs, i.e. who have no prior training in science or education in general. However, as world experience shows, the use of research by ordinary citizens often helps scientists to achieve scientific goals more successfully than it would be possible without such involvement (Bonney et al., 2009), (Cooper et al., 2014). Furthermore, projects aimed at encouraging public participation in research as well as in science in general are common in many countries (Silvertown, 2009). Particular programs are designed specifically to engage schoolchildren or students (Bonney et al., 2014), (Burgess et al., 2017), (James-Creedon, 2016). The most recent example of important scientific research is the result of observations of schoolgirls from India, who discovered a new asteroid moving to the Earth. The discovery of the girls has already been confirmed at the University of Hawaii, and now it is waiting for confirmation of the asteroid orbit at NASA (https://edition.cnn.com/2020/07/28/india/india-schoolgirl-asteroid-intl-scli-scn/index.html).

Despite certain risks (obtaining incorrect or even false data), the work of many volunteers in civic scientific research is of great benefit to science in general, including saving finance, time and human resources (McCaffrey, 2005). However, in many countries the potential of this type of science is not yet fully exploited. Scholars explaining this refer to the lack of awareness of the public and representatives of institutional science about the types and possibilities of citizen science (Burgess et al., 2017). It is obvious that this type of scientific activity and the possibility of using its results require certain publicity events, which, in our opinion, could be organized by teachers (at the level of secondary schools) and lecturers (at the level of higher education institutions).

We should also mention a noteworthy investigation completed by the Polish researchers Katarzyna Kącka, Bartłomiej Michalak, Joanna Piechowiak-Lamparska who made an attempt to define the factors which condition the level of the scientific activity and research productivity of the higher education institutions
teachers (Kącka, Michalak & Piechowiak-Lamparska, 2018). Therefore, we offer great opportunities for citizen science to be applied in the future teachers training.

Each teacher must be a researcher and develop scientific research skills of his or her students. Thus, the problem we are considering is relevant in four aspects:

- from the perspective of professional self-development: without the research component, the process of teacher self-development loses its integrity, flexibility, core essence;
- from the perspective of the educational process: ensuring subject-subject relations and co-creation of teacher and student is impossible without activating the skills of research activities of all participants in the educational process;
- from the perspective of future professional activity: research skills and methods of action are part of the basic competencies of the teacher, are an integral component of his or her professional activity;
- from the perspective of the university image: the scientific achievements of teachers and students of the university increase its rating, and the attractiveness for applicants.

Analysis of recent researches

The significant impact of citizen science on education and science in the universities is recognized worldwide. In scientific publications, the use of the phrase «citizen science» is growing rapidly (Kasperowski & Kullenberg, 2019), (McCaffrey, 2005), (McKinley et al., 2015), (Ottinger, 2009), (Prainsack, 2014).

In addition to citizen science, the phrases crowd science, crowd-sourced science, civic science, networked science are also used. In general, the concept of citizen science involves the conduct of research by amateur volunteers and non-professional scientists through crowdsourcing and crowdfunding.

We appeal to the interpretation of citizen science, which defines it as the concept of involving the public in research conducted by scientists on the way to educational or scientific achievements (Bonney et al., 2009).

The contribution of citizen science to education has been demonstrated in many studies, but mainly in examples of solving environmental problems (Kasperowski & Kullenberg, 2019), (National Advisory Council, 2018), (Silvertown, 2009). For instance, it has been shown that information on bird migration and climate change is largely based on citizen science data (Cooper et al., 2014).

The results of theoretical, methodological and applied research prove that the research approach in the training of future teachers ensures the development and
functioning of pedagogical professional education at a qualitatively new level (Brovchak et al., 2018), (Kolomiiets et al., 2020), (Matiash & Mykhailenko, 2020), (Klochko et al., 2020). However, neither in the theory nor in the practice of the Ukrainian pedagogical education the powerful potential of citizen science is of particular significance.

The aim of the article is to find out the possibilities, types of organization and ways of using civil science to improve the quality of professional training of future teachers; identify differences in the levels of personal readiness of future teachers of different specialties for the scientific research.

Research skills are a necessary component of readiness for professional activity in any field. An important professional characteristic is the ability of the individual to study. Priority is given to knowledge not acquired during training in HEE (high educational establishment), but the following personality characteristics: the ability to identify the problem, find ways to solve it, find non-standard methods of performing complex tasks, process large amounts of information, work in a team, negotiate, self-organization skills, analytical and strategic thinking, stress resistance, purposefulness. The following personal characteristics are the most essential for a pedagogue-researcher: a high level of theoretical knowledge, intelligence; purposefulness, self-organization, diligence, ability to work with significant amounts of information, persistence, responsibility, mental capacity, ability to discuss, ability to be eloquent. We offered students to assess these qualities.

Our long-term observations of the activities of students of different specialties gave grounds to suggest that there are some differences in the readiness of representatives of different specialties to scientific activity.

**Methodology of Research**

We used the following research methods: survey, observation, comparison, generalization and systematization of practical experience, methods of mathematic statistics (cluster, correlative, factor analyses). The survey was conducted in the period of five years among undergraduate students. It was offered to evaluate on a 5-point scale the available personal qualities indicated in the questionnaire. The survey results were processed using Microsoft Excel statistical analysis programs; 986 participants were involved in the experiment. Statistical data processing was as follows:

1. Determination of the average values of indicators as the arithmetic mean of all students in the group for certain specialties.
2. Specification of the total values of indicators for each student and with the aim of determining the general level of readiness for scientific activities of students of different specialties.
3. Determination of maximum and minimum values of indicators for each specialty.
4. Calculation of values correlation coefficients of the corresponding indicators of readiness for scientific activity among students of different specialties.

**Research Results and Discussion**

Summarizing the results of the questionnaire before the experiment gave some interesting results. In particular, all students, regardless of their specialty, have the total value of ten indicators of readiness for scientific activity almost the same and it was in the range of 38 – 42 points out of 50 maximum possible. The most important in each group was the indicator of «responsibility» (the average value in different groups varied between 4.05 – 4.35 points), and the least important – «self-organization» (in the range of 3.05 – 3.28 points) (see table).

However, after the first year of the observation, it became clear that we could not compare the readiness for scientific activity of students in different specialties. In the results processing of self-assessment indicators, the correlation coefficients of numerical data for different groups of students were calculated. It was found that only the indicators of certain specialties correlate with each other. For example, future teachers of mathematics, physics, chemistry, biology and geography have quite similar results. In other specialties, the results on the same indicators, such as persistence or intellectual performance, were radically different.

Therefore, we were interested in longitudinal research, the data for which were able to be isolated from the general data set due to the fact that the research was conducted for several years in each specialty separately. According to the similarity of the results, we grouped students in the following research areas (clusters): science and mathematics – future teachers of mathematics, physics, chemistry, biology, geography (SM), history – future teachers of history (H), primary and preschool education – future preschool teachers and teachers of primary school (PPE), philology – future teachers of Ukrainian and foreign languages (Ph), physical culture – future teachers of physical culture (PC). The average arithmetic values of indicators for individual scientific areas (specialties) are presented in table 1.
Table 1. Average indicators values (particular personal qualities) in different scientific directions

<table>
<thead>
<tr>
<th>№</th>
<th>Personal qualities</th>
<th>SM</th>
<th>H</th>
<th>PPE</th>
<th>Ph</th>
<th>PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Level of knowledge</td>
<td>3.98</td>
<td>3.75</td>
<td>3.85</td>
<td>3.75</td>
<td>3.61</td>
</tr>
<tr>
<td>2</td>
<td>Purposefulness</td>
<td>4.15</td>
<td>3.45</td>
<td>4.08</td>
<td>3.42</td>
<td>4.12</td>
</tr>
<tr>
<td>3</td>
<td>Self-organization</td>
<td>3.39</td>
<td>3.28</td>
<td>3.35</td>
<td>3.05</td>
<td>3.43</td>
</tr>
<tr>
<td>4</td>
<td>Diligence</td>
<td>3.64</td>
<td>3.86</td>
<td>3.44</td>
<td>3.65</td>
<td>3.42</td>
</tr>
<tr>
<td>5</td>
<td>Work with information sources</td>
<td>3.87</td>
<td>3.95</td>
<td>3.81</td>
<td>3.91</td>
<td>3.56</td>
</tr>
<tr>
<td>6</td>
<td>Persistence</td>
<td>4.17</td>
<td>3.65</td>
<td>4.06</td>
<td>4.05</td>
<td>4.22</td>
</tr>
<tr>
<td>7</td>
<td>Responsibility</td>
<td>4.26</td>
<td>4.05</td>
<td>4.35</td>
<td>4.24</td>
<td>4.24</td>
</tr>
<tr>
<td>8</td>
<td>Intellectual performance</td>
<td>4.33</td>
<td>3.87</td>
<td>4.07</td>
<td>3.41</td>
<td>3.32</td>
</tr>
<tr>
<td>9</td>
<td>Ability to discuss</td>
<td>3.46</td>
<td>3.87</td>
<td>3.81</td>
<td>3.78</td>
<td>3.67</td>
</tr>
<tr>
<td>10</td>
<td>Public speaking skills</td>
<td>3.42</td>
<td>3.83</td>
<td>3.78</td>
<td>3.85</td>
<td>3.51</td>
</tr>
<tr>
<td></td>
<td>Generalized average score by specialty</td>
<td>3.87</td>
<td>3.73</td>
<td>3.86</td>
<td>3.71</td>
<td>3.71</td>
</tr>
</tbody>
</table>

Despite the relatively identical arithmetic mean values of the generalized indicator of readiness for research activities on personal qualities, as it can be seen from the table, some indicators for students of different specialties are significantly different. For instance, students of natural sciences and mathematics have higher indicators of intelligence, purposefulness, intellectual performance, but their ability to discuss and the public speaking skills indicators are lower than these indicators among the students of other specialties. Persistence rates were highest among future teachers of physical education, diligence and the ability to discuss – among historians. Future educators and primary school teachers have the greatest responsibility, and philologists are best prepared for public speaking.

To confirm the assumption concerning the existence of general differences between the students majoring in humanitarian and natural-mathematical specialties, similar surveys were conducted at three more higher education institutions: Lutsk Biotechnical Institute of International University of Science and Technology, the Department of Humanities and the Department of Natural-Mathematical Sciences of Volyn National University. The survey results confirmed our assumption that there are significant differences in the numerical indicators of the undergraduates’ personal qualities depending on their specialization. It has been found out that continuous majoring in a certain specialty may become the factor which significantly determines the students’ style of thinking and develops certain
personal abilities. Thus, a future specialist's readiness for R&D activity in certain indicators is conditioned by his/her profession specificity.

In general, the average values of personal qualities of the students representing four investigated higher education institutions (which are in the range of 3.71 – 3.87 points), indicate that Master's degree students can be quite successful in certain types of research, have their strong personal characteristics and improve the weak ones. Therefore, in order to train a teacher-researcher, it was decided to take appropriate measures aimed at increasing the level of their personal readiness for research activities.

The second part of the study was devoted to the process of formation of the necessary for research activities personal qualities of future teachers while studying at the university. We implemented this process in five stages (Table 2):

<table>
<thead>
<tr>
<th>Stages</th>
<th>Objective</th>
<th>Forms and methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>I – diagnosis</td>
<td>Identify the level of the necessary qualities formation</td>
<td>Questionnaires, interviews</td>
</tr>
<tr>
<td>II – motivation</td>
<td>Formation of the stable motives for scientific research</td>
<td>Problem-based situation discussion, case problem, dialogues, meetings with leading scientists, involvement in civil scientific research</td>
</tr>
<tr>
<td>III – preparation</td>
<td>Development of the necessary qualities for the research and the presentation of its results</td>
<td>Visiting thesis defenses, analysis of scientific problems, finding ways to solve them, performing mini-research</td>
</tr>
<tr>
<td>IV – correction</td>
<td>Improvement of the strengths and strengthening the weaknesses of the personality</td>
<td>Mini-reports on the topic of the thesis, self-analysis of the speech, analysis of reports and publications of other researchers</td>
</tr>
<tr>
<td>V – implementation</td>
<td>Creating a situation of success to develop a strong desire and personal readiness for scientific activity</td>
<td>Thesis defense, embarking on postgraduate studies, writing scientific articles</td>
</tr>
</tbody>
</table>

Taking into account the results of the survey, conducted in the first stage of research, we concluded that we need to involve students of pedagogical universities in citizen science from the first year of their study to increase the level of personal readiness of future teachers for research and improve certain indicators of such readiness.
Participation in citizen science can be passive or active. In the first case, the student in the role of the subject fills out questionnaires, has various types of testing, and passes tests and so on. In case of active participation, the following types of scientific activity are possible:

- observation of natural objects or phenomena;
- work with archival records;
- usage of specialized computer programs for modeling virtual or studying real objects, etc.

In the education process we intensify the students’ research activities in the following forms:

- delivering problem-based lectures that have a high degree of interactivity;
- performing the individual research tasks;
- solving problems in practical classes;
- conducting pedagogical traineeship at schools;
- writing and defending term papers and thesis.

Implementing the above-mentioned forms, we consider a range of requirements:

- maximum loading of the educational process with creative, interesting and cognitive situations;
- stimulating the scientific research activities, initiating the prospects of personal and professional growth;
- purposeful, systematic management of the educational process taking into account the strong personal qualities and needs of each student;
- organization of the educational process on the basis of problematic educational and scientific research tasks;
- active use of information and communication technologies and scientific databases to increase the efficiency of searching for scientific information and presenting the results of their own research;
- free choice of the research direction;
- monitoring of cognitive interests and research abilities of students;
- performance of interdisciplinary tasks that require the use of integrated knowledge.

The results that students can obtain in the course of interdisciplinary tasks in the form of citizen science, provide not only significant material for understanding the specifics of modern school, but also ensure the integration of pedagogical education with institutional research in the course, term papers, thesis (Kolomiiiets et al., 2017).
The organization of citizen science at the Vinnytsia Mykhailo Kotsiubynsky State Pedagogical University and the involvement of teachers and students in it made it possible to obtain results important for institutional science (http://vspu.edu.ua/science/new-style/students.php). We present some of the above-mentioned results.

All students of pedagogical specialties are involved in diagnosing their professional competence, which allows to identify possible deformations in time and to carry out further correction of personality in the process of professional self-development. The main focus is on developing the ability to determine the strategy of future pedagogical activities, use innovative pedagogical technologies, master the techniques of interpersonal communication, initiate and organize research and innovation projects, self-study and self-develop (Brovchak et al., 2018).

At the Department of Mathematics, a contest of methodical skills has been held for undergraduate students for several years in a row. The results of the survey of the participants of the contest before and after its holding showed an increase in the interest of the vast majority of students in methodological science, in future activities at school. Some students, having won this contest, decided on their own aspirations and intentions to study for a master’s degree in the future of scientific research (Matiash & Mykhailenko, 2020).

The effectiveness of the integrative use of digital models of circulatory dynamics and interactive teaching methods to improve the health competence of physical education teachers has been confirmed. Namely, there was a significant improvement in the results of the formation of knowledge of circulatory dynamics and critical thinking of physical education teachers (Klochko et al., 2020). Due to the participation of student-athletes in the experiment, the expediency of using methods to determine the athletic form of athletes in team sports during the training macrocycle has been scientifically substantiated (Kostiukevych et al., 2019).

The lecturers and students of the Department of Chemistry scientifically substantiated the feasibility of modern entrepreneurs to use bentonite clay as a natural sorbent capable of absorbing heavy metal ions to purify wastewater and improve its physicochemical and organoleptic indices by ion exchange and filtration properties. The environmental component in business is seen not as a barrier to development and unavoidable costs, but as an area of additional opportunities, a new means of increasing competitiveness through relatively low cost (Sakalova et al., 2019).

By involving master’s students in an experiment in the study of certain disciplines in English the main factors that motivate future teachers to learn foreign languages were identified (Kolomiiets et al., 2020).
Large-scale involvement of future teachers in passive and active participation in scientific activities over the past few years has contributed to a significant increase in the number of medal places in various contests of student research papers (Fig. 1) http://www.vspu.edu.ua/science/new-style/students.php).

![Graph showing the number of submitted works, the amount of invited students, and the amount of medal places over the years]

**Fig. 1.** Increasing the activity and efficiency of participation in contest of student research papers

The figure demonstrates a direct linear relationship between the submitted applications for competitions and the number of victories. However, the victory of students is not the most important result of their involvement in scientific research activities. We fully agree with Barbara Prainsack (Prainsack, 2014: p.156) that for many students, being part of something useful, being publicly recognized in publications, or learning something new about a particular field of science is a sufficient incentive to participate in citizen science. For many future teachers, involvement in citizen science during the five years of study at the university has become a significant incentive to embark on postgraduate program, as indicated by the dynamics of the number of applications over the past 5 years (http://www.vspu.edu.ua/science/new-style/asp.php).

In general, the intensification of mass involvement of students not only in institutional but also in citizen science, as our practice shows, provides strengthening of integration of science and education (Kolomiiets et al., 2017), closer contact of pedagogical university with scientific institutions, development of partnership with enterprises and other economic entities in the region (Klochko et al., 2020), the university’s participation in the implementation of scientific and technical
policy at the regional level (Sakalova et al., 2019), expanding the participation of scientists and students in international scientific and educational programs (Denysyk et al. al., 2019; Kolomiiets et al., 2020).

Our observations showed that the active participation of students of the Pedagogical University in various types of citizen science for several years contributed to an increase in the number of those willing to obtain master’s degree, and among master’s program students the share of those, engaged in scientific activities in the future, is significantly increased (from 13.2% to 24.8%).

**Conclusions**

Thus, despite some differences in the levels of personal readiness of future teachers of different specialties for research, citizen science at the Pedagogical University is one of the most effective methodological approaches to improve the quality of professional training of teachers, a means of integrating science and education, and a powerful tool for promoting scientific knowledge among young people and strengthening students’ motivation for scientific research activity.

The main, most effective forms of intensification of research activities of students of pedagogical universities are defined as follows: interactive problem-based lectures that require analytical and critical thinking; performance of individual scientific-research tasks; solving practical problems that require scientific research; conducting a mini-experiment during practice in school; performance of term papers and thesis.

Personal qualities and skills formed by students while their study at the university, taking into account the basic conceptual provisions of civil science, form the personal and professional readiness of the future teacher to carry out innovative pedagogical activities in accordance with the principles of science, nature and culture. The teacher-researcher will always be interesting for students and will be able to form the relevant research personal qualities and skills.

**References**


ESP Teachers’ Perspectives on the Online Teaching Environment Imposed in the Covid-19 Era – A Case Study

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Abstract
This paper reports on the results of interviews conducted with ESP teachers examining their attitudes towards different aspects of online language teaching. The aim of this case study is to investigate how confident the teachers feel while teaching online in synchronous mode and to examine whether this emotive attitude is in correlation with their prior experience in both formal and informal online environments. It also aims to establish correlations between the respondents’ attitudes towards the degree of difficulties and challenges pertaining to teaching all language skills in an online education context. The findings derived from the analysis of the respondents’ answers point out to the need to investigate the possibilities offered by digital technologies in order to help learners enhance their language skills and competencies.

Key words: online language teaching at tertiary level, ESP teachers’ perspectives, COVID-19

Introduction
Coronavirus disease outbreak has brought about abrupt and significant changes in everyday life, and education has experienced them so intensively that old habits, approaches, and teaching methods have to be adapted to a newly-designed online setting – or, in some instances, have to be completely altered (UN, 2020). Educational institutions across the world responded to these new demands with different models and policies, but, due to the demand for physical distancing, they
all contained the same denominator – an online context. In April 2020, the UNESCO estimated that over a billion and a half students across the world experienced changes in their educational habits (Huang et al., 2020, p. 97).

Foreign language teaching, already burdened by complexities of the 21st-century context demands, and learners whose needs have become subtler and specific, have faced various challenges enhanced by the use of ICT and various educational platforms. What characterises language is communication among people, which implies that language is realised in social interaction (Bugarski, 1996, p. 12) – and, consequently, teaching language presupposes a social context wherein this communication can be developed.

This paper reports on the results obtained from the interviews with 16 ESP teachers working at a private university in Serbia, located in 4 centres, who teach language for specific and academic purposes to over 10 000 students in economics, sports management, IT, tourism, and environmental science. The interview comprises questions examining teachers’ affective attitudes towards online teaching experience. The variables are intersected and compared by a two-tailed Pearson correlation coefficient with the purpose to investigate whether there is a correlation between the teachers’ attitudes towards the degree of difficulty in teaching skills paired together – and, if there is, what the value of the correlation is. The aim of this case study is to explore ESP teachers’ perspectives on the newly created online teaching environment at the tertiary level and to investigate how demanding the respondents find teaching all language skills exclusively in the online context.

**At the Crossroads of VLE and ESP**

According to the official surveys, as much as 89% of the global student population has been severely affected by the scars the COVID-19 pandemic has left on the area of education, primarily embodied via massive classroom closure. The unexpected interruption of traditional activities has faced educators, students, as well as decision- and policy-makers from the field with a number of both possibilities and challenges of online teaching-learning.

The imposed virtual learning environment (VLE) has appeared in a number of different forms – some DLS platforms have reached their full potential, while some new have been discovered and introduced to teaching-learning practices. What all of them have in common is adequate maintenance, skilful management, i.e. proper training of all the participants, and technical equipment provided (Altbach & De
Wit, 2020). Education institutions at the tertiary level are considered to be less prone to the use of online teaching mode, and the most common reason stated refers to not only a lack of interaction and proper training for teachers (Allen et al., 2016), but also many other obstacles, which, according to Pu (2020), include issues related to a proper adaptation of curricula, uncertainties for how to carry out the evaluation, and, inevitably, technical issues related to the Internet connection.

We can undoubtedly claim that the phenomenon of digitalisation has led to countless changes and improvements in many spheres of human endeavours, including education. Though it is believed that digitally-oriented practices could immensely improve teaching-learning outcomes, given their transparency, flexibility, mobility, efficiency, etc., the questions regarding their limitations (as well as drawbacks) still remain open.

Educating qualified specialists nowadays envisions their fluency in at least one foreign language, which meets the needs of very competitive labour markets (Shcherbakova & Ilina, 2019). Teaching language for specific purposes has always asked for a specific skill, dual knowledge – adding online teaching requirements to the abovementioned makes a present-day ESP teacher a true wizard. The statement by Hutchinson and Waters (1987), “Tell me what you need English for, and I will tell you the English that you need” (as cited in Belcher, 2006, p. 8), vividly illustrates the notion of ESP, and speaks in support of its multiple and complex layers. We have witnessed the introduction of numerous MOOC (massive open online courses) platforms, as well as OER (open education resources) databases, aimed at encouraging contemporary trends in education. Even so, prior to the pandemic outbreak, it could be said that the abovementioned sources had not been fully exploited and that various forms of e-learning were visible almost solely at universities or senior years of high school (Juszczyk & Kim, 2020, p. 118). Namely, back in 2015, it was reported that 58.7 % of higher education institutions in the USA did not consider introducing any MOOCs, as part of their common practices (Allen et al., 2016, p. 6), despite the fact that the open-access resources had been recognised as a means by which institutions around the globe could ‘contribute worldwide’, as a form of the ‘New Learning’ approach (García-Sánchez, 2016, p. 491).

Irrespective of the abovementioned open-access spaces, it has also been noted that higher education institutions are less prone to the utilisation of online teaching modality when – compared with institutions focused on other levels of education, with teachers still regarding interaction and the lack of professional training as their primary obstacles (Allen et al., 2016). On a similar note, Pu (2020), addressing the potential of online teaching from a language teaching perspective, reported...
that obstacles such as programmes (syllabi and course curricula), fair assessment in VLE, Internet support, etc. which – when put together - could trigger “insecurity on the instructor’s part as to whether the online communication is effective” (Pu, 2020, p. 347).

Technology has been a part of ESP classrooms around the world for decades – since the very introduction of the first PCs and websites, in the form of digital software, tools, or digital (-ised) learning sources, frequently as a means complementing traditional face-to-face instruction (Suhonen, 2005; Bloch, 2013). The present moment leaves language educators and learners with little choice; moreover, „the most evident impact on teachers is the expectation, if not the demand, of the continuity of teaching activity using a virtual modality” („COVID-19 and higher education”, 2020). Even though we cannot predict whether and what form of teaching will take place in the upcoming period, the recommendations speak in favour of a variety of modes characterising online delivery, such as (but not limited to) webcasts, MOOCs, flipped classroom, grouped, joint online activities, etc. (Huand et al., 2020).

Adding the abovementioned to the existing and undebatable complexity of ESP, which integrates „combined needs assessor, specialized syllabus designer, authentic materials developer, and content-knowledgeable instructor, capable of coping with a revolving door of content areas relevant to learners’ communities” (Balcher, 2006, p. 139), it appears that ESP teachers have never before been exposed to such tall orders and have been experiencing a gruelling test.

**Research Context and Methodology**

This research represents a case study investigating ESP teachers’ perspectives on the online teaching environment imposed by the COVID-19 outbreak. It also aims at getting a better insight into the possibilities and challenges the teachers faced while teaching productive and receptive language skills to university students. The study relies on the results obtained from the interviews conducted with 16 ESP teachers teaching students of specific professional areas – business, IT, tourism, sports management, and environmental science. The researchers conducted the interviews either in-person on the university premises or via the Google Meet platform, relying on the naturalist paradigm, which presupposes an individual as a pillar of society (Kvale, 1996). The researchers aimed at a unified set of questions presented to all the respondents, which, according to Firmin (2008), provides a high degree of reliability.
The interview comprises fourteen questions measuring teachers' attitudes towards online English language teaching. The answers provided for each question include a five-point Likert scale of agreeing. The results are shown in tables that illustrate the frequency of the respondents' answers and statistical data relying on a two-tailed Pearson correlation coefficient. With the aim to provide a better insight into the teachers' perspectives on the possibilities and obstacles of online teaching, the researchers noted down teachers' additional comments, and subsequently analysed and interpreted the data.

**Research Results: Analysis and Discussion**

The questions the interviewees gave the answers to are listed in Table 1, and the numbers in the columns indicate the number of teachers who opted for a given category, which are marked from 1 to 5, whereby 5 denotes „strongly agree”, 4 is the value for „agree”, 3 for „neither agree nor disagree”, 2 for „disagree”, and 1 for „strongly disagree”. The final column represents the mean value calculated for each statement.

**Table 1. Questions from the Interview and the Number of Answers**

<table>
<thead>
<tr>
<th>Question</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: I feel confident when teaching online.</td>
<td>9</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4.56</td>
</tr>
<tr>
<td>Q2: I am skilful enough to overcome the obstacles which might occur during online classes.</td>
<td>7</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>4.25</td>
</tr>
<tr>
<td>Q3: I am an active user of social networks.</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>6</td>
<td>0</td>
<td>2.81</td>
</tr>
<tr>
<td>Q4: I have already had significant experience in using ICT in language teaching</td>
<td>0</td>
<td>3</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>2.81</td>
</tr>
<tr>
<td>Q5: I find teaching vocabulary to be very demanding in an online environment.</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>8</td>
<td>1</td>
<td>2.56</td>
</tr>
<tr>
<td>Q6: I find teaching grammar to be very demanding in an online environment.</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>0</td>
<td>2.81</td>
</tr>
<tr>
<td>Q7: I find teaching speaking skills to be very demanding in an online environment.</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>5</td>
<td>9</td>
<td>3.44</td>
</tr>
<tr>
<td>Q8: I find teaching writing skills to be very demanding in an online environment.</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>3.81</td>
</tr>
<tr>
<td>Q9: I find teaching listening skills to be very demanding in an online environment.</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>3.25</td>
</tr>
<tr>
<td>Q10: I find teaching reading skills to be very demanding in an online environment.</td>
<td>0</td>
<td>2</td>
<td>7</td>
<td>7</td>
<td>0</td>
<td>2.69</td>
</tr>
</tbody>
</table>
The answers to the first question show a high level of self-confidence present among the teachers, with a mean value of 4.56 and a standard deviation of .512. The descriptive statistics for the second question, which examines the interviewees' habit of maintaining informal online communication, as provided by the social media use, shows a mean value of 2.81 and a standard deviation of .834.

Questions related to teaching primary (both receptive and productive) and secondary (grammar and vocabulary) skills (Q5-10) are grouped, and the correlation between them is represented in Table 2.

<table>
<thead>
<tr>
<th>Question</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q11: I feel that I have full control over the teaching-learning process in an online environment.</td>
<td>3</td>
<td>7</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>3.56</td>
</tr>
<tr>
<td>Q12: What I miss in an online instruction is peer and teacher-student traditional interaction.</td>
<td>10</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4.56</td>
</tr>
<tr>
<td>Q13: Online teaching mode takes more time for class preparation.</td>
<td>10</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>4.31</td>
</tr>
<tr>
<td>Q14: Online instruction allows me to achieve the course (target) outcome</td>
<td>2</td>
<td>12</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3.63</td>
</tr>
</tbody>
</table>

Table 2. Correlation between Language Skills

<table>
<thead>
<tr>
<th></th>
<th>Q5</th>
<th>Q6</th>
<th>Q7</th>
<th>Q8</th>
<th>Q9</th>
<th>Q10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q5 Pearson Correlation</td>
<td>1.00</td>
<td>.736</td>
<td>.360</td>
<td>.660</td>
<td>.476</td>
<td>.767</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.001</td>
<td>.166</td>
<td>.005</td>
<td>.062</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>Q6 Pearson Correlation</td>
<td>.736</td>
<td>1.00</td>
<td>.655</td>
<td>.598</td>
<td>.634</td>
<td>.526</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.001</td>
<td>.006</td>
<td>.014</td>
<td>.008</td>
<td>.360</td>
<td></td>
</tr>
<tr>
<td>Q7 Pearson Correlation</td>
<td>.364</td>
<td>.655</td>
<td>1.000</td>
<td>.401</td>
<td>.372</td>
<td>.344</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.166</td>
<td>.060</td>
<td>.124</td>
<td>.115</td>
<td>.192</td>
<td></td>
</tr>
<tr>
<td>Q8 Pearson Correlation</td>
<td>.660</td>
<td>.598</td>
<td>.401</td>
<td>1.000</td>
<td>.504</td>
<td>.630</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.005</td>
<td>.124</td>
<td>.046</td>
<td>.009</td>
<td>.012</td>
<td></td>
</tr>
<tr>
<td>Q9 Pearson Correlation</td>
<td>.476</td>
<td>.634</td>
<td>.372</td>
<td>.504</td>
<td>1.000</td>
<td>.610</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.062</td>
<td>.008</td>
<td>.155</td>
<td>.046</td>
<td>.012</td>
<td></td>
</tr>
<tr>
<td>Q10 Pearson Correlation</td>
<td>.767</td>
<td>.526</td>
<td>.344</td>
<td>.630</td>
<td>.610</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.010</td>
<td>.036</td>
<td>.192</td>
<td>.009</td>
<td>.012</td>
<td></td>
</tr>
</tbody>
</table>

The respondents' answers reveal a high level of self-confidence present among language teachers relating to teaching in an online environment, and in their ability to cope with the potential obstacles occurring during online classes. The high-
est mean values stem from the answers to the questions reflecting respondents’ attitudes towards their own abilities to organise and conduct online classes. On the other hand, the results show a considerably smaller number of positive answers to the questions relating to the respondents’ active involvement in the use of social media and previous experience in teaching exclusively in an online environment using ICTs. Additionally, the mean value of the answers to the question related to teachers having full control over the teaching-learning process in an online environment is lower and amounts to 3.56. Although still high, this value indicates a more self-critical attitude compared to the previous answers, illustrating a rather high percentage of teachers who feel self-confident in an online teaching context.

The majority of the respondents believe that online instruction allows for the course outcomes to be achieved to a high degree – with a mean value of 3.63 – which represents one of the main aims of any teaching endeavour in both traditional in-person and online teaching and learning environments. In order to achieve these outcomes, proper preparations are needed, and the statistical data of the analysis of the answers to the question pertaining to the time needed for class preparation in online teaching mode show a very high level, with a mean value of 4.31. Regardless of the high mean values obtained for all the above questions which show language teachers’ positive attitudes towards various aspects of the online teaching environment and its potentials, the respondents still prioritised a traditional in-person setting, as nearly all respondents strongly agreed or agreed to the statement that what they miss in online instruction is the peer and teacher-student traditional interaction, with a mean value of 4.56.

The analysis of the answers to the questions examining teachers’ attitudes towards the degree of complexities involved in developing all language skills in an online environment shows that the respondents believe that the least demanding task for teachers was teaching vocabulary, and the mean value for this question is 2.56. Other questions that resulted in lower mean values relate to teaching reading skills and grammar, and they amount to 2.69 and 2.81, respectively. A higher percentage of the respondents find teaching speaking, writing, and listening skills more demanding, and the mean values for these are as follows: 3.25 for listening skills, 3.44 for speaking skills, with the most demanding aspect of teaching, according to the respondents, relates to teaching writing skills, with a mean value of 3.81. Table 2 illustrates the correlation coefficients between language skills, and the analysis of the results shows the high level of correlation. The only exception refers to teaching speaking skills – the findings show that there is no statistically significant correlation between difficulties in teaching speaking skills on the one hand, and vocabulary, writing, listening, and reading skills on the other. Interestingly, there is
a positive correlation between teachers’ attitudes towards teaching speaking skills and grammar, and its value is .655. Another example of statistically insignificant correlation arises from the comparison of teaching listening skills and grammar, and the correlation coefficient is .476. The result which stands out refers to the positive correlation of teaching grammar and all other skills, which emphasises the permeating character of grammatical importance in language teaching on the part of the teachers. The highest correlation coefficient is observed in the variables of teaching reading skills on the one hand, and vocabulary on the other, and the values of the coefficients for these variables are .767 and .736, respectively.

The analysis of the interviewees’ additional comments shows that these can be categorised into three groups. The first includes adjectives describing respondents’ online teaching experience (challenging, demanding, time-consuming, practical, comfortable, useful, innovative, multi-tasking, boring, astonishing, amazing, tech-savvy, different, intense, emotionally distant, time-saving, safe). The second group encompasses comments related to the possibilities created in the online environment (more students attending classes; more relaxing atmosphere for some students; more efficient and immediate teacher-student feedback; time-saving on commuting; absence of discipline issues). The last group comprises comments referring to the obstacles and challenges encountered during the online teaching (student motivation; some students do not have proper equipment; some students feel uncomfortable turning on their microphones and cameras; difficulty to know the number of students involved in tasks; lack of body language). The comments provided by the teachers to a high degree correspond to the comments given by students in a study examining students’ satisfaction with online teaching organised in a similar context (Prodanović, Gavranović, 2021).

**Conclusion**

This study focused on ESP teachers’ perspectives on online language teaching and their experiences in teaching language skills gained in a synchronous teaching environment. The obtained results showed that the respondents, all of them “digital immigrants”, consider that they can manage to conduct classes in an online environment in a satisfying manner, but with different levels of difficulty while teaching receptive and productive language skills. In their opinion, the most challenging skills to teach in an online education context were speaking, writing, and listening. On the other hand, other skills – reading, grammar, and vocabulary were easier to teach. The implications of these results point to the need for redefining teaching
language skills and investigating the digital environment characterised by specific features and potentials which are different from a traditional face-to-face teaching context. The use of ICT, governed by planned and carefully defined teaching goals, can cast new light on teaching receptive and productive skills. The additional comments provided by the interviewees draw attention to the important aspect of foreign language teaching, as emphasised in modern applied linguistics – that teaching should be subordinated to learning (Mishra, 2000). Teachers felt very confident when assessing the teaching process in the online learning environment, but the additional comments showed a more reserved and careful attitude towards the learning process. These comments, and the high value obtained for the question related to the respondents' attitude towards communication in the formal online environment, show that it is necessary to accord teaching techniques and methods in an online environment with a high level of self-confidence present among the respondents. This can be achieved relying not only on the traditional theories of the twentieth century – behaviourist, cognitive and constructivist – but also on the knowledge obtained from the theory of collaborative online learning in the twenty-first century (Li, 2017, p. 8).

While the results of the study can point to some prominent issues ESP teachers come across in online teaching environment, encompassing both characteristics they see as beneficial and those they regard as distracting or even interfering – the presented study has to be tempered by its limitations. Foremost, the study addresses a limited number of respondents working under the same working conditions (learning platform, equipment, IT support, etc.); an enlargement of the sample, along with its diversity, could be beneficial and uncover more useful data. This case study responded to only one aspect of the complex nature of online language teaching, which needs to be approached from other aspects as well, including students’ perspectives and measurable learning outcomes. The pandemic opened a vast area yet to be investigated, and the potential research and findings which could greatly contribute to a deeper understanding of the complex nature of foreign language teaching.

References


The Roles of Elementary Teachers in Addressing Cultural Indifferences in the Classroom

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Abstract
Cultural indifferences among students are rampant, especially in a multicultural classroom. Thus, the teachers become the frontliners in addressing these differences inside the classroom. This study aimed to determine the roles of the teachers in solving cultural indifferences inside the classroom. Using the Transcendental phenomenological approach in research, the researchers explored the experiences of eight teachers in Malangas Special Education Center, Poblacion, Malangas, Zamboanga Sibugay, Philippines. These teachers have personally experienced solving cultural indifferences inside their classroom due to having students from diverse tribes. The researchers explored their experiences through one-to-one interviews during their free time in their respective classrooms. Employing the Phenomenological data analysis of Kleiman (2004), the teachers played the roles of adviser, peacemaker, listener, and guidance counselor. These roles helped them address cultural discrimination inside the classroom and establish a peaceful learning environment to facilitate learning effectively and efficiently.

Keywords: cultural indifference; phenomenology; peaceful environment; Philippines

Introduction
One of the essential characteristics of an ideal classroom is having a positive learning environment. Having a democratic classroom creates self-motivation for students to strive for success. A democratic classroom helps reinforce the management of the class and the teacher’s expectations. When students come
together in the same classroom, they exhibit different behaviors and create clashes among other students. Perso (2004) conducted a study on responsive teaching in the cultural classroom and has emphasized that cultural indifferences in the classroom have been a global problem. Malaysian schools, for example, have the challenge of multiethnic and multiracial unification (Malakolunthu, Siraj, & Rengasamy, 2010). Thus, students are being taught intercultural awareness. They are also taught the values of co-existence and cooperation with other cultural groups in the school. Moreover, the high teacher-student ratio in some remote schools and the negative attitudes by teachers and heads affect multicultural education in schools (Mapuranga, & Bukaliya, 2014). Teachers have discomforting emotions towards growing diversity and Multiculturalism in their workplace (Zembylas, 2010).

In the research locale, the teachers find it challenging to teach and discipline these students from diverse cultures and sub-cultures (Ramirez, 2006). These students sometimes encounter problems with their co-students. Because of the history of conflicts, students coming from different tribes have biases (Tawagon, 2008). These biases result in bullying experiences such as physical, verbal-relational, and cyberbullying (Ouano, Buot, Conway, & Dela Rosa, 2013). So, teachers need to employ different strategies to prevent and solve conflicts. They need to be vigilant in addressing these problems in their classrooms.

The teacher’s role as the solver is fundamental in the classroom to deal with and resolve possible conflicts in his/her designated learning environment and deal with discrimination because of cultural indifferences. It is significant for teachers to develop care for the students for them to have to develop their character and create a positive connection to others (Ballada, 2014). Institutions like schools should reflect on the students’ existence coming from diverse cultures (Cuyjet, Howard-Hamilton, & Cooper, 2012). Multicultural education helps educators, especially elementary teachers, become effective facilitators in a diverse classroom (Banks & Banks, 2019). Anchored on the theory on Multiculturalism, the researchers were enthusiastic about conducting this study on the teachers’ roles in solving cultural clashes in the classroom. The study described the different roles of elementary teachers in solving cultural indifferences happening inside the classroom. This study also investigated further into how these roles helped the teacher solve cultural differences inside the classroom.
Method

This study employed a qualitative research design using the transcendental phenomenological method (Welton, 2000). Qualitative research stresses the verbal descriptions and explanations of a particular phenomenon in the life experience of the research participants (Garcia et al., 2011). Phenomenology extracts the pattern of the research participants' experiences to describe a typical structure of their experience (Moustakas, 1994). In this study, the researchers described eight elementary teachers' experiences as they narrated their roles in addressing students' indifferences inside the classroom.

The research environment of the study is the Malangas Special Education center, Poblacion, Malangas, Zamboanga Sibugay. The school has pupils from different local tribes in the Philippines, such as Cebuano/Visayan, Subanen, Tausug, Maguindanaon, Ilonggo, Maranao, and Samal. Thus, the Malangas Special Education center is an appropriate environment for this study. The study participants were the eight teachers of Malangas, SPED center, who encountered cultural indifferences among their learners. The researchers chose the participants who have encountered cultural indifference and served as solvers to ensure that the participants could respond to the study’s objectives.

The researchers were the main instrument of this study, aided by their interview guide. In the interview, the participants answered the questions based on their experiences. Hence, there were no suggested answers, but the researchers purely depended on the participant’s decision-making skills, allowing them to think critically. The researchers prepared follow-up questions to strengthen the necessary information. These data from the participants in this study were gathered through in-depth interviews and considered individual interviews as its approach.

The researchers followed the phenomenological data analysis of Kleiman (2004). The researchers went through verbatim transcription, coding, and collating. In the verbatim transcription, the researchers made a written record of an interview. In the coding process, the researchers used symbols like words to represent arbitrary or subjective data to ensure the data's privacy and secrecy. After so, the researchers collated the data to bring the codes together to form themes.

The researchers observed the proper way of researching as they upheld ethical norms. Being non-maleficent, the researchers avoided harming the participants in the interview, giving them the free will to be part of the study and providing them the time to answer the questions. The researchers considered the good and positive outcome of this study that can help the research participants. The
researchers considered the participants’ autonomy and self-determination since they respected the values and decisions exhibited by the participants. They allowed the participants to freely describe their encounters in dealing with the pupils who have cultural indifference.

Results of Research

In solving cultural indifferences in the classroom, the teachers play different roles such as an adviser, a peacemaker, a listener, and a guidance counselor. Moreover, these four roles help them unite and create a positive learning environment in the classroom by avoiding cultural discrimination and establishing a peaceful learning environment. The effectiveness of these roles in addressing cultural indifferences was seen in these two themes: avoiding cultural discrimination and establishing a peaceful learning environment.

Adviser. The teachers served as an adviser in solving cultural indifference in the classroom. As an adviser, he/she gave positive opinions, valuable suggestions, specific recommendations, and provided information to lessen and stop cultural clashes in the classroom. The teacher – participants revealed:

I talk to those who are involved and give them advice, warnings or give them conditions. – P1

You will give them advice because they will believe you. After all, you are their teacher. You give them suggestions to solve their problems. – P2

I always give them a piece of advice. Every day, I tell them not to fight, especially that they are still children. I tell them to understand each other because they are coming from different cultures. – P5

In settling their quarrels, especially those that involve their cultures, I advise them and give my opinion to settle the quarrel. – P6

Peacemaker. Teachers, as peacemakers, helped both parties to be reconciled to stop them from fighting and arguing. Teachers would appease the opposing students’ emotional conditions to be reconciled and made peace. The participants narrated:

Sometimes when they argue about their beliefs, especially when there are topics in our lessons that are sensitive to others’ beliefs, I will become a peacemaker. - P1

If there are clashes because of their cultures, I will act as a peacemaker. As a peacemaker, I need to be flexible and ready to understand. – P2
In their arguments that involve their culture as teachers, I acted as a peacemaker. I set classroom rules to promote collaboration. – P3

Peacemaker is one of my roles as a teacher. As a peacemaker, I respect them and value their feelings. – P6

Listener. Being a listener as one of the teachers’ roles denotes that teachers never judge the students because of their cultures and family backgrounds. Instead, they spend time listening to their different life stories. The participants said:

Usually, I listen to each pupil’s side. I suspend my judgment unless I already know the entire story. – P2

When it comes to cultural indifferences, the first role of the teachers is to become a good listener. I do not judge them, yet I listen to their problems. – P4

If there are indifferences because of cultures, I always listen to both sides of the disagreement. – P7

Guidance Counselor. As guidance counselors, teachers give the students guidance on what to do to stop the cultural indifference in the classroom. Teachers help the students understand the situation and their educational goals and help them in to achieve them. Teachers help the students to solve their problems. The participants explicitly said:

The most common clashes are from the Muslims and Visayan. They tease each other’s dialect. So, I talk to those who are involved and guide them. – P2

As a teacher, I always give the students guidance, especially when there is cultural indifference. I offer them direction in solving their issues and conflicts. – P7

You should use your role as guidance counselor when there are cultural indifferences in the classroom. It is not good to judge them but instead be helpful to them for them to become better individuals. – P8

The roles of the teachers are significant in solving cultural indifference in the classroom. These roles ensure they create a positive learning environment in the class. The participants revealed that these roles allowed them to avoid cultural discrimination and establish a peaceful learning environment.

Avoiding cultural discrimination. Teachers’ roles in solving cultural indifference help the students to avoid cultural discrimination. When teachers advise, give guidance, and resolve problems, they will instill the adverse effects of cultural discrimination in the students’ minds. They said:
My role as an adviser helps me because I can talk to them to avoid cultural discrimination. I advise them to respect individual cultures. – P1

In solving cultural indifference in the classroom, I ensure that I remove the cultural discrimination that usually causes conflict among my students. – P6

It helped me solve cultural indifference because, through this, the students know that they should not disrespect other cultures. – P7

Establishing a peaceful learning environment. Teachers could build a peaceful environment among students after solving cultural indifference. The teachers' role in solving cultural indifference helped them establish a peaceful learning environment whereby conflicts in cultures are not a problem. The participants stated:

If I already reprimand the children who are quarreling, then there is peace in the classroom. – P2

To make the classroom peaceful, I should solve the conflict inside the class so that learning would take place. – P3

The roles helped us, teachers, to make the environment peaceful. If the classroom is peaceful, students learn effectively. – P4

One of my goals in solving cultural indifference is to make the classroom peaceful. If there are quarrels, they cannot concentrate on learning in the class. – P5

My roles as a teacher would help by attaining a peaceful classroom free from any form of quarrel among my students. – P8

Discussion

The responses of the elementary teachers showed that they act as advisers to their students, especially when there are cultural indifferences. Every day, teachers function as advisers by giving suggestions and opinions to maintain a positive learning environment. When cultural indifference happened, teachers tried to advise on what to do, presented their wise views, and let students understand the situation. Cultural indifference is one of the problems of the students in the classroom. Everyone is protecting and displaying their cultural background to be identified as those above other classmates (Yang et al., 2010). The teacher’s role as an adviser is necessary for this phenomenon since the students would look up to them and believe them as teachers. Teachers should suggest possible solutions to stop fighting and quarreling because of culture. Schools then should look for
ways to implement programs promoting the harmonization of the people and improving the school climate (Emmerová & Kohútová, 2017).

The teachers can also act as peacemakers in addressing the cultural indifference in the classroom. As peacemakers, they did not judge their students. They respect their values, feelings, and varied cultures. Teachers set collaborative rules to guide the students on what to do and would also lessen the occurrence of cultural indifference. In some sensitive discussions, mainly on cultural issues, they satisfied each other’s feelings. The role of the teachers as the peacemaker in the classroom is a significant aspect to solve cultural indifference in the school. Teachers should help students understand others’ feelings and respect everyone’s culture (Rychly & Grave, 2010). Their peacemaker’s role enables them to create a positive learning environment.

The teachers act as listeners to their students when there is cultural indifference. Their roles as listeners guide them to know the root of the conflict and lead to give solutions. Teachers understand and listen to their students’ reasons to come up with a good result.

In resolving conflicts among students, teachers should never judge them but should listen to both sides to arrive at a better solution. Listening is the first step in solving cultural indifference among students (Warikoo, 2009). As they listen to the students’ side, they have a chance to weigh in their reasons and provide solutions according to their problem.

The teachers act as guidance counselors when there is cultural indifference. They talk to the students as what the guidance counselors do rather than being a disciplinarian. They always assist the students on what to and help them stay focused on their studying goals. Guidance counselors never judge students; instead, they guide them to discover their skills. Teachers should be guidance counselors to help students reach their goals (Wanda & Warms, 2011). Assisting the students to stay focused in their studies is one of the purposes of the guidance counselors, and teachers must also do the same.

Unlike other studies that highlight relationship-centered teaching classroom (Milner, 2018), being model or social referent for students (Hendrickx et al., 2016), and facilitating dialogues (Parker & Bickmore, 2020) in addressing racial tensions, this study revealed that different roles of teachers such as adviser, peacemaker, listener, and guidance counselor are effective in addressing cultural indifferences in the classroom. Apart from teaching, they are expected to perform those roles to preserve a conducive classroom environment for learning.

The teachers’ roles as advisers, peacemakers, guidance counselors, and listeners help them mediate cultural clashes by avoiding cultural discrimination. Teach-
The Roles of Elementary Teachers in Addressing Cultural Indifferences in the Classroom

...ers could instill in the students the need to avoid cultural discrimination and empower love and unity. They could strengthen their discussions on the fairness of cultures among them. Teachers have a role in teaching the students about cultural discrimination. When there are cases of cultural indifference, they have to explain to both parties the need to flee from it since no culture is above others to prevent them from quarreling again (Thomas & Brown, 2011). Teachers should emphasize that every culture is essential and significant in society.

The teachers want to establish peace learning environment. Hence, they solve cultural indifference in the classroom. In promoting a peaceful learning environment, it is also relevant to nurture the social support that involves a good relationship of the students to their teachers, parents, classmates, best friends, and other people in the school (Mares, Jezek, & Tomasek, 2005). Teachers’ roles as advisers, peacemakers, listeners, and guidance help them achieve a peaceful learning environment. The learning environment is a factor in facilitating learning for the students. The learning environment is a factor in transmitting knowledge to the students. Thus, teachers need to find ways to maintain it peacefully (Sulkowski & Deakin, 2009). The roles of the teachers are significant in order to maintain a peaceful learning environment.

**Conclusion**

Schools are institutions where students could learn, gain knowledge, and develop their functions to become responsible individuals in society. These are also institutions that teach students the values and good manners to become helpful in the community. Teachers ensure that these are met by performing their functions. Teachers perform their tasks by playing advisers, peacemakers, listeners, and guidance counselors. These roles are tied up with a responsibility that helps to solve cultural indifference in the classroom. It helps the teachers to perform their functions by making a conducive learning environment. It also reduces cultural discrimination and establishes a peaceful learning environment. As this research explored the teachers’ roles in preserving harmony in the classroom, future researchers can explore the encountered challenges in promoting harmony among diverse students.
References


Abstract

Within the context of lifelong learning, it is necessary for teachers to improve their competencies, including the competencies in the use of digital media. The paper presents partial results of research carried out within the VEGA 1/0913/15 project on Media Literacy of Young School-Age Children in the Context of Family and School Cooperation, while it also analyses the need to develop digital literacy, which is part of the VEGA 1/0748/20 project on Diagnosing Digital Literacy of Primary School Teachers in the Context of Undergraduate Training and Educational Reality. The empirical research had a diagnostic as well as quantitative and qualitative character. The subject of the research was media education of younger school-age pupils implemented in both formal and informal ways in Slovakia. The research involved 28 schools from all over Slovakia. The paper focuses mainly on the findings obtained from the questionnaires filled out by primary school teachers, interviews conducted with school management and content analysis of school educational programs. It focuses primarily on the interest of teachers in further training in media education.

Key words: media education, teacher, media literacy, digital literacy, Slovakia
Introduction

The trend of getting to know the media world and using associated technologies is expanding among younger and younger children. They were born into a world linked with modern technologies. It is natural for them to use mobile phones, related applications or the Internet. They do not need to be taught how to use them. However, due to a declining in the age when a child is first exposed to media, the opposite problem arises. Are they mature enough or able to use media responsibly and to their benefit? Can they get oriented in the immense amount of information being poured into them which they can critically evaluate? The outlined problems point out the need for the implementation of media education, even in pre-school education. The first contact smartphone, tablet, and digital game trends are changing rapidly. The games that children used to play at the age of 7 - 8 years are now played by 5-year-old children. Therefore, it is essential to develop digital, as well as media and information literacy. The connection between the two is obvious. We are functioning in a digital society where children and young people should, in school and beyond, develop digital skills related to the correct use of digital technologies in education, teamwork, social communication, the development of diverse interests and future professional work. That is why it is so important to educate teachers in the media, whether in university or postgraduate studies, so that they can shape their pupils’ digital competencies (Fallon, 2020).

The media education in Slovakia has been developed in a targeted way since 2008. Although more than 10 years have passed since then, we see the need to educate teachers as well as parents in this area. Insufficient attention is paid to pre-school and younger school age in particular. Many research studies in Slovakia focus primarily on the older age category (Petranová, Vrabec, 2015, Kačinová, Kolčáková, 2013, etc.). For all these reasons, we focused on the category of younger school age. In this paper we present the results of the research we conducted in Slovakia in 2016 - 2017. Also based on the obtained results, we see the need for teachers to go more in depth when educating pupils on the issue, which is also related to digital literacy.

The paper reflects the need for media education, which is also associated with the acquisition of digital literacy as well as information literacy, especially among parents and teachers.

Research Focus

On one hand, media simplifies lots of things and provides instant access to an abundance of information, on the other hand irresponsible use deprives us of
much time and real life experiences. Besides parents, teachers are second most important authority for children, who contribute to the creation and formation of the child’s personality. Every teacher should work on improving their media and digital literacies so that they can develop them in pupils as well. “Although there are new media and literacies in the current constellation, books, reading, and print literacy continue to be of utmost significance. Indeed, in the current information/communication technology environment traditional print literacy takes on increasing importance in the computer-mediated cyberworld as people need to critically scrutinize and scroll tremendous amounts of information, putting new emphasis on developing reading and writing abilities.” (Kellner, Share, 2005, p. 370) Within the context of the current situation, information analysis and the need to develop critical thinking and problem solving skills are even more important.

In Slovakia, we encounter several problems related to the ICT implementation in education. It is primarily a one-sided use of digital media without taking advantage of its true potential, as well as an excessive use, which results in several consequences (related to health effects; pupils relying on Google as the only source of information; etc.). The given reasons indicate the importance of the personality of the teacher and his/her personal contribution to the instruction process. (Karasová, 2014). The use of digital, personalized and interactive devices even by preschool children has increased sharply in recent years, all the more so in the case of older children (Chaudron, 2015; Plowman, Stevensom, Stephen, McPake, 2012). This is also reflected in the use of ICT in education, which is the subject of a number of studies and research from pre-primary education and primary education (e.g. Estyn, 2013; Tay, Lim, Lim, Koh, 2012; Balanskat, 2009; Sarkar, Mohapatra, Sundarakrishnan, 2017; Higgins, 2003; Juszczyk, 2004; Juszczyk & Kim, 2015, 2018; Juszczyk, Karasová, 2017; Círus, 2016, 2017; Kalaš, 2011; Karasová, 2017, 2019; Šupšíková, 2016, Izrael, Karasová, Yang, 2020) to higher education. The research results indicate that in younger school-age children there is a considerable interest in television and the Internet in particular (with priority to PC games, YouTube and social networks).

This is also shown by the research carried out in Slovakia in 2013–2014. The most preferred medium for children of younger school age is television, taking into account that they watch it for two or more hours a day on a normal basis (Šupšíková, 2016). The frequency of children’s contact with digital media is growing and intensified by distance education in the current situation with prevailing online learning. The consequences will become apparent over a longer period of time so it is necessary to study them.
The development of digital literacy is an ongoing process, across all levels of education, not excluding adult education. ICT skills are nowadays related to the use of the media, especially the Internet. Therefore, the acquisition of digital literacy is also intertwined with the acquisition of media and information literacies. For all these reasons, it is therefore necessary for teachers to develop competencies in these areas. Thanks to this, we can shape pupils more in the field of prevention against the negative phenomena associated with the use of digital media and teach them to behave responsibly and safely.

**Methodology of Research**

**General Background of Research**

Empirical research had a diagnostic as well as quantitative and qualitative character. The subject of the research was media education in younger school-age pupils implemented in both formal and informal ways in Slovakia and the level of media literacy of primary school pupils, cooperation between school (teachers) and family in the area of media education and shaping good habits of younger school-age children. The paper focuses primarily on presenting the research results from the teachers’ perspectives and the implementation of media education in the first stage of primary school.

The cognitive goals of the research also included the following goals:

- To find out the current state of the implementation of media education at the primary stage of primary schools in Slovakia,
- To find out the current state in the area of readiness of primary education teachers when implementing media education in primary education,
- To analyse the views of primary education teachers of the need for media education at primary schools.

The beginning point for our research were the following research questions:

RQ1: What are the attitudes of primary education teachers towards media education at primary school?

RQ2: Do the teachers’ attitudes towards the need for media education in primary education depend on the size of the locality in which they work?

RQ3: What is the interest of primary education teachers in training in media education?

RQ4: Do primary education teachers use elements of media education in class?
Sample of Research
A number of 28 primary schools were selected for the research. When selecting schools, we took into account the size of the localities in which the schools were located, based on the following categories: 9 schools in the category up to 4,999 inhabitants, 11 schools in the category from 5,000 to 99,999 inhabitants, and 8 schools in big cities over 100,000 inhabitants. Among the selected schools were: 9 church schools, 2 private schools and 17 state schools.

The research involved 151 primary education teachers (5 men and 146 women), 27 head teachers or deputy head teachers. A total of 48 focus group interviews were conducted and in each of the target groups there were 10 third-year primary school pupils (480 pupils). The research also involved 498 parents (92 men and 406 women).

Instrument and Procedures
The method of diagnostic research was used as the basic method in empirical research. A questionnaire addressed to teachers and parents as well as categorized interviews (i.e. such interviews where questionnaires contain the same questions in the same unaltered order to be asked by the same respondent from the same professional or social group) with school principals or representatives were used. A focus group interview was conducted with pupils, in which the moderators were members of the VEGA research team (these were teachers with high qualifications in working with children), which determined the qualitative aspect of our research.

Data Analysis
For the quantitative analysis of the results, selected statistical procedures were used to process the data from the questionnaire. The distribution of relative frequencies is presented in the form of contingency graphs. To determine the dependence or independence of selected variables, Pearson’s Chi-square test of independence was used.

Results of Research
We wanted to find out the attitudes of primary education teachers towards media education at primary schools. From the following graph (Figure 1) we can conclude that more than 72% of respondents, who are primary education teachers consider media education to be a necessary part of primary school education.
Based on the analysis of qualitative data, it was surprising for us to find that the implementation of media education in schools significantly lags behind the declared need for media education. It has been shown that teachers implement media education in a very diverse intensity and scope. We also met with teachers who priorly perceive media education as the use of computers and other devices in education. However, more teachers, on the other hand, implement media education intuitively, based on experience and the need to influence pupils in the area of creating values. This was quite often connected with the topics through which teachers drew attention to selected problems associated with uncritical use of the media (topics related to personal data protection, cyberbullying, disinfection, etc.).

We wanted to find out whether the teacher’s attitudes towards the need for media education in primary education is influenced by the size of the locality in which they work. In the questionnaire, we monitored the size of the town or city where the respondent works as a teacher. We divided localities into three categories based on population, as mentioned above (1: up to 4,999 inhabitants, 2: 5,000-99,999, 3: more than 100,000).

From the graph (Figure 2) constructed based on our research sample, we can state that the need for media education grows with the size of the locality where the teacher works.
At a significance level of \( p < 0.05 \), we verified the significance of this difference using the Chi-square test. The \( p \)-value for this test is 0.039, which confirms the significance of the observed difference.

We can state that the teacher’s attitudes towards the need for media education in primary education is influenced by the size of the locality where they work: teachers from larger cities are more likely to report the need for media education.

What is the interest of primary education teachers in training in media education? Approximately 53% of respondents were interested in training in media education. More detailed results can be seen in Graph 3.

According to our expectations, the interest of teachers in training was higher among the respondents with a positive attitude towards media education (62.96%). In the case of the teachers with a negative attitude, it was less than 28%. The significance of the observed differences was also confirmed by the \( p \)-value of the Chi-square test (test value \( X = 0.000098 \), according to \( p < 0.05 \)).

Up to 62.3% of the sample of the teachers we studied use self-education in the field of media education. However, it is not clearly guaranteed whether they come into contact with relevant information and resources. Therefore, we consider training carried out by experts to be one of the solutions. Another solution can also be educational portals for teachers. There are already several such portals in Slovakia (Zodpovedne.sk, www.medialnavychova.sk, www.detinanete.sk, etc.) containing materials also intended for teachers. However, they are primarily aimed...
Interest of Primary Education Teachers in Media Education

at a wider audience, they are mainly divided into categories for parents, teachers and children. Teachers most often stated that they lacked methodological manuals that would help them to implement media education better in practice.

We also wanted to know if primary education teachers use elements of media education in class. It is clear from the following graph that the use of elements of media education is dominant not only for teachers who declare the need for media

![Figure 3](image3.png)

**Figure 3.** Interest of primary education teachers in media education training

![Figure 4](image4.png)

**Figure 4.** The use of media education elements based on teachers’ attitudes towards media education
education in primary education, but also for those who tend to incline towards the opposing view.

The fact that the use of elements of media education is not influenced by teacher's attitudes towards the need for media education in primary education was also verified at the level of significance p < 0.05 with the Chi-square test (p-value = 0.54).

The following graph (Figure 5) indicates that the use of elements of media education is not affected by the size of the locality. This indication was also confirmed by the p-value of the Chi-square test (0.122) at the level of significance p < 0.05. We can therefore state that the use of elements of media education in class is not affected by the size of the locality in which the school is located.

![Figure 5. Use of media education elements according to the size of the locality](image)

Most often the teachers said that they worked with print media (books, children's magazines) and that they were equipped and worked with digital media, especially computers, or interactive whiteboards. It is interesting that teachers involved work with the media more often than using discussion and practical activities aimed at developing critical thinking in media environments. As stated above, the use of digital media by teachers is related to misunderstanding of the content and purpose of media education. In interviews with teachers, we observed that some considered it natural to warn pupils of the dangers concerning their contact with the media. Teachers are aware of the risks associated with the excessive use of digital media and they monitor changes in pupils’ behaviour during their practice.
Within this context, it is also confirmed by the results of a research project carried out by the International Media Literacy Centre IMEC in 2011/2012. The results show that we do not have enough qualified teachers to teach media education in Slovakia (Kačinová, Kolčáková, 2013). With regard to a year of research, the situation is constantly progressing, therefore we want to update the data within the project that we are implementing.

From interviews with school management, we found out that the projects focused on the implementation of media education in primary education were implemented only to a minimum extent. More attention is mainly paid to media education at the second stage of primary school, or it is teachers’ own initiative to spend some time with this issue within the subject of informatics. Occasionally there will be a possibility within the after school activities/clubs. The given facts confirm that it mainly depends on the specific teacher as to how much time they devote to implementation of media education at the first stage of primary school. The interview also indicates a problem that teachers are not completely certain what can be considered as media education. One of the reasons is the rapid informatization of education, which has resulted in excessive use of digital technologies in the educational process and teachers do not perceive the difference between media and digital literacy, or tend to prefer the concept of using ICT. We met more often with the attitude of teachers who implement media education by using an interactive whiteboard. Failure to understand the concepts, content as well as the objectives of the subject of media education results in the use of computers and other devices in class, but not in education for responsible and safe use of the media. None of the schools we studied focuses primarily on media education. The interview as well as our analysis of school curricula show that schools focus mainly on traffic, regional and environmental educations. Several schools enhanced the classes of English or computer science education with increased time allocations. We appreciate the efforts of some schools to invite a psychologist to the plenary parent-teacher meetings, who dealt specifically with the issue of the media’s influence on children’s behaviour and cyberbullying. However, this was mostly occasional in our research sample, because parents did not show enough interest, as reported by the management.

**Discussion**

The research findings show that teachers are interested in education in the given problematics, they lack methodological manuals in particular. The need for imple-
mentation of media education elements is growing with the size of the locality where teachers work. More than half of teachers are interested in training in this area. The use of media education elements is dominant not only among teachers who declare the need for media education in primary education, but also among those who tend to incline towards the opposing view. The use of elements of media education is not affected by the size of the school locality (Figure 5).

The teachers’ attitudes towards and their interest in media education are related to its actual implementation. If a teacher does not show sufficient interest, media education is implemented to a minimum level.

The current situation in the world has caused many teachers to shift to necessary (forced) online teaching, the consequences of which need to be further studied. Even due to the current situation, teachers deepened their digital competencies. Online teaching has brought several possibilities for its implementation. Some teachers prefer offline methods in particular. Based on our findings, a certain degree of insufficient knowledge base related to media literacy and its development is shown. The idea of some teachers about media education is limited to the use of computers and other devices in class, which eliminates the possibility of developing pupils’ critical and analytical thinking (Figure 1).

From the focus group interviews conducted with the pupils, we found that pupils prefer watching television and activities related to the use of the Internet. A significant number of children reported watching inappropriate series and programs on television (series, crime series, reality shows), yet the popularity of fairy tale films and animated films persists. In the case of the Internet, we observe mainly three areas of interest in children. These are mainly computer games (online and offline), YouTube and the related watching of YouTubers, and the use of social networks. The interest in PC games is mainly among first and second-year primary school pupils. Third and fourth-year primary school pupils prefer social media related networks for messaging and YouTube. In addition to these preferences, school children of all ages use the Internet to search for information related to school projects. It can be stated that there has been a shift in the interest of children today in favour of the Internet and social networks, which is also partly indicated based on the results of our research. Children are not only interested in computer games, but also in YouTubers and social networks, which are more attractive phenomena. Due to the above facts, we also consider it necessary to support the development of teachers’ competencies related to the use of digital media.
Conclusions

The implemented research shows the need for education in the field of media and related digital competencies. Nowadays, pupils have no problem using technology or any new means preferably displaying digital content. The problem has been shown at the level of critical and analytical thinking skills. We also see possible connections between the insufficient development of communication competencies and, above all, problems with reading comprehension. The possible consequences are evident from the amount of video and audio-visual content which is used more often than textual information offered mainly through traditional media, especially books. For all these reasons, there is a need to develop classic, not just digital skills. That is why we consider it necessary to develop media and digital competencies with regard to the priority need to improve classic skills (we mean the development of social and communication skills in particular, as well as reading literacy and fine motor skills, etc.).

At present, it is also necessary to cope with the overload resulting from almost constant contact with the media. This is related to the pandemic situation in which a large number of people and also teachers work from home and thus are in almost constant contact with the media, which is caused in several time intervals also in Slovakia. The consequences can already be observed not only in adults, but especially in children and adolescents.

People feel exhausted and overwhelmed, which is partly related to the fact that all activities are connected to their homes. The problem is that all social roles (such as a colleague, husband, family member, etc.) suddenly collapsed and narrowed down into a household in front of the screen, making us more susceptible to emotional fluctuations. At the same time, in the interaction in front of the camera we tend to focus and work on networking more intensively, we have to create much more non-verbal stimuli. In addition, technologies also bring problems associated with delayed response, signal or connection strength, and problems are also associated with the ever-present profound digital differences in society (Deuze, 2020). This is also reflected in the work of the teacher, especially in primary education. Keeping pupils' attention via a webcam for about 30 minutes and then connecting to another subject is challenging not only for lesson planning, but also for concentration and creativity. As a result of the pandemic situation, we see that differences in the use of technology in schools are even more pronounced, and we are also aware of the overload that is also currently visible in teachers. It is very difficult to fully implement many of the skills that pupils have to acquire especially in the first years of primary school by means of digital media. The time
children spend on screens also multiplies. Further studies may show the extent to which online education and the reduction of real peer contacts have influenced children and affected their behaviour. This fact also shows the need for acquisition of media and digital competencies in teachers. We do not mean only the control of programs and communication channels, above all it is important to help children acquire classic skills and learn to think critically, as well as to use digital media in a reasonable way so that they are not lost in a digital world full of diverse information.

Our findings, as well as the current situation, show the interconnectedness and close link between digital and media literacies, which is reflected in the ongoing VEGA 1/0748/20 research project on *Diagnosing Digital Literacy of Primary School Teachers in the Context of Undergraduate Training and Educational Reality*.

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Interest of Primary Education Teachers in Media Education

mladšieho školského veku (Analysis of the current state of media education in children of younger school age). Ružomberok: Verbum.


Special Pedagogy
Abstract

Social and political transformations inevitably cause changes in people’s mindsets and result in conversion of a national educational system. Ukraine, as a post soviet country, is still trying to put away its totalitarian past and adopt the latest human rights policies that have been successfully functioning in the “developed” world for several decades. This study evaluates the quality of inclusive education in Ukraine, specifically focusing on services provided to families of students with disabilities whose views and opinions are often neglected by governmental officials responsible for creating inclusive environments.

Key words: inclusive education, students with disabilities, parents, opinions

Introduction

Research in the field of inclusive education in Ukraine, especially, of those aspects that deal with its methodology, practical implementation and evaluation of results, is now, doubtless, very acute. Scientists, whose professional interests lie in the field of pedagogical studies, pay their attention to the issues of engaging children with disabilities into mainstream education (Gudonis, V. & Klopota, Y., 2017), (Skrypnyk T., Martynchuk O., Klopota O., 2020). Governmental and non-governmental agencies, as well as public sector activists on all levels express their
concerns about effectiveness of psychological and pedagogical work, intended to make Ukrainian society more inclusive and educational settings ready to meet students’ special needs. Although these activities are, generally, very positive, they often lack a profound systematic approach, and they are almost never based on a feedback from the main beneficiaries of educational inclusion – families who have children with disabilities (Romanova, 2017).

**Problem of Research**

Most often, parents of students with disabilities (SD), or persons who substitute them, have to enforce opening of inclusive classes and groups at schools and kindergartens, to stimulate the state machine of social services, too slow in its actions, to publicly criticize mechanisms of implementing inclusive education developed by governmental officials, and almost never take part in decision-making nor have an opportunity to meaningfully participate in policy-making in order to create a holistic approach to solve problems these people face on day-to-day basis (Duda, 2011). This, partly, is due to the fact that parents of children with disabilities in Ukraine are not viewed as a powerful self-advocacy group, as the main stakeholders of inclusive education, because they are still, analogous to the Soviet Union practice, perceived as recipients but not partners in social, medical, educational and other spheres (Ticha, R. & O. Telna, 2020). On the other hand, the modern, human rights paradigm of public political sector development requires equal access and opportunities for all and everyone to participate in building an inclusive environment that is secured by international and domestic legislation functioning in Ukraine (CRPD Concluding Observation Ukraine, 2015).

**Research Focus**

Careful analysis of the appropriate academic research gives evidence to emphasize the importance of deep involvement of families that have children with DISABILITIES into the process of solving problems of inclusive education at all levels (Turnbull, A., Turnbull, R., Erwin, E. J., Soodak, L. C., & Shogren, K. A., 2011). These authors, above all, provide evidence of the major expertise of parents in the field of their children's interests, needs and abilities, and, therefore, are of a great help when it is necessary to find the ways of engaging SD into mainstream education.

Other problems of involving parents of SD into collective decision-making in the sphere of creating inclusive environments, creating collaboration networks, developing inclusive strategies and practices have been discussed in the works of such researchers as Blue-Banning, M., Summers, J. A., Frankland, H. C., Lord
Nelson, L., & Begle, G. (2004), Ryan, T. G. (2009), Cobigo, V., Ouellette-Kuntz, H., Lysaght, R., & Martin, L. (2012), Day, C. G. (2016) and many others. All these authors prove the fact that considering parents’ opinions and expectations can lead to substantial increase in academic progress of SD and enhance the quality of inclusive education on a large scale.

Numerous academic studies also suggest that one of the biggest advantages of inclusive education is close social interaction of SD and their non-disabled peers which provokes obtaining experience of human diversity, tolerant behaviors, building friendships, as well as obtaining communication skills, helping a person to be useful for and independent in the community (Cobigo, V., Ouellette-Kuntz, H., Lysaght, R., & Martin, L., 2012). This statement has been asserted and proved by widely cited and highly respected in Ukraine and many post Soviet countries scholar, L. Vygotsky, who emphasized the crucial role of community in personal development of children with disabilities (Gindis, 2003).

Moreover, the latest developments in the deinstitutionalization reform, introduced by the Ukrainian government in 2017 (Decree of the Cabinet of Ministers of Ukraine, 2017), show that educational officials and some parents of SD are not yet quite ready to accept the human rights paradigm and use the biosocial model of disability in providing educational services to persons with physical, sensory or any other impairment (Kryvachuk, 2018). That is why our main focus in this study was on getting truthful and sincere response from parents of SD, reflecting their attitudes towards inclusive education.

**Methodology of Research**

**General Background of Research**

The purpose of this study was to define the attitudes of parents of SD towards inclusive education in Ukraine by means of registering and exploring their opinions about the quality of educational services that their children receive.

Therefore, the survey was intended to get answers to two main research questions:

1. What are parents’ opinions about the quality of inclusive education in Ukraine;
2. Whether parents of SD would like to meaningfully participate in making Ukrainian schools more inclusive.
Sample of Research

800 people from 16 regions of Ukraine took part in the research (see Table 1). Those were parents of children with DISABILITIES aged from 2 to 15 years and attending either inclusive educational settings (63.75%), or special educational settings (25%), or learning at home (11.25%). This last category was constituted purely by children with severe forms of disabilities (mainly, disorders of autistic spectrum with hard speech, emotional and intellectual disorders) and the necessity to keep a strict diet. The group of students attending special educational settings was constituted by those with severe multiple disabilities (a child with sight and hearing loss on a wheelchair, some children with severe intellectual disabilities and emotional disorders.).

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<th>№</th>
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Instrument and Procedures

In order to reach our goals, we have planned and conducted the anonymous internet questionnaire for parents of SD, in which our objective was to understand the level of satisfaction of respondents with the quality of educational services that their children receive, to see their expectations regarding inclusive education and willingness to participate in active self-advocacy campaigns.
Research was undertaken during the 2019, as the internet questionnaire was available for filling in during eight months in many related groups on popular social networks and open-access online resources where parents of SD could easily find it.

Methods, used in the study, include qualitative research methods of comparing expert evaluations, methods of mathematical and statistical data analysis.

**Data Analysis**

One important factor, indicating the level of inclusion of an educational environment, is quality and intensity of interpersonal communication and friendships among students with and without disabilities (Ferrel, 2012). Therefore, first of all, we wanted to know what our respondents thought about their children's participation in social life of the school / community, about their interpersonal communication and relationships with classmates and other peers.

The first question of the questionnaire was “To what extent is your child engaged in social life of the school / community? (E.g. has friends, participates in afterschool activities / social events, just is there with peers, etc.)”, and answers, given by parents of SD, could be classified as follows:

- Has friends and participates in social events – 27.5% (mainly, students with partial sight loss or learning difficulties, attending inclusive schools, and all students, learning at special schools);
- Eagerly participates in afterschool activities and social events, but has no friends – 22.5% (all these students attend inclusive schools);
- Is hardly socializing, just is there with peers, taking no meaningful participation, “sometimes talks to other kids but not often” – 45% (all, who learn at home, plus some students of inclusive schools);
- Makes almost no social contacts, any attempt of communication with peers results in conflicts – 5% (mainly, students with autistic spectrum disorders).

Those responses show that in most cases SD are hardly engaged into social interaction with their non-disabled peers, have no friends at all or feel lack of meaningful interpersonal communication with other children of their age. Fully satisfied with quality and intensity of their children's social contacts and friendships are only those parents, whose kids either attend a special school, or have a minor disability. This gives us evidence to claim that teachers and other professionals, who work in the field of inclusive education, do not pay enough attention to the problem of negative attitudes towards people with disabilities, still widely spread in the Ukrainian society (Duda, 2011) and should take more decisive steps in fighting with prejudice and stereotypes, making educational
environments inclusive really but not formally, in order to fulfill the need of SD in meaningful social interaction.

Secondly, we wanted to know what parents of SD in Ukraine expect from inclusive education. That was the focus of the next question: “What do you expect from inclusive education?” Respondents were encouraged to express their opinions freely, and often gave more than one answer.

Having analyzed answers to the second question, we have noticed that parents of SD in Ukraine anticipate that inclusive education will provide:

- understanding and inclusion of “an exceptional child” – 42.5%;
- better training for teachers and their assistants – 22.5%;
- “informing society” about disability related issues – 12.5%;
- “chances to learn, not just be there in the same school with others” – 12.5%;
- an opportunity to get a profession – 1.25%;
- “better health to a kid” – 1.25%;
- “I don’t have any expectations” – 7.5%.

The above cited answers give us evidence to claim that the majority of respondents had expressed a clear expectation for inclusive schools to provide social (not just physical) inclusion of SD, understanding and satisfying their special educational needs, increasing the quality of teaching, as well as having better material and human resources, paying more attention to personal development of SD in order to help them gain social and professional skills needed for successful living.

It is worth mentioning though, that only a very small part of respondents (3.75%) expressed full satisfaction with the present state of inclusive education in Ukraine, while a considerable number of respondents had shown lack of a clear view of the topic, expecting that inclusive education should give “better health” to their child (1.25%) or having no expectations at all (7.5%) which may be caused either by misunderstanding of the conception of inclusive education, or by a generally indifferent attitude to the issue.

Evaluating the quality of educational services is hardly possible without taking into account personal experience of respondents (Friend, M., & L. Cook, 2004), therefore, in order to monitor the effectiveness of governmental policies, that had being implemented into the Ukrainian educational system during the last five years, we asked parents of SD to tell us about achievements and advantages of inclusive education they have experienced in the recent time.

Respondents could express any thoughts on the topic, giving more than one answer, and their opinions could be classified as follows:

- some progress – 27.5%;
- minimal achievements (“inclusion only exists on paper”) – 25.3%;
• substantial progress – 18.75%;
• some positive change in people's awareness – 8.75%;
• positive changes in legislation - 8.75%;
• individual cases of successful inclusion – 8.75%;
• minimal achievements in rural areas and more progress in big cities – 6.25%;
• everybody talks about inclusion – 5%;
• opening of the first inclusive schools in small towns – 5%;
• almost no achievements in comparison with the EU and USA – 2.5%;
• no answer – 2.5%.

These data show a wide range of opinions, views and experiences, expressed by respondents, most of whom had noted positive changes in the Ukrainian educational system, mentioning opening of inclusive schools in small towns, positive changes in legislation and people's awareness, individual cases of successful inclusion etc. Even those parents of SD, who had complained with the minimal progress, achieved by the Ukrainian inclusive education, were comparing it to the EU and USA educational systems, which means that they know the history of human rights movement and the present state of inclusive education in the “developed” countries.

On the other hand, a considerable part of respondents had expressed more pessimistic opinions, stating that Ukrainian educational settings are inclusive “on paper” only with almost no achievements in rural areas. More precise analysis of the answers, given by parents of this group, has shown that almost all of them had children with severe or complex disabilities, either attending a special (boarding) school, or learning at home, or having no friends and often facing misunderstanding or even oppression in a local (inclusive) school.

Researchers, such as Begle, G., Blue-Banning, M., Day, C.G., Ferrel, J., Francis, G.L., Frankland, H.C., Gross, J.M., Haines, S.J., Summers, J.A., Turnbull, A.P. and many others, have proved the importance of strong collaboration between families of SD and educational professionals which is the necessary ground for successful team work at school and creation of truly inclusive environment. That is why our last, but not least, aim in this research was to define whether parents of SD feel ready to actively participate in self-advocacy work, intended to make Ukrainian educational system more inclusive and disability friendly. Therefore, we asked respondents to answer the question: “Do you personally feel ready to foster inclusion in Ukraine? If so, in what way?”

The answers received were as follows:
• Yes. I will do everything I can – 27.5%;
• Yes. I feel ready to share my knowledge and experience with those who might need them – 22.5%;
• Yes. I have been doing it for some time already – 20%;
• Yes, but I don’t know what to do – 13.75%;
• I feel ready to actively participate in everything that helps my child to learn successfully – 3.75%;
• No. I don’t feel ready to do that. “That should be done by professionals who are paid for that”.
• “I have neither time, no desire to do that.” – 12.5%.

Those opinions show that the majority of respondents feel ready to actively participate in self-advocacy work because they either “have been doing it for some time already” (20%), or express a clear will to be engaged in such work (50%), or would like to but hardly know what to do (13.75%). However, a considerable part of respondents pointed out that they only feel ready to actively participate in tackling those problems that create obstacles for their child’s inclusion (3.75%) or have no desire to be involved in self-advocacy work at all (12.5%).

**Results of Research**

Correlative analysis of the answers given by parents of SD, who participated in our study, has shown that about 15% of respondents (mainly, those, whose children learn at home or attend a special educational setting) expressed clearly negative attitudes towards inclusive education in Ukraine, claiming that “Inclusion is not for every child”, that it is the responsibility of governmental bodies to provide all students with educational services of a high standard, that inclusive education in Ukraine has reached “the minimal achievement”. However, almost 40% of respondents pointed out rather positive and optimistic perspectives of inclusive education, they clearly understand its meaning and know all the details of the required proceedings, can freely define weaknesses and strengths of the Ukrainian inclusive educational system, and feel a strong desire to actively participate in self-advocacy campaigns intended to make educational settings in the country more inclusive; all the others (slightly less than a half of respondents) seem to be interested in discussing the problems of inclusive education and feel ready to participate in decision and policy-making only as far as it is necessary for their child’s involvement. These parents complain about poor legislation, bad financial provision and lack of support and information in inclusive education but hardly try to find the ways of tackling the problems they face.
Conclusions

Summing up: our research has given the evidence to state that parents of SD in Ukraine express generally positive attitudes towards inclusive education, putting their own child’s needs and interests on the frontline, and expecting that society would understand and respect their family, that other students would like to communicate and make friends with their kid, that educational services would be more accessible and inclusive. Although most respondents complain about poor financing, rather low level of teachers’ competence, and lack of appropriate informational and material resources in inclusive education, they, in most cases, appear to be ready to personally participate in any team work intended to foster educational inclusion, in general, and of their own child, in particular, however, often hardly knowing what to do, when and how. Almost all parents of SD, who took part in our study, have claimed that the Ukrainian society is badly informed about human rights of people with disabilities and is mostly not ready to understand and respect a child with disability on the basis of equal participation. Although a small part of respondents expressed a clearly negative attitude toward inclusive education, qualitative and quantitative data analysis has shown that most parents of SD acknowledge “some success”, remarking, however, poor provisions for inclusive education in many small towns and villages, stating that “in big cities schools are more inclusive”.

These results, in our opinion, not only demonstrate the attitudes of parents of SD toward inclusive education in Ukraine, but also show a great necessity to work out some effective strategies of close collaboration, intended to reinforce person-to-person talks and collective decision and policy-making and taking into account thoughts and opinions of all participants. Regular evaluation of the effectiveness of inclusive educational practices is also needed, as honest feedback from the main stakeholders can improve the quality of service provision.

It is also worth mentioning that this study does not cover all the aspect of inclusive education in Ukraine and its perception by parents of SD, hence, its results should not be seen as fully objective or those that reflect the current situation, as now, when most educational settings in Ukraine have switched onto online teaching due to the COVID-19 pandemic, there is a need in doing the similar research in future to monitor changes in the respondents’ opinions.
References


Differences in Communication Skills among Elementary Students with Mild Intellectual Disabilities after Using Easy-to-Read Texts

DOI: 10.15804/tner.2021.64.2.19

Abstract
The purpose of the study was to analyse differences in speech, language and communication skills between students with mild intellectual disabilities using a narrative text written in easy-to-read text (experimental group), and students with mild intellectual disabilities using a book containing the same content but written in ordinary text (control group). The results indicate that students with mild intellectual disabilities who listen to the easy-to-read text exhibit superior communication skills in individual conversations with the teacher. Significant differences occur in all three measured variables. The research is important contribution in understanding of benefits of easy-to-read texts.

Key words: easy-to-read, communication, language, methods

Introduction
The communication skills of students with mild intellectual disabilities are closely related to intellectual function, and so it is known that students with intellectual or mental disabilities are deficient in language development, communication, speech and academic skills related to reading (Foreman, 2009, Dodd, 2013). These students often communicate in a limited way because they have difficulties in understanding language. Relative to their peers whose development may be regarded as typical, they are more likely to exhibit delays in language develop-
Differences in Communication Skills among Elementary Students

The development of communication skills among students with mild intellectual disabilities is regularly delayed so that children start to speak at age three to six or even later. Their expressive language is more affected than their receptive abilities, their expressive vocabulary is limited and relatively simple, and they may only produce two- and three-word sentences after the age of nine. The discrepancy between mental and chronological age can be manifested in diverse ways, depending on the individual's degree of intellectual disability (Horn, 2012; Marrus and Hall, 2017). Speech disorders are related to difficulties in physically reproducing speech, while language disorders include difficulties in understanding and using language as a symbolic means of communication in either written or spoken form. The use of language can be illogical, phonetically impaired, highly concrete and simplistic, and may have a specific rhythm and small vocabulary. It may develop in expected phases, but also with considerable delay and in specific forms (Dodd, 2005; Perovic, 2006).

Easy-to-read texts represent one of the most common strategies used by educators to improve these students' reading comprehension performance, from elementary to adult education (Fajardo et al., 2014, 212). However, the design and selection of adaptations for easy-to-read texts are not the same in every language and are often contingent on the age of the readers as well as the language context. General guidelines from international organisations exist, such as Guidelines for easy-to-read materials by the International Federation of Library Associations and Institutions (IFLA, 2010) or European standards for making information easy to read and to understand in English (2009). The same guidelines are translated in several EU languages.

Language adaptations enable easier understanding and pronunciation of text. Thus, it is recommended that the concrete naming of objects be used, difficult or new words be explained alongside examples from everyday life, sentences be short versions and positive, and abbreviations, passive voice, synonyms, foreign words, large numbers and other mathematical expressions such as percentages and special symbols be excluded. Form adaptations comprise good structure, information that is easy to understand and follow, clear and highly legible fonts (sans-serif fonts such as Arial and Tahoma) in size 14 with 1.5 spacing between lines, space between paragraphs, left-aligned text, a maximum of six words on one line and avoid excessive text on each page. Where the text includes images (illustrations in our case), they should be concrete, age-appropriate, simple, positioned beside the text to which they relate, visually appealing, and if possible featuring a consistent
style throughout the entire document (Fajardo et al., 2013; Haramija and Batič, 2016; IFLA; 2010).

If the easy-to-read text is prepared according to these standards and is tested with the intended population, it can improve students’ engagement in reading and interactions between the text and others (Haramija and Batič, 2016; Karemann et al., 2007; Buell et al., 2020). Easy-to-read texts constitute a method that enables students with intellectual disabilities to independently engage in reading and to understand the reading material. However, we are unable to precisely define which elements or collection of elements in easy-to-read texts facilitate reading comprehension (Karemann et al., 2007).

**Research Focus**

The purpose of this study is thus to analyse differences in communication skills between students with mild intellectual disabilities using a narrative text (a children’s book) written in easy-to-read text, and students with mild intellectual disabilities using a book containing the same content but written in ordinary text. Our research questions are: a) do the students who listen to the easy-to-read text exhibit superior communication skills in individual conversations with the teacher following the reading than do students listening to the ordinary text, and b) which differences in measured variables among these two groups are most significant?

**Methodology of Research**

**Sample of Research**

The participants comprised 10 students (four girls and six boys) from an elementary special education school in a 5th grade class and 10 years of age. Students were divided into experimental (EG) and control group (CG), each of which included five students (two girls and three boys). All students had been diagnosed with a mild intellectual disability and language-speech disability at the beginning of their elementary education. None of the students had been diagnosed with an additional disability such as Down syndrome, autism or attention-deficit hyperactivity disorder (ADHD). Given that all of the students attended the same special education elementary school in Slovenia, they received an equivalent education during the school year.

**Instrument**

The instrument was designed for the purpose of the study. We based our instrument on several other instruments, which included variables pertaining to
communication skills: the ECPE Speaking Rating Scale, which measures speech production, collaboration in communication situations and understanding (Michigan Language Assessment, 2014); the ICAO Language Proficiency Rating Scale, which measures pronunciation, sentence structure, vocabulary, speech fluency and communication interactions (The ICAO Holistic Descriptors & Language Proficiency Rating Scale, 2015); the NCA Conversational Skills Rating Scale (Spitzberg and Adams, 1995), which measures speech and language; and the PCSD Conversational Effectiveness Profile, which measures social interactions, social communication and social emotional interactions (Conversational effectiveness profile, 2018).

The variables in our scale were designed to measure three dimensions: a) speech, b) language and c) communication. The variables were assessed on a five-item Likert scale, according to which: 1) the skill was never expressed by the student during the conversation; 2) the skill was rarely expressed; 3) the skill was sometimes expressed; 4) the skill was very often expressed; 5) the skill was always expressed. We named it the Speech, Language and Communication Skills (SLCS) Scale (Volčanjk, 2018, 36). The speech dimension includes five variables (α=.79). The language dimension includes four variables (α =.91). The communication dimension includes five variables (α=.77).

Data collection and Analysis
Data were collected following four reading sessions with the experimental and control groups. The four reading sessions were undertaken in a 14-day period. The experimental group used the book in easy-to-read text and the control group used the book with the same content in ordinary text. The content of the book explores differences among children and is appropriate to the age of the students in the study. The book by N. Volčanjk (2017) is entitled I + You + Him = Us. Why bullying? and includes seven chapters. None of the students had read the text before the study. The author (who was also the teacher in this study) had already adapted the book from ordinary text into easy-to-read text following her professional training in this subject and tested the latter with the students during the reading sessions.

The teacher read the book to both groups and following each reading conducted an individual conversation (interview) with each student about the story. During each interview, the teacher collected data using the SLCS scale. Each student was assessed four times, after each reading session. The teacher also assessed children's understanding of the content of each chapter according to the scale; although these data are not presented in this paper, they did complement the results on the SLCS scale.
In order to analyse differences between the experimental and control groups, we used the t-test for independent samples based on the average result of each student on the SLCS scale.

**Results of Research**

In this section we present the results of the t-test for speech, language, and communication skills of students in the experimental and control groups.

**Table 1. Differences between experimental and control groups regarding speech**

<table>
<thead>
<tr>
<th>Variables - speech</th>
<th>Group</th>
<th>Levene test</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Student speaks about the text independently and fluently.</td>
<td>EG</td>
<td>3.40</td>
<td>0.23</td>
</tr>
<tr>
<td></td>
<td>CG</td>
<td>2.76</td>
<td>0.07</td>
</tr>
<tr>
<td>Student pronounces new words from the text fluently.</td>
<td>EG</td>
<td>3.75</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>CG</td>
<td>1.70</td>
<td>0.20</td>
</tr>
<tr>
<td>Student easily responds to questions related to the text.</td>
<td>EG</td>
<td>4.05</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>CG</td>
<td>2.70</td>
<td>0.22</td>
</tr>
<tr>
<td>Speech skills of the students indicate that he/she understands the text.</td>
<td>EG</td>
<td>4.35</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>CG</td>
<td>2.15</td>
<td>0.32</td>
</tr>
<tr>
<td>Student speaks about the text in a way that is understandable to the teacher.</td>
<td>EG</td>
<td>3.35</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>CG</td>
<td>3.00</td>
<td>0.14</td>
</tr>
</tbody>
</table>

Note: EG – experimental group, CG – control group

The results of the Levene test reveal that the assumption of homogeneity of variances was met. Statistically significant differences between groups can be seen in fluent and independent speech \((t(8) = 2.63; p = 0.03)\), fluent pronunciation of new words from the text \((t(8) = 7.36; p < 0.000)\), students’ responses to questions from the text \((t(8) = 5.46; p = 0.001)\), and in speech skills, indicating that the students understood the text \((t(8) = 5.91; p < 0.000)\).

Results regarding the mean differences indicate that the greatest differences between groups were in speech skills, intimating that students understood the text \((\text{EG } M = 4.25; \text{SD } = 0.19; \text{CG } M = 2.15; \text{SD } = 0.32)\), and in the fluent pronunciation...
of new words from the text (EG M = 3.75; SD = 0.19; CG M = 1.70; SD = 0.20). We can thus conclude that easy-to-read text is able to support improvements in the cognitive domain (understanding of the text) and in speech disorders, e.g. fluent pronunciation.

### Table 2. Differences between experimental and control groups regarding language

<table>
<thead>
<tr>
<th>Variables - language</th>
<th>Group</th>
<th>Levene test</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Student uses vocabulary from the text during the conversation.</td>
<td>EG</td>
<td>3.75</td>
<td>0.81</td>
</tr>
<tr>
<td></td>
<td>CG</td>
<td>1.30</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Student uses appropriate word order in his/her sentences.</td>
<td>EG</td>
<td>3.33</td>
<td>0.30</td>
</tr>
<tr>
<td></td>
<td>CG</td>
<td>3.00</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Student understands the words we use in conversation.</td>
<td>EG</td>
<td>4.00</td>
<td>0.59</td>
</tr>
<tr>
<td></td>
<td>CG</td>
<td>1.70</td>
<td>0.27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Student is able to explain the meaning of new words from the text.</td>
<td>EG</td>
<td>3.95</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>CG</td>
<td>1.05</td>
<td>0.11</td>
</tr>
</tbody>
</table>

The results of the Levene test indicate that the assumption of homogeneity of variances was met. Statistically significant differences between groups can be seen in the use of vocabulary from the text during the conversation with the teacher (t(8) = 6.27; p < 0.000), in students’ understanding of the words used in conversation (t(8) = 7.95; p < 0.000) and in students’ abilities to explain the meaning of new words from the text (t(8) = 7.86; p < 0.000). Regarding students’ appropriate use of word order in sentences, statistically significant differences did not occur; however the results indicate a tendency for students in the EG to express superior levels of this skill (M = 3.33; SD = 0.30) than students in the CG (M = 3.00; SD = 0.00).

The largest differences between the EG and CG were in the use of vocabulary from the text during the conversation (EG M = 3.75; SD = 0.81; CG M = 1.30; SD = 0.33) and in students’ ability to explain the meaning of new words from the text (EG M = 3.95; SD = 0.82; CG M = 1.05; SD = 0.11). We can conclude that students who read the easy-to-read form of the text use vocabulary from the text more often and are more capable of explaining the meaning of new words from the text than students reading the text in ordinary form, even though the text in ordinary form is appropriate for their age.
### Table 3. Differences between experimental and control groups regarding communication

<table>
<thead>
<tr>
<th>Variables – communication</th>
<th>Group</th>
<th>Levene test</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Student is motivated to communicate about the text.</td>
<td>EG</td>
<td>3.75</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>CG</td>
<td>3.35</td>
<td>0.29</td>
</tr>
<tr>
<td>Student collaborates in conversation with the teacher about the text.</td>
<td>EG</td>
<td>3.70</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>CG</td>
<td>3.00</td>
<td>0.18</td>
</tr>
<tr>
<td>Student discusses the text with the teacher.</td>
<td>EG</td>
<td>3.05</td>
<td>0.62</td>
</tr>
<tr>
<td></td>
<td>CG</td>
<td>1.50</td>
<td>0.18</td>
</tr>
<tr>
<td>Student communicates about the text convincingly.</td>
<td>EG</td>
<td>4.30</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td>CG</td>
<td>2.05</td>
<td>0.60</td>
</tr>
<tr>
<td>Student expresses disagreement with the teacher about the question x in the text.</td>
<td>EG</td>
<td>4.00</td>
<td>0.97</td>
</tr>
<tr>
<td></td>
<td>CG</td>
<td>2.25</td>
<td>0.25</td>
</tr>
</tbody>
</table>

The results of the Levene test indicate that the assumption of homogeneity of variances was met in all variables. Statistically significant differences between the groups were identified in students’ motivation to communicate about the text \((t(8) = 2.36; p = 0.046)\), in students’ discussions with the teacher \((t(8) = 5.36; p = 0.001)\), in students’ convincing levels of communication about the text \((t(8) = 7.40; p < 0.000)\) and in students’ abilities to express disagreement with the teacher regarding some questions in the text \((t(8) = 3.91; p = 0.004)\). The teacher used some questions in order to provoke students to disagree, which occurred only when students understood the content and the story. Such disagreements occurred less often in the CG than in the EG.

The greatest differences between the EG and CG were identified regarding students’ convincing communication about the text \((EG M = 4.30; SD = 0.33; CG M = 2.05; SD = 0.60)\) and in students’ expression of disagreement with specific questions asked by the teacher as a deliberate means of provoking disagreement and assessing understanding of the story \((EG M = 4.00; SD = 0.97; CG M = 2.25; SD = 0.25)\). We can conclude that the students in the EG were more engaged in meaningful communication because their understanding was more effectively facilitated by the use of easy-to-read text.
Discussion

Regarding differences in speech, we observed that students in the EG spoke about the text more independently and fluently than students in the CG; their responses were full of content and meaningful, with more words and longer sentences. The students in the EG also used new words from the text more often and with superior pronunciation, they used the words spontaneously, and their responses were more accurate, complex and grammatically correct. In contrast, the students in the CG used shorter sentences and fewer words and required more encouragement and additional questions. They almost never used new words from the text in their speech, unless specifically asked by the teacher. Students in the CG needed more breaks between the answers, regularly stumbled and if they were unsure of the answer would become quiet and fail to respond. Their difficulties in understanding the text were obvious, even if they did not explicitly say so.

Discrepancies in the language dimension indicated that the students in the EG used vocabulary from the text more often. They succeeded in learning and applying new words, such as 'magnifying glass', 'telescope', 'violence' and 'to be adopted'. In contrast, students in the CG rarely used vocabulary from the text, often mistook the word 'telescope' for 'binoculars', were unable to remember new vocabulary, and tended to require a greater number of additional questions and hints. The correct ordering of words in sentences was fairly equal between the groups, although sentences by students in the EG were longer and more complex. The EG group easily understood the meaning of the story and the meaning of new words. They often explained the meaning of words with examples from the text, whereas students in the CG consistently failed in this regard.

Differences in communication indicated that students in the EG were far more motivated to talk about the text and the story. They would eagerly ask for their turn to be interviewed by the teacher; students in the CG did not express the same levels of motivation. Students in the EG were very eager to talk about the text and discuss the story with the teacher, their discussions were longer, their sentences were well-structured, and they expressed their own opinions and disagreements. The differences between the groups were very clear in the questions that were deliberately asked by the teacher to provoke disagreement (one or two such questions were asked in each interview). Students in the EG recognised that the teacher’s statement was incorrect and that the story differed from that proposed. They consequently expressed their disagreement, although they did encounter some difficulties in this regard. Students in the CG failed to recognise these questions at
all and tended to simply agree with the teacher’s statements, even where they were illogical or incorrectly interpreted.

With these results we can confirm that students with mild mental disability who listen to the easy-to-read text exhibit superior communication skills in individual conversations with the teacher following the reading than do students listening to the ordinary text. Most significant differences occur in all three measured variables (speech, language and communication). Regarding speech, the largest differences between groups were in fluent pronunciation and understanding of the text. Regarding language, the largest differences between the EG and CG were in the use of vocabulary from the text during the conversation and in students’ ability to explain the meaning of new words from the text. Regarding communication, the greatest differences between the EG and CG were identified in students’ convincing communication about the text and in students’ expression of disagreement with specific questions asked by the teacher as a deliberate means of provoking disagreement and assessing understanding of the story.

Conclusions

We can conclude that comprehension of the students in EG was better than in CG at a) literal level, which refers to comprehension of the actual meaning of single propositions and b) inferential level, which refers to integration between text segments or between text segments and prior knowledge (Kintsch, 1988). Thus easy-to-read text can improve the process of understanding the literal and implicit ideas from the text and is able to support improvements in the cognitive domain (understanding of the text). Although we couldn’t find studies including easy-to-read narrative text on population of elementary students with mild intellectual disability, similar results are reported in the study of Karreman et al. (2007) in testing comprehension levels of individuals with intellectual disability after reading two different versions of the website; one adapted in easy-to-read and the other non-adapted. They found that literal and inferential comprehension of the individuals with mental disability were higher in the adapted version of the text, so we can conclude that easy-to-read text can improve understanding and language skills of the individuals with intellectual disability and thus should be promoted and used as often as possible by teachers, other professionals and parents.
References


Abstract

The results of our own research indicate the heterogeneity of hearing children of deaf parents (koda) in the development of language in context of special educational needs. Koda acquire language and speech in an unusual communication environment. The aim of the research is to analyse the linguistic development of koda in terms of active and passive vocabulary, comprehension and use of grammatical forms, and comprehension of a longer text. The results of children obtained in the normalised Linguistic Development Test were analysed. Koda may have difficulty in mastering speech in its various planes and aspects, develop language competences and skills discordantly.

Key words: Language development, Kid/Kids of Deaf Adults (koda)

It is assumed that special educational needs are those of any pupil experiencing some kind of learning difficulties, regardless of their cause and scope. A pupil with special needs is characterised through the prism of their particular developmental and educational needs, psychophysical abilities, and not only in the context of their deficits or disabilities. This article focuses on the special educational needs of pupils who are brought up in a non-standard language environment of Deaf people.

The presence of deafness in a family has an impact on many aspects of life, including interactions and resources in the family, parenting, the need for social
support (Hintermair, 2000; Wood Jackson & Turnbull, 2004). It is estimated that over 90% of children born to deaf parents can hear (Mitchell & Karchmer, 2004). These children are most often bilingual (Davidson et al., 2014; Hofmann & Chilla, 2015), bimodal (Emmorey et al., 2005; Hofmann & Chilla, 2015) and bicultural (Toohey, 2010). Deaf parents are most often members of the Deaf community, which is characterised by a common culture and language, a common history and a shared awareness of their cultural identity (Hofmann & Chilla, 2015) that is passed down from generation to generation (Grosjean, 2010; Preston, 1995). Wherever Deaf communities exist, there are also coda (Children Of Deaf Adults) and koda (Kid/Kids of Deaf Adults /0-17 y.o/). Koda are brought up in families where sign language is the most common means of communication, they acquire sign language in a natural way, going through the stages of language development analogous to those of hearing children of hearing parents acquiring phonic language (Bellugi, 1988; Morgan et al., 2002). Apart from sign language, they also acquire phonic language – during contacts of deaf parents with hearing people, relatives, through the media, on the street (Brackenbury et al., 2005).

The analysis of the results of the research conducted so far shows that koda are not a homogeneous group. Some children have special developmental and educational needs due to difficulties in speech communication. Some children acquire phonic language without great difficulty, while others require early intervention and support in learning spoken language.

Methodology of Research

Conducting research into the language acquisition of koda is challenging, because of the heterogeneity of the group of koda and their deaf parents. The differences relate to functioning in the areas of communication, cognitive and emotional issues, as well as access to psychological and pedagogical support and speech therapy. We do not know the exact number of deaf people in Poland who identify themselves with the Deaf community (identifying themselves with Deaf culture and sign language), nor the number of koda. For these reasons, research is carried out on small groups of people with specific characteristics, most often by the method of studying individual cases. In Poland, only Zaorska (1996) has studied language proficiency of koda. The analysis of results indicated that in most cases koda obtained results indicating low language proficiency, additionally they were accompanied by unclear pronunciation. The distribution of results indicates delayed and discordant development of the language skills of koda.
The research was carried out as part of the research project ‘Deaf’ parenthood. Selected psychopedagogical aspects of the functioning of people with hearing impairment as parents. The aim of the research was to determine language competences and skills of koda.

The research question is: what is the coda’s level of language development (in the majority language) in terms of active and passive vocabulary, comprehension and use of grammatical forms, and listening comprehension?

Linguistic development was established using the only language development test standardised and normalised in Poland. The language competences of koda were determined in individual studies using the Language Development Test (LDT).

LDT is a diagnostic tool that measures the language competence of children aged 4.0–8.11 years old. LDT consists of six sub-tests, allowing the assessment of the child’s competences in the field of active and passive vocabulary (two sub-tests), comprehension and use of grammatical structures (three sub-tests) and comprehension of a text heard (one sub-test). The individual examination of a child using the entire test takes about 40 minutes. The research was conducted by the author of the work (a speech therapist and special educator). When developing the test results, the raw results of individual subtests for the koda subjects were calculated, and then the stanines for individual subtests, summary measures and overall results were converted, in accordance with the table of general standards. Average results in the population correspond to stanine 5, denoting average results, and the neighbouring stanines – 4 (lower average) and 6 (higher average). Stanine results lower than 4 are considered low, and higher than 6 – as high. The overall results were also compared to the percentile measures (Smoczyńska et al., 2015).

**Participants**

6 koda participated in the research presented. The sample selection was intentional. The following criteria were adopted: children between 4.0 – 8.11 years of age, with deaf parents communicating in (PSL). Four girls and two boys, aged 5.2 to 8.6 years old (average age of subjects – 7.1) participated in the study. All of the children were healthy and within intellectual norms. Demographic variables are presented in Table 1.

The parents of the children studied are deaf people with profound hearing loss, they prefer Polish Sign Language in everyday communication, and most often
The analysis of the results of our own research was carried out in accordance with the sequence in which the LDT study was conducted and the procedure for calculating the results of individual tests.
Vocabulary – word comprehension
This subtest checks the comprehension of single words (verbs and nouns), the result is the number of correct answers (maximum 28 points).

Three out of the 6 koda obtained results showing very good comprehension of verbs and nouns: high (Madzia, Kinga – stanine 7) and higher average (Kacper – stanine 6). One obtained an average result (Ola – stanine 5). Two children obtained low results (Michał, stanine 3; Weronika – lower average result, stanine 4).

Grammar – repeating sentences
The aim of this test is to establish the morphosyntactic development of the child studied, to test their ability to form sentences by repeating them. The task consists in the child repeating faithfully 38 sentences with different grammatical structures, of which the first 4 sentences are test sentences. The maximum possible score is 34 points. The authors of LDT emphasise that sentence repetition strongly correlates with other measures of children’s grammar skills. Additionally, during the repetition of sentences, the examining speech therapist may determine the child’s articulation of particular speech sounds – qualitative analysis, going beyond the LDT examination itself. In our own research, the manner of articulation of particular sounds of the speech of the koda was noted.

Two of the koda subjects obtained fully satisfactory results: high (Weronika – stanine 7) and higher average (Michał – stanine 6). One had an average result (Ola – stanine 5). Three children obtained low results: lower average (Madzia and Kinga – stanine 4) and very low (Kacper – stanine 2).

Vocabulary – word production
This subtest checks the child’s active vocabulary, and the their task is to name objects, people, animals and activities presented in a sequence of pictures. Answers complying with the key are considered correct, as well as forms with suffixes (for verbs), diminutive, plural and extended answers (for nouns); articulation abnormalities (resulting from speech impediments) and sound substitutions are allowed. The child can score a maximum possible of 25 points.

One child had a higher average result (Weronika – stanine 6), one – average (Madzia – stanine 5). Four of the children studied had low results: lower average (Kacper, Michał – stanine 4) and low (Ola, Kinga – stanine 3).

Grammar – sentence comprehension
This sub-test is used to assess the comprehension of syntactic structures, and the child’s task is to indicate which of the four pictures from a board (from 32
four-picture boards) corresponds to the content of a declarative sentence of various length heard (from 3 to 8 words). In this sub-test, the participant may receive a maximum of 32 points.

In the Grammar – sentence comprehension subtest, two girls obtained fully satisfactory results at a very high level (Weronika – stanine 8) and a higher average level (Madzia – stanine 6). The remaining four koda obtained results that were at the level of lower average results (Kacper, Ola, Michał, Kinga – stanine 4).

**Grammar – inflection of words**

The subtest checks the children’s ability to inflect nouns, i.e. use declension forms. In this task, the participant may receive a maximum of 14 points.

In the Grammar – inflection of words subtest, one child obtained an average result (Weronika – stanine 5), the remaining 5 koda scored low: four at lower average (Ola, Michał, Madzia, Kinga – stanine 4), one child obtained a very low result (Kacper – stanine 2).

The summary results are presented in Figure 1.

![Figure 1. Summary of results of the koda subjects in the area of comprehension, production, vocabulary and grammar, converted into stanines](image)

The score for comprehension is the sum of the points obtained in the two sub-tests: word comprehension and sentence comprehension. Three koda recorded results that were satisfactory at the higher average level (Ola, Weronika – stanine
6) and high (Madzia – stanine 7) results. Two of the subjects understand words and sentences at an average level (Kacper, Kinga – stanine 5). One child’s comprehension was low (Michał – stanine 3).

Production is related to the production of words, sentence repetition and word inflection (summary results from these three subtests). One koda obtained a higher average result (Weronika – stanine 6), one average (Michał – stanine 5), three koda results were not very satisfactory: lower average (Ola, Madzia – stanine 4) or very low (Kacper – stanine 2).

Vocabulary was determined on the basis of the sum scores of two subtests: word comprehension and word production. One child obtained a higher average result (Madzia – stanine 6), two children – an average result at the level of stanine 5 (Kacper, Weronika), three children had low results: lower average (Ola, Kinga – stanine 4) or low (Michał – stanine 3).

Grammar is related to: comprehension of sentences, repeating sentences and inflecting words. One child obtained a high result (Weronika – stanine 7), three children – an average result, two koda – a low result: lower average (Kinga – stanine 4) and very low (Kacper – stanine 2).

In summary:
• only one child (Weronika) has developed the best speech and language – he did not receive a low result in any of the tests;
• the development of the speech and language of the other 5 koda is discordant and requires support;
• most of the koda subjects have no difficulties in word comprehension, but turn out to be weaker at sentence comprehension. It is difficult for koda to cope with the production of words (active vocabulary), sentence repetition (which is related to the concentration of attention and auditory and phonological memory), and the inflection of words. The results are within the limits of lower average results.

The overall results of the koda are confirmation of the above. The development of Weronika’s speech and language had reached a higher average level – stanine 6, Ola – an average result – stanine 5. The overall results of the remaining four koda subjects were ranked at lower average (Michał, Madzia and Kinga – stanine 4) or low (Kacper – stanine 1) levels. The overall results are shown in Figure 2.

The koda scores – mostly lower averages, are not unusual results. However, due to their unique linguistic environment, these children should receive assistance in developing speech and language.
The subtest Discourse – Text Comprehension requires separate/distinct analyses. As mentioned above, the results of the Discourse subtest are not included in the total and overall scores.

**Discourse – text comprehension**

The texts from the Discourse subtest were divided into narrative and informative texts. The stories read to the child contain elements relating to the mental states of the characters: their knowledge, intentions and emotions. For younger children (up to 5.11) 2 texts were prepared, for older children – 3. There are 5 questions for each text. The tasks test the child’s comprehension of a longer narrative text (and informational in the case of the older children). Each task consists in the child listening to the text read by the examiner (from 100 to 200 words), and then answering questions related to the content heard. Only in this sub-test may the examiner slightly change the examination procedure, independently selecting the number of texts read to the child (depending on the child’s age, level of fatigue and the quality of the task completion).

One child obtained a satisfactory result at the higher average level (Ola – stanine 6), the remaining five koda had low results: lower average (Kacper, Michał – stanine 4), low (Weronika, Kinga – stanine 3) and the lowest (Madzia – stanine 1).

**Figure 2.** Overall results in the study of LDT of the koda subjects
In the case of Madzia’s test, poor concentration of auditory attention on a longer, linked text was noted, as a consequence of which fatigue and decreased motivation were observed.

Articulation abnormalities were also noted in the koda group. In the case of Ola, it was the substitution of [r] for [l], palatal (softened) pronunciation of dento-alveolar sounds, and selective de-voicing of the bilabials, which can be considered a delayed development of pronunciation, requiring speech therapy. In the case of Weronika, the interdental character was noticeable, which is a speech impediment that requires speech therapy. Kinga, on the other hand, had difficulties with the correct realisation of nasal sounds in the word-final position – she requires support in the form of prophylactic, orthophonic interventions.

**Discussion**

Koda constitute a very diverse group of children in terms of speech and language development, which proves that some language skills are mastered by koda at an average level, others at a lower level, and still others are very well developed in particular children (Hofmann & Chilla, 2015). The LDT made it possible to determine the competences (comprehension – production) and language skills (lexical – grammatical) in which koda require special support. For the most part, the general development of koda speech and language is within the range of typical results but lower than in the group of their peers, there is also discordance in the shaping of language competences and skills, which determines special developmental needs (in the group of children younger than 7 years of age) and educational needs (in the group of school-age children) (see: Zaorska, 1996). Koda perform relatively better in comprehension sub-tests, and weakest in production sub-tests. In terms of word comprehension, most of the subjects (4 out of the 6 koda) obtained fully satisfactory results – average, higher-average and high. In the remaining subtests: sentence repetition, word production, sentence comprehension and word intonation – the tested children obtained results showing developmental deficits in terms of speech and language. Therefore, it can be assumed, as is the norm in the development of speech and language of an average child, that comprehension precedes production, including that related to discourse, and that passive knowledge of the language is better than its active use (Smoczyńska et al., 2015). Koda require specialist intervention, psychological and pedagogical support to harmonise their linguistic development in all its planes and aspects (Murphy & Slorach, 1983; Sachs et al., 1981). They need support mainly in
the area of production – lexical exercises, building active vocabulary and grammar – sentence comprehension, repeating sentences and inflection of words. Delays in language development also occur on the phonological plane. In this regard, koda need speech therapy support.

Interesting results were obtained in the Discourse subtest. Based on the analysis of the results from the 5 subtests, it would seem that the speech and language skills of the koda are sufficiently mastered for them to be able to freely conduct a conversation. And yet the children studied show a poor ability to combine facts into a logical whole, they miss details essential for the content of the entire story or text. Zaorska (1996) obtained similar results. Discourse is understood in various ways in the literature of the subject, most often as a discussion, a statement in which a topic is discussed in an orderly, logical, and argued manner (humanistic definitions). Linguists understand discourse as a communication event, a communication act, a sequence of linguistic behaviours dependent on the competences of the interlocutors: communication, linguistic, cultural and skills, including pragmatic ones. Discourse research is the study of language in use (along with the entire speaking situation), so in its entire pragmatic aspect. Discourse understood in this way may be difficult for koda, as they grow up in two only seemingly similar worlds. Koda interact with two diametrically different languages, they grow up in two cultures, determined by language, so it is natural that they have a perception of reality of people who speak and hear slightly differently.

This problem may also appear in the metalinguistic skills of koda. As indicated by our own research, koda are able to master a spoken language. Koda can achieve average vocabulary levels, despite receiving only 20% of language input in spoken (Brackenbury et al., 2005), but they can have problems with verbalising their own thoughts and experiences.

**Conclusion**

The obtained results are a valuable extension of research into issues related to special educational needs.

In the Polish educational system, teachers rarely understand the linguistic problems of koda, which develop in the specific linguistic environment. They do not provide adequate educational support for koda. The development of the speech and language of koda typically follows a slightly lower level and discordant course. In the case of koda, despite them having mastered the basics of language on the lexical (semantic), grammatical (syntactic) and phonological planes, we
can observe reductions in discourse, which is associated with the practical use of language in social situations, using language according to the context. Language deficits may translate into learning difficulties and determine special educational needs. For this reason, koda need more conversations, discussions on familiar topics, pretexts for creative conclusions based on hearing longer and shorter narrative and informational texts.

The results of the study indicate the direction of the coda’s psychological and pedagogical support and opportunities for further research using the Language Development Test.

References


Auditory Gnosis Dysfunctions in Preschool Children with Severe Speech Disorders

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Abstract
The aim of this study was to determine how nonverbal and verbal dysfunctions in preschool children are associated with severe speech disorders. In order to achieve the objectives of the research a special method was developed, which consisted of two modules - “Nonverbal” and “Verbal”. At the first stage, the study was conducted for each module, which allowed us to determine that children with speech disorders have significant deviations in auditory gnosis development, which causes speech disorders. However, at the second stage of the study a controversial issue arose: how do existing nonverbal auditory gnosis disorders stipulate the dysfunctions of verbal auditory gnosis development? The results of the correlation analysis show that there is a strong relationship between non-verbal and verbal auditory gnosis. Yet, if the development occurs spontaneously, without considering the “from simple-to-complex” principle, there is a significant imbalance in the formation of complex syntagmatic constructions. Therefore, during the corrective work, it is necessary to differentiate corrective tasks depending on the level of auditory gnosis development. A promising direction for further studies is the application of the developed diagnostic range of tools for creating special correction programs aimed at auditory gnosis development in children with severe speech disorders.

Key words: auditory processing, nonverbal gnosis, verbal gnosis, speech disorders, children with severe speech disorders, dysfunctions
Introduction

In modern information-oriented environment, a child perceives and processes a large amount of information every day, which depends on the ability to perceive and distinguish it with the help of various analyzers, including auditory (Nuttall et al., 2017). The amount of information perceived by auditory analyzer is significantly less than by a visual one. At the same time, the level of child’s speech development depends on normal functioning of a peripheral part of auditory analyzer (Attoni et al., 2010). Based on the sensations provided by analyzers, specific functions termed ‘representations’ in general psychology (Hillyard et al., 1998; Kaya et al., 2020), and ‘gnosis’ (Luriia, 1956; Ulrich, 1977) or ‘recognition’ (Itti & Koch, 2001) in neuropsychology are developed.

At preschool age, the formation of all types of gnosis is observed in children, which corresponds to humans’ receptors – peripheral parts of analyzers. One of these types of gnosis is auditory.

Auditory gnosis is one of basic neuropsychological mechanisms of verbal and nonverbal speech development, which functions subject to the formation of successive perception of stimuli (sounds) sequence realized in time and space (Beyn, 1979; Homskaya, 1973; Luriia, 1956). This is the chief distinction between auditory and other types of gnosis, which are perceived not sequentially but holistically (Beyn, 1979; Kaya et al., 2020; Kayser et al., 2005). Successive mastery of auditory gnosis requires the ability to separately (discretely) “keep track” of the elements from the row (Beyn, 1979). Perception of any auditory information fragments does not provide its general understanding (Buchsbaum & D’Esposito, 2019; Surprenant & Watson, 2001). Due to this, it is important that in the early period of ontogenesis, a child acquires the ability to keep track of different sequential chains of auditory stimuli, such as melodies, words, etc. (Bailey & Snowling, 2002).

Through auditory gnosis, people perceive and differentiate speech and non-speech sounds, determine sound source direction and remoteness, perform auditory orientation in space, analyze sounds by frequency, intensity, duration and timbre, directly analyze various physical qualities of a sound stimulus (Kidd et al., 2007; Price et al., 2005). Depending on these characteristics, nonverbal and verbal auditory gnosis are distinguished, which are localized in the temporal lobes of the cerebral cortex (Beyn, 1979; Luriia, 1956). Nonverbal auditory gnosis provides the ability to perceive and differentiate (Rees, 2012), and verbal – to distinguish and recognize speech sounds (Zaehle et al., 2004).

Dysfunctions of both nonverbal and verbal acoustic-gnostic processes are typical for children with severe speech disorders (Bailey & Snowling, 2002). It
is important to note that the scientists (Glogowska et al., 2000; Homskaya, 1973) consider reduced ability to perceive non-speech sounds with saved hearing and intelligence as non-verbal auditory gnosis dysfunctions. This category of children demonstrates difficulties with rhythmic analysis, differentiation of domestic noises, and distinction of various intonation components (Stark & Tallal, 1981; Tallal & Piercy, 1973). Concurrently, for children with severe speech disorders, such processes as perception of intonation components and matching of people's voices with their sex and age are disrupted (Crosbie et al., 2005).

Dysfunctions of verbal auditory gnosis in children with severe speech disorders are described in neuropsychological (Homskaya, 1973) and psycholinguistic studies of speech mechanisms (Marangoni & Gil, 2014). The scientists define a decreased ability to perceive speech sounds with preserved ability to hear other acoustic stimuli; difficulties in differentiating of oppositional sounds in paronyms (Attoni et al., 2010; Bishop et al., 1999; Leonard, 2014). This category of children has a disordered sound-producing speech component, they insufficiently distinguish acoustic features of phonemes, which is a sign of dysfunction of phonemic processes (Polivara & Karabulatova, 2018).

The aim of this study was to determine the interdependence of nonverbal and verbal auditory gnosis dysfunctions in preschool children with severe speech disorders.

**Methodology of Research**

The study involved 40 children who are currently attending mainstream nursery-schools in Ukraine. Among the participants, there were 20 children with severe speech disorders and 20 children with normal speech development. The average age of children was 4.5–5 years. The study was conducted with each child individually. For the normative sample, children were invited to participate via a nursery-school. It is important to notice that all the subjects had preserved physiological hearing and initially preserved intelligence.

In order to determine the level of formedness of auditory gnosis (nonverbal and verbal) in preschool children with severe speech disorders in comparison with children with normal speech development and achieve the purpose of the study, an experimental method consisting of two modules was developed. The research was conducted from October 2018 to March 2020.

The first module (“Nonverbal”) is aimed at achieving the following goals:
• studying the formedness of nonverbal auditory gnosis level in preschool children with severe speech disorders;
• detecting the ability to aurally differentiate and recognize non-speech sounds, to identify domestic noises and to determine the direction of a sound source in this group of children;
• studying the ability to acoustically analyze rhythmic structures, to perceive rhythms, memorize and reproduce them by auditory pattern, by speech instruction and during counting;
• identifying children’s ability to perceive intonation components, determine voice affiliation, perceive and reproduce the voice pitch, strength and timbre.

The results of the “Nonverbal” module were grouped according to the following criteria:
  – children’s ability to navigate in space with the help of hearing, to determine the direction of a sound source;
  – children’s ability to aurally differentiate and recognize non-speech sounds (sounds of nature, domestic noises, etc.);
  – ability to reproduce rhythms according to the auditory sample, speech instruction, during counting;
  – ability to perceive intonation components, to determine voice affiliation;
  – ability to reproduce the voice pitch, strength and timbre;
  – number and nature of imitable units;
  – self-control during tasks performance.

The second “Verbal” module is aimed at the following goals:
• studying the level of formedness of verbal auditory gnosis in preschool children with severe speech disorders;
• identifying children’s ability to distinguish oppositional sounds in paronyms;
• determining the level of development of phonemic perception;
• determining the features of independent and reflected pronunciation of words with different structural complexity;
• determining the nature and features of word distortion by preschool children;
• determining features of pronunciation of simple syntagmatic constructions with and without support on a verbal / visual sample;
• determining child’s ability to maintain a program of action (sense of rhythm) in the process of pronouncing a set of these constructions.

The results of the “Verbal” module were grouped according to the following criteria:
Auditory Gnosis Dysfunctions in Preschool Children with Severe Speech Disorders

- the level of complexity of the constituent structure of the word, which is available for pronunciation;
- nature and number of pronunciation distortions;
- state of the rhythmic pattern of the word during reproduction (chanting, use of emphasis);
- tempo characteristics of reproduced words (speed, pauses);
- presence / absence of a certain type of distortion;
- strategy of a lexical unit structure analysis;
- self-control during words reproduction.

According to the evaluation criteria of “Nonverbal” and “Verbal” modules, each answer was scored from 0 to 3 points, depending on the errors during tasks performance. After counting the total number of points, the level of task performance was determined: high, average or low.

The study used quantitative and qualitative data analysis by the aid of statistical processing methods: descriptive statistics (measures of central data, measures of variability), Pearson correlation analysis.

Results and Discussion

Based on the results of the experimental study, we can summarize the diagnostic data for module I “Nonverbal” and determine the average performance of the levels of formedness of nonverbal auditory gnosis in preschool children with severe speech disorders compared with children of the same age with normotypic speech development (Fig. 1).

The results on “Nonverbal” module indicate that preschool children with severe speech disorders have immature nonverbal auditory gnosis, which is confirmed by the presence of a low level - 20% and average level - 35%. In contrast, children with normotypic development do not demonstrate low level and have almost twice as high rate of high level of nonverbal auditory gnosis formedness - 80%. The results presented confirm readiness of children with normotypic development to perceive verbal units.

Concurrently, the existing nonverbal auditory gnosis dysfunctions of children with severe speech disorders are characterized by certain parameters. The majority has insufficiently formed ability to differentiate and recognize non-speech sounds aurally. For example, these children had difficulties while determining the location of a sound source and required more time and repetitions. Besides, children with severe speech disorders had significant difficulties in differentiating and
recognizing nature sounds aurally. The following sounds were especially difficult
to distinguish: rain noises, noises of forest on a windy day and sea surf sounds.
The children experienced difficulties in identifying domestic noises, especially in
distinguishing the sounds of such objects as matches, scissors, purse with money, et al.

The major part of children with severe speech disorders has an insufficiently
formed ability to acoustically analyze rhythmic structures, aurally perceive and
reproduce rhythms. Particular difficulties appeared during the reproduction of
complex rhythms; most children could not cope with the task and correctly repro-
duce rhythms by the auditory sample. To perform the task correctly, they needed
more time to perceive the rhythm and repeat it at a slower pace compared to the
children with normotypic development.

The above results showed that the majority of children with severe speech
disorders have underdeveloped ability to perceive intonation components,
difficulties in determining voice affiliation of fairy tale characters. The voices of
such characters as a mouse and a frog, wolf and bear were especially difficult to
differentiate. Perception and reproduction of a voice pitch, strength and timbre
are also insufficiently formed in children with severe speech disorders compared
to children with normal speech development. The children with speech disorders

Figure 1. Average performance of nonverbal auditory gnosis in preschool
children with severe speech disorders and normal speech development (in %)
found it difficult to reproduce the voices of animal cubs, and special difficulties arose when pronouncing vowel sounds in low and high-pitched voices.

According to the results obtained the presence of nonverbal auditory gnosis dysfunctions in children with severe speech disorders may indicate the presence of speech command disorders since the developed non-verbal auditory gnosis, which ensures child’s orientation in space, includes motor components, provides the perception of sound stimuli sequence and distinction of rhythmic and intonation components, as well as other non-verbal processes. The above-mentioned indicates that non-verbal auditory gnosis is a precondition for development of verbal auditory gnosis.

The results of diagnostics according to module II “Verbal” are presented in the diagram (Fig. 2). This made it possible to determine the average performance of levels of formedness of verbal auditory gnosis in preschool children with severe speech disorders compared to the children of the same age with normotypic speech development.

![Figure 2. Average performance of levels of formedness of verbal auditory gnosis in preschool children with severe speech disorders and normal speech development (in %)](image)

The results for “Verbal” module indicate that preschool children with severe speech disorders have underdeveloped verbal auditory gnosis, which is confirmed by the presence of a low level – 25% and average level – 35%. In contrast, children
with normotypic development do not demonstrate low level and have almost twice as high rate of high level of verbal auditory gnosis development - 95%. The results for the average level of verbal gnosis formedness are interesting: index of children with severe speech disorders (35%) is five times higher than the index of children with normal speech development (5%).

The existing verbal auditory gnosis dysfunctions in children with severe speech disorders are characterized by certain parameters. The children with severe speech disorders had difficulties in distinguishing acoustically close and articulatory distant sounds by ear, and vice versa. Accordingly, during the performance of the task children did not try to determine the sound, but to guess it. In addition, the majority of children with severe speech disorders have an insufficiently formed ability to perceive and distinguish phonemes by ear; there are difficulties in identification of oppositional sounds in paronyms and insufficiently high level of development of phonemic perception, in contrast to children with normal speech development. When determining the features of perception of rhythmic and structural word characteristics (syllables, words, minimal structural units, quasi-words), the results of the study showed that most children with severe speech disorders have an insufficiently formed ability to independently and reflectively reproduce words of complex component structure. Thus, the children had difficulties in pronouncing two- and three-syllable words with matching consonants, namely: sound skipping or extra vowel adding. They demonstrated an insufficiently formed ability to perceive rhythmic and structural characteristics of a word, as well as difficulties in maintaining a program of action in the process of pronouncing a row of words / constructions.

The results of the presence of verbal auditory gnosis dysfunctions explain severe speech disorders in this category of children. However, a debatable issue is whether the existing nonverbal auditory gnosis disorders cause dysfunctions in verbal gnosis development. In order to clarify this and identify the relationship between nonverbal and verbal auditory gnosis, Pearson correlation analysis between the characteristics studied was performed. The results are presented in Table 1.

In the process of correlation analysis, direct significant correlations were established between the reproduction of simple syntagmatic constructions and aural identification of non-speech sounds \( r = 0.78 \), at the significance level of \( p \leq 0.001 \) and aural distinction of voice pitch, voice strength and timbre \( r = 0.93 \), at the significance level of \( p \leq 0.001 \). These results indicate a certain interdependence, i.e. aural distinction of non-speech sounds, as well as voice pitch distinction, strength and timbre underlie the formation of reproduction of simple syntagmatic constructions, which subsequently will be a base for more complex ones.
The above is confirmed by the significant inverse correlations found in this study. In particular, there are inverse correlations:

- between aural distinction of non-speech sounds and aural differentiation of paronyms with visual support ($r = -0.72$, at the significance level of $p \leq 0.001$);
- between aural distinction of the voice pitch, strength and timbre and aural differentiation of paronyms without visual support ($r = -0.75$, at the significance level of $p \leq 0.01$);
- between aural perception and reproduction of rhythms with independent pronunciation ($r = -0.77$, at the significance level of $p \leq 0.001$) and reflected pronunciation ($r = -0.9$, at the significance level of $p \leq 0.01$).

Thus, if complex speech processes are formed on the basis of simple ones, but the ontogenetic principle of transition from nonverbal to verbal processes is not observed, there will be dysfunctions in the formation of complex speech phenomena. This proves that the process of forming verbal constructions should proceed gradually, considering "from simple to complex" principle, namely from nonverbal gnosis with gradual inclusion of simple verbal constructions at the level of phonemes, words, phrases, sentences, etc. This will allow a child to involve natural speech intuition; as a result, the speech will be developed successfully.
Conclusion

Auditory gnosis is defined as one of basic neuropsychological mechanisms of formation of verbal and nonverbal speech, which is essential to preschool children’s development. It is established that nonverbal auditory gnosis is a basis for verbal gnosis formation which provides distinction of subtle differentiated features of phonemes, which has a positive effect on the formation of simple ones, and, as a result, complex syntagmatic constructions.

The results of nonverbal and verbal auditory gnosis correlation analysis proved the interdependence of their dysfunctions in preschool children with severe speech disorders. These results became the basis for further development of methods for auditory gnosis formation in this category of children.

In the context of this issue, the promising areas of further research are the development and experimental verification of the methods of formation of auditory gnosis in preschool children with severe speech disorders. Such an objective can be reached through formation of children's perception and differentiation of nonverbal (determination of a sound source direction and remoteness; auditory orientation in space; sound analysis by frequency, intensity, duration and timbre; analysis of various physical qualities of a sound stimulus) and speech sounds (from phoneme with gradual verbal material complication to complex syntagmatic constructions).

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References


Chosen Aspects of Psychology
Concern, Pessimism and Neuroticism of Senior Undergraduates and Students

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Abstract
This paper explores the relations of concern, pessimism and neuroticism in two groups of young people, students in their final year of high school, and senior undergraduates of different faculties. In this research, we further want to check at what level these cognitive elements are expressed in young as well as whether there is a difference between the sexes.

The study included 274 participants, average age of 20 from the South-Western Serbia. The following instruments were used: Scale of optimism / pessimism, Penn state questionnaire of concerns and GEN questionnaire for generalized neuroticism.

The results showed that young people have a higher concern, pessimism, and that 17.9% of young people in our sample were neurotic. Female gender is more concerned and neurotic when compared to males.

Key words: Neuroticism, concern, pessimism, youth, school, university

Introduction
In an effort to understand the school context of modern education, which is characterized by transitional changes in the past in Serbia, and which directly reflects on users of the education system, high school students and students, we decided to check some cognitive, behavioral and conative characteristics of adolescents.
Critical periods during schooling are mainly related to the transition periods from primary to secondary school, from secondary school to faculty, and from the faculty to the world of work. Special emotional investments monitored behaviorally can model a conative structure, and are certainly a source of concern for adolescents in an educational context.

This model of conative function is the synthesis of a reformulating model suggested by Powell and Royce (1982), and Momirović, Horga and Bosnar (1982, 1984).

Finally neuroticism can be defined as the overall efficiency of all systems for the regulation, control and coordination, and is operationally defined as the general factor of higher order in the space of all variables that evaluate different aspects of the (in)effectivity of the systems that determine the conative functioning.

It is possible that the cognitive style is modelled by heightened concern and pessimism as the tendency to interpret the future in the global, specific and negative way of modelling the existing neuroticism. Furthermore, research results in most cases show that increased anxiety during adolescence is shown through inferior social and academic functioning and a high risk of school failure (Laugesen, Dugas, Bukowski, 2003). According to the cross-cultural study testing the relations of concerns, optimism / pessimism in US and Russian adolescents, obtained results showed that the concern is negatively correlated with age, which is explained by gaining experience and building personal strategies. Russian teens show greater concern in global sense in relation to the Americans. The authors explain this data referring to constant social changes in Russia and more expressive collective consciousness (Howard, Sukhodolsky, 1995).

A cognitive state of anxiety, accompanied by a behavioral pessimistic explanatory style, along with neuroticism accompanied by emotional maladaptation and bad mood can be an additional burden for adolescents at a critical moment in their development. The task of the support system through pedagogical psychological practice is to recognize and strengthen cognitive and conative malformations. In this way, we strengthen the school system with a safe atmosphere for all its users and create a sense of belonging to each user at the primary, secondary and tertiary levels of education.

**Methodology**

In accordance with the theoretical basis, we decided to check the level of neuroticism, anxiety and pessimism of high school and university students by examining the nature of the relationship between general neuroticism, anxiety and pessimism in this group of respondents.
Sample
The study sample consisted of students of final year of secondary schools in Novi Pazar and Sjenica and students of final year of studies of the State University of Novi Pazar from different departments. The study included 274 respondents equal to certain parameters (by gender: female 58% – 42% of males; by education: pupils 53.6% – 46.4% students), and the average age of respondents was 20 years (AS = 20.5; SD = 2,433).

Instruments
The study will use the following measuring instruments:

The general neuroticism GEN/A; GEN/B – to assess neuroticism we will use the tests GEN/A and GEN/B of the group of authors (Wolf, Momirović, Džamonja, Hošek, 1993). These are two strictly parallel tests to assess general neuroticism – GEN/A and GEN/B. Tests GEN/A and GEN/B can be applied collectively and individually. In GEN test 15 items are selected from every scale saturated by this factor, virtually at random. The items are included in the composition GEN/A. The remaining 15 items are listed on the GEN/B. Both tests contain 75 items. Natural boundaries to determine the classification categories with normally distributed traits are inflection points of distribution function. Therefore, the borders used for this type of diagnostic observations are at ± of one standard deviation from the average. These borders divide population on 15.87% of those who are not neurotic (group of non-neurotic), 68.26% of those whose neuroticism is average (group of average neurotic) and 15.87% of those who are highly neurotic (a group of neurotic).

Penn state Worry Questionnaire – Penn state Worry Questionnaire will be used to examine the concerns (Penn State Worry Questionnaire-Mayer et all., 1990). The questionnaire consists of 16 statements that measure the propensity to excessive and uncontrollable worry. Eleven claims measure high and uncontrollable worry, while 5 claims are of a reverse direction. The questionnaire is univariate.

Scale of optimism / pessimism – Scale of optimism/pessimism of the author Chang will be used for testing optimism and pessimism (Chang 2002, according to Penezić, 2002). The scale contains 14 items: 6 for assessing optimism and 8 for assessing pessimism. The overall result is formed as a linear combination (sum) of scores on each item, separately for optimism and for pessimism. Results of the research showed that between optimism and pessimism scale there is a high negative correlation, meaning that these two constructs are basically two dimensions, not two sides of the same dimensions. Reliability of the scale for optimism is α = .632, and for pessimism α = .728.
Results and Discussion

The average level of neuroticism in our sample is approximately 268 (M = 267.81, SD = 41.17). Respondents have achieved an average score of 22 (M = 21.88, SD = 4.94) on the pessimism scale, and the average score on the scale of concern is 47 (M = 47.07, SD = 7.19), indicating an increased concern on the total sample of respondents.

Having in mind that in the description of the instruments we emphasized that the scale of the cybernetic model of general neuroticism is a diagnostic instrument, the analysis of the limit values were determined based on the recommendation of the author (Momirović and associates, 1982), so the limit value for neuroticism is equal to the average value + standard deviation. In our sample, the limit value is 310, and respondents who achieved the result of over 310 can be seen as neurotic. There are 49 (17.9%) neurotic respondents in our survey.

Increased levels of concern and pessimism in our sample can be understood as an appeal to help sent by young people to the world that surrounds them. Adolescents, who participated in this study informally, during the research, suggested that they were very concerned and disappointed with the existing social system. Starting from school as part of the macro system in which they function every day, to their natural environment – family, young people are characterized by a pessimistic mood and noticeable concern.

How can we interpret this situation of our youth? The social changes over the past 25 years have made a social climate in which uncertainty and concern follow us day by day. Teenagers, even when they do not want to think about the future, when they are committed to the present and wish to live there in prosperity, worried and pessimistic environments impose their forms of thinking on them. Global dissatisfaction with the poor economic conditions of the local population, including South-Western Serbia like among the least developed parts of Serbia, is present in almost every family. The continuing need to maintain harmonious family continuity of everyday life and distractors that disrupt this continuity can be assumed to cause the increased levels and concerns, and therefore a pessimistic view to the future.

The authors (Brdar, Miljković, Rijevac, 2011) believe the parental explanatory style has a primary influence on a child’s development of pessimism. Parental explanatory style, a way of predicting the future, understanding the consequences and analyzing events will affect the adoption of explanatory styles of their children. In case of a fault, pessimistic parents often declare their child as “stupid” or “lazy” which can lead to the situation that a child internalizes these inner, lasting and
global causes in the future, and considers them to be a reason for her/his failures, thus maintaining pessimistic explanatory style (Seligman, 1995).

According to the research of Muris (Muris, 2002), the concern as cognitive style is greatly influenced by parents. Increased concern about the lack of material resources and primary care to maintain the unique structure of the family certainly imposes a burden on children and parents. The severity and indulgence as parenting styles cause rebellion, disobedience, resistance, a sense of reduced control, a sense of general insecurity in their own actions, and young people often feel worried and unreliable which is also followed by a strong sense of dependence. It is important to note that this is a fairly conservative environment with a strong influence of the patriarch so both honour and dignity are two very important characteristics of personality that need to be developed. Furthermore, the survey results show a high average neuroticism of adolescents.

According to Malinić (Malinić, 2011) a high level of neuroticism was found in students from Bosnia and Herzegovina in relation to students in Montenegro, which is explained by greater willingness of Montenegrin students to focus on the problem and seek social support. The high level of emotional instability can be interpreted by social changes, especially in the education system as well. If we look at adolescents in the context of education, the pressure they experience with the current changes may result in difficulty in adapting. Very often, the effects of pressure are expressed through anxiety, worry and concern. The need to overcome the requirement of education, which is often changing, forces adolescents to form new coping strategies in order to feel emotionally stable.

The results of age, pessimism, concern and neuroticism are compared to T-test for independent samples. The results are shown in the table.

**Table 1. Values for the variables pessimism, concern, and generalized neuroticism at sexes**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Males</th>
<th>Females</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AS ± SD</td>
<td>AS ± SD</td>
<td></td>
</tr>
<tr>
<td>Pessimism</td>
<td>21.93±5.09</td>
<td>21.83±4.83</td>
<td>0.877</td>
</tr>
<tr>
<td>Concern</td>
<td>45.87±6.82</td>
<td>47.94±7.34</td>
<td>0.018**</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>260.98±43.64</td>
<td>272.74±38.68</td>
<td>0.009**</td>
</tr>
</tbody>
</table>

**p<0.01

The difference of mean values of pessimism between the sexes is not statistically significant (p = 0.877). The difference of mean values of concern between the sexes
is statistically significant and female adolescents are more concerned in our sample (p = 0.018). Consistent research reports that female gender is more concerned, so they achieve significantly higher scores than male in tests that measure concerns. Culturally speaking, women are more educated in the “spirit of concern” through constant implication of a sense of security and responsibility that is placed on the woman by the society. In accordance with their upbringing, women will faster develop altruistic motivation that involves love for children, the desire to care for them, to give them love and protection. Hence the increased need of women for protection and care when they are not protected. It is interesting that the research findings show that women have more statements about maladaptive care than of adaptive care (Rueckert, Naybar, 2008). The main reason lies in the fact that women tendency to care is associated with their positive belief about caring. Women, in some cases, possess magical thinking that expressing concern in a way protects them against negative emotions.

In our sample, female adolescents have a higher level of neuroticism compared to male adolescents. This finding is consistent with numerous researches that deal with differences in the level of neuroticism according to sex (Goodwin, Gotlib, 2004; Heaven, Shochet, 1995; Lippa, 2010). Consequently, neuroticism refers to the reduction of attempts to “improve” the current state, to mitigate the bad emotions and maintain good emotions, and in this domain, women are more willing to “fix” the current poor emotional state and to mitigate the effects of negative emotions compared to men (Kokkonen, Pulkkinen, 2001). Recent studies also show that women experience more emotional changes during the day compared to men (Almeida, Kessler, 1998; Mohr et all 2003), and accordingly the greater the number of daily activities during the day, the persons with more pronounced neuroticism will react stronger to events and stimuli (Longua et al., 2009), which may indicate that neuroticism in women may not be in the function of personality trait, but in the function of the number of activities during the day (VanDyke, Gore, 2012).

By T-test for independent samples, we checked whether there are differences between the mean values of neurotic and non-neurotic and variables of pessimism and concern.

The difference between the mean values of pessimism between neurotic and others is statistically significant (p <0.05).

The difference between the mean values of neurotic and other is statistically significant (p <0.05). The results are shown in Table 2.

The assumption that pessimism as an explanatory style will result in elevated neuroticism has its basis in theory and can be seen through the learned helplessness model proposed by Seligman. Namely, if we suppose that every failure
destabilizes us emotionally to a different extent, a school failure, which is not only quantified through school assessment but also through a number of other situations related to the school environment, could contribute to the feeling of helplessness in adolescents. In a situation where we are prevailed with helplessness we tend to make the situation seem catastrophic, and the need for initiation of willing action is almost non-existent.

The causes of an event in the eyes of the pessimist are usually permanent and global which reinforces the emotional discomfort, anxiety, feelings of helplessness, irritability and anxiety.

The study of Marshal found that pessimism correlated with neuroticism, while optimism correlated with extraversion (Marshal at all, 1992).

In numerous studies that have checked the effect of pessimism/optimism on performance, it is proved that optimists tend to use proactive strategy focused on the problem and to plan action (Carver, Schaiver, 1999), compared to pessimists who prefer mainly emotional strategies: avoidance, social support and withdraw from people.

Judging by reports of the research, concerns contribute to both behavioural changes and personality traits. In an experiment which was verifying whether the success in the performance of a target-oriented behaviour was influenced by individual personality traits, it was shown that people with more pronounced neuroticism would choose those actions that increase the level of concern in order to protect themselves against failure (Tamir, 2005).

Similar results were obtained by the authors who reviewed the relationship between intolerance of uncertainty, meta-worry, neuroticism and conditions of concerns among the non-clinical, student population. The results showed that intolerance on uncertainty, meta-worry and neuroticism can significantly predict concern as a character trait or characteristic, whereas intolerance on uncertainty and meta-worry can be considered important mediators in the relationship between neuroticism and concerns as a character trait. In situations when a stressful event is inevitable, intolerance of uncertainty and neuroticism affect meta-worry and support the character concerns (de Bruin et all., 2006).
Using the Pearson correlation coefficient we checked correlation between variables in the study. The results showed that the age is in moderately negative correlation with pessimism, and in positive correlation with general neuroticism. The results are shown in the table.

**Table 3.** Pearson correlation coefficient to examine the link between the variable of age and pessimism and generalized neuroticism

<table>
<thead>
<tr>
<th></th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Pessimism</td>
<td>-0.168</td>
<td>0.05</td>
</tr>
<tr>
<td>Age The general neuroticism</td>
<td>0.172</td>
<td>0.04</td>
</tr>
</tbody>
</table>

The results of our study show that as we get older we are less pessimistic. According to Seligman, a style of explaining good events is invariant during 50 years. As Seligman said, the same person could consider good events as a twist of fate in one period of his/her life, and in another period as consequences of his/her skills. For bad events, the explanatory style is even more durable, more than 50 years we reserve the need to explain bad events. It is assumed that over time we learn to use “defence”, characteristic ways in which people struggle with bad events. Mature modes of defense are – humor, altruism, and sublimation. According to the research of the same author, a considerable number of research has shown that the use of these “mature defence” maintains good health and that the individuals who realize it, learn to use these strategies, which directly reduce pessimism (Seligman, 2008).

Research shows that combination of high daily optimism and low daily pessimism is characteristic for youth, which contributes to the greatest emotional benefits for young people, while the relation of high optimism and high pessimism is characteristic for elder people, without combinations characteristic for younger age (Palgi et all., 2011; Chang, 2002). It is likely that over the years we learn that excessive optimism can have two consequences: too much optimism can lead a person to neglect the threat or to overestimate his/her skills in dealing with a difficult situation.

Excessive optimism in the form of fantasies about achieving the goal may discourage people from making concrete plans to achieve the goal (Brdar, Rijevec, Miljković, 2008).

It is also possible that the experience teaches us that defensive pessimism strategy is the best for maintaining mental health. Defensive pessimism conditions the setting of smaller goals and increase of expectations which enhances self-efficacy and belief that they can influence the outcome of events.
Conclusion

In accordance with this knowledge, adolescence implies the need of a young man to make more steps at the level of intra-psychic maturity, interpersonal and global social functioning. Violent changes in adolescence will result in the construction of identities through the replacement of the valuation system assumed by parents – in their own system of valuation. During this development period the adolescent is given more autonomy and freedom, which means not only more rights but also more responsibility.

References


Emotional Intelligence of Future Physicians Who Tend to Hide Professional Mistakes

Abstract
The purpose of the article is to present the results of testing the emotional intelligence of the future physicians who tend to hide professional mistakes. The article is based on the study involving 129 students who are studying in the specialties “Medical business”, “Medical psychology”, “Pediatrics”, “Dentistry” at the medical-psychological, dental and medical faculties of the O.O. Bohomolets National Medical University. During the study, the following methods were used: 1) The Error-Oriented Motivation Scale (EOMS) in order to measure a tendency to hide professional mistakes; 2) The Emotional Intelligence Scale in order to determine the level of emotional intelligence. Statistical processing of the study results was performed using 1) descriptive statistics (percentages, arithmetic means, standard deviations); 2) Student's T-test to compare the emotional intelligence level in the groups of future physicians with different levels of propensity to hide professional mistakes. The study has found that a significant number of future physicians (53.5%) showed a tendency to hide their professional mistakes. The respondents in this group are characterized with low and medium levels of emotional intelligence compared to future physicians who strive to learn from their mistakes. This study has demonstrated that the vast majority of future physicians believe that professional errors should be hidden, which, in turn, does not contribute to their professional development; the future physicians who tend to hide professional mistakes have low levels of emotional awareness, ability to manage one's emotions, self-motivation, empathy, ability to manage other people's emotions. The development of emotional intelligence would apparently contribute to a more conscious attitude of future physicians to professional activities as well as more common-sense
attitude to mistakes, and this poses new challenges for medical education to form emotional intelligence of future medical professionals.

**Key words:** emotional intelligence, physicians, professional development, professional mistakes

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**Introduction**

Problems related to medical ethics have not lost their relevance for many decades. Respectful attitude to colleagues, subordinates and patients, sincere interest in providing quality care to those who need it, efforts not to harm. All these classic theses of medical ethics are known even to people who are not directly related to medicine. According to recent research, medical students not only share the basic ethical principles, but also understand that the study of medical ethics is directly related to professional success in the future (Vodenitcharova, Leventi & Popova, 2019). While medical universities are increasingly introduce into their programs the medical ethics courses aimed at analysis and investigation of cases with ethical professional problems (Yoo, Joo & Lee, 2017), researchers often ignore such a complex and ethics issue as hiding professional mistakes (Schleifer & Vannatta, 2019).

Mistakes are considered natural phenomenon in any professional activity, however when it comes to the professional activity of a physician, the issue of errors acquires a special depth and significance. A medical error may cost patient time and money for treatment, health and even life. That is why mistakes in medical activities are an issue that is painfully sensitive to discuss and investigate. However, mistakes are a source for self-development of a physician. Any own mistake teaches better than investigated cases of other people's mistakes. Contemporary researchers believe that medical errors deserve a separate study and investigation in medical education (Ritterman, 2017). However, it is important to teach future doctors not only to understand what a mistake is but also to respond correctly to mistakes, so that they do not cause harm in the future.

**Problem of Research**

According to the modern theory of error-oriented motivation, there are three main ways to respond to error: hiding mistakes, worrying about mistakes and learning from mistakes. Only the last strategy is constructive and involves deep reflection, acceptance by a physician of his/her imperfections, willingness to
change. These characteristics may develop only in an emotionally mature person. In order to better understand the ways of forming a readiness of future physicians to respond constructively to mistakes, it is important to gain an insight how these characteristics are related to their emotional intelligence level.

**Research Focus**

The purpose of the article is to present the results of testing the emotional intelligence in the future physicians who tend to hide professional mistakes.

**Methodology of Research**

**Sample of Research**

The article is based on the study involving 129 students who are studying in the specialties “Medical business”, “Medical psychology”, “Pediatrics”, “Dentistry” at the medical-psychological, dental and medical faculties of the O.O. Bohomolets National Medical University.

**Instrument and Procedures**

During the study, the following methods were used: 1) The Error-Oriented Motivation Scale (EOMS) in order to measure a tendency to hide professional mistakes; 2) The Emotional Intelligence Scale – to determine the level of emotional intelligence. Statistical processing of the study results was performed using 1) descriptive statistics (percentages, arithmetic means, standard deviations); 2) Student’s T-test to compare the emotional intelligence level in the groups of future physicians with different levels of propensity to hide professional mistakes.

**Data Analysis**

During the first stage of the study, a tendency of future physicians to hide professional mistakes was examined using the Error-Oriented Motivation Scale (EOMS). According to the results of this questionnaire, the respondents were divided into two groups: inclined to hide professional errors (n = 69), not inclined to hide professional errors (n = 60). During the second stage, the level of emotional intelligence was examined in the future physicians using the Emotional Intelligence Scale. According to psychological testing results, the levels of emotional intelligence were compared between the groups using Student’s T-test.
Results of Research

According to the results of testing students with EOMS, there were identified in the future physicians the leading strategies to respond to professional errors (Table 1).

Table 1. The results of testing with the Error-Oriented Motivation Scale in the study groups

<table>
<thead>
<tr>
<th>Scale</th>
<th>Number of subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning from errors</td>
<td>31 (24.03%)</td>
</tr>
<tr>
<td>Worrying about errors</td>
<td>56 (43.41%)</td>
</tr>
<tr>
<td>Covering errors</td>
<td>42 (32.56%)</td>
</tr>
</tbody>
</table>

The methodology allowed to determine that the largest among all respondents was a subgroup of students who are worrying about professional mistakes (43.41%). This error response strategy may have both constructive and destructive consequences for the professional development of future doctors. Thus, if the second most important strategy for a person is learning from errors, then excessive worrying will contribute to a more meticulous attitude of the future physician to self-development. In such situation, an error will act as a driving force for continuous self-development as well as conscious attitude towards future patients. If the second most important strategy is covering errors, then the opposite situation will be observed – the future physician will constantly worry about the need to hide a mistake, and the worrying will have a disorganizing effect on him/her.

The second largest subgroup involved students who are covering errors (32.56%). Representatives of this group are overly focused on maintaining an ideal external image rather than internal professional growth. Their major fear is admitting a mistake to others. That is why they build their professional development by finding the easiest tasks and situations with the lowest risk. Such professional development strategy neither contribute to the development of professionally important competencies nor personal hardening and makes members of this group the potential victims of emotional burnout in the future.

The group with a tendency to learn from their mistakes (24.03%) was the smallest. Respondents of this subgroup are well aware that any activity, including medical, is accompanied by mistakes. Error is a natural phenomenon that often
accompanies activities of professionals working with people. Lack of direct dialogue, concealment of information as well as decision-making in a situation of limited time may lead to professional mistakes. Even though mistakes of physicians are not a good thing and may sometimes cost the patient’s life, nevertheless, if they happen, everyone should take the maximum – to learn from them. After all, the experience gained through a professional mistake is better engraved in memory and it should be used for development, not for self-suppression.

To determine the features of emotional intelligence in the future physicians who tend to hide professional mistakes, two groups were formed in the study. Group 1 included the future physicians who tend to hide their mistakes (n = 42), and future physicians who chose worrying as the first strategy and covering errors as the second strategy for responding to the error (n = 27). The total number of respondents in this group was 69 people.

Group 2 included future physicians who tend to learn from mistakes (n = 31) and future physicians who choose worrying as the first strategy and learning from errors as the second strategy for responding to error (n = 29). The total number of respondents in this group was 60 people.

The results of comparative analysis showed the statistically significant differences for all parameters according to the technique of N. Hall (Table 2).

<table>
<thead>
<tr>
<th>A scale of emotional intelligence</th>
<th>Mean score</th>
<th>Student's T-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group 1 (n = 69)</td>
<td>Group 2 (n = 60)</td>
</tr>
<tr>
<td>Emotional awareness</td>
<td>9.32 ± 5.51</td>
<td>12.61 ± 5.05</td>
</tr>
<tr>
<td>Managing one's emotions</td>
<td>0.41 ± 8.19</td>
<td>5.80 ± 6.45</td>
</tr>
<tr>
<td>Self-motivation</td>
<td>6.83 ± 6.11</td>
<td>9.38 ± 5.11</td>
</tr>
<tr>
<td>Empathy</td>
<td>8.29 ± 5.93</td>
<td>12.50 ± 2.91</td>
</tr>
<tr>
<td>Managing the emotions of other people</td>
<td>8.11 ± 5.61</td>
<td>11.26 ± 3.21</td>
</tr>
<tr>
<td>Total score</td>
<td>32.74 ± 22.06</td>
<td>51.61 ± 16.96</td>
</tr>
</tbody>
</table>

** - p ≤ 0.01, * - p ≤ 0.05

In group 1, the mean score on the scale “Emotional Awareness” was 9.32 points with a standard deviation of 5.51 points (59.12%), which corresponds to a low level. In group 2, this result was 12.61 points with a standard deviation of 5.05 points.
(40.04%), which corresponds to the average level. The difference was 3.07 points, and it was statistically significant ($T = 3.25, p \leq 0.01$). The identified difference indicates that the future physicians who do not tend to hide professional errors show a high awareness of the manifestations and ways of managing emotional states.

The mean score on the scale “Managing one’s emotions” in group 1 was 0.41 points with a standard deviation of 8.19 points, which corresponds to a low level. In group 2, this result was 5.8 points with a standard deviation of 6.45 points, which also corresponds to a low level. The difference was 5.11 points, and it was statistically significant ($T = 3.8, p \leq 0.01$). Although the future physicians in group 2 had a low level of managing their emotions, they still have a pronounced ability to control the manifestation of their emotions.

The mean score on the scale “Self-motivation” in group 1 was 6.83 points with a standard deviation of 6.11 points (89.45%), which corresponds to a low level. In group 2, this result was 9.38 points with a standard deviation of 5.11 points (54.47%), which also corresponds to a low level. The difference was 2.26 points, and it was statistically significant ($T = 2.1, p \leq 0.05$). This indicates that the future physicians in group 2 have advanced skills and techniques of self-motivation.

The mean score on the scale “Empathy” in group 1 was 8.29 points with a standard deviation of 5.93 points (71.53%), which corresponds to a low level. In group 2, this result was 12.5 points with a standard deviation of 2.91 points (23.28%), which corresponds to the average level. The difference was 4.47 points, and it was statistically significant ($T = 4.94, p \leq 0.01$). Thus, the results of the technique of N. Hall show significant differences in the empathy level between the study groups. Future physicians who are not inclined to hide their own mistakes have a more developed empathy, are able to put themselves in the place of another person and therefore they are more responsible to their professional activities and its possible impact on others.

The mean score on the scale “Managing the emotions of other people” in group 1 was 8.11 points with a standard deviation of 5.61 points (69.17%), which corresponds to a low level. In group 2, this result was 11.26 points with a standard deviation of 3.21 points (28.5%), which corresponds to the average level. The difference was 3.16 points, and it was statistically significant ($T = 3.5, p \leq 0.01$). A higher level of emotional competence in group 2 obviously contributes to the development of the ability to manage other people’s emotions in the respondents.

The mean score for the integrative index of emotional intelligence in group 1 was 32.74 points with a standard deviation of 22.06 points (67.37%), which corresponds to a low level of emotional intelligence. In group 2, this index was 51.61
points with a standard deviation of 16.96 points (32.86%), which corresponds to the average level. The difference was 18.39 points, and it was statistically significant ($T = 4.93, p \leq 0.01$). In general, physicians who tend to hide their professional mistakes have less developed social intelligence, which obviously has a negative impact on the level of their social consciousness, self-confidence, willingness to work systematically to correct their own shortcomings.

It should be noted that all components of emotional intelligence in the students of group 1 have medium and low results (94%). Therefore, according to the integrative indicator of emotional intelligence, which characterizes the level of emotional intelligence in general, the low quantitative data have been obtained. At the same time, only 18% of students (54% in group 1) demonstrate a low level of emotional intelligence in group 2. The average level of emotional intelligence is represented in 61% of students (40% in group 1). High level of emotional intelligence have been revealed in 21% of respondents (6% in group 1).

**Discussion**

The study has found that most of future physicians tended to hide professional mistakes. These results are higher than the average data for people in this age group (Çikrikci, Topkaya & Yılar, 2014; Schell, 2012; Pidbutskaya & Knysh, 2020). This indicates that specifics of activities in the medical field turns professional mistakes into a taboo subject, which, in turn, leads to the desire of future physicians to hide mistakes.

Analysis of emotional intelligence indicators demonstrates that most of future physicians have low and medium levels of emotional intelligence, which is generally typical for medical students (Abe, Niwa & Fujisaki, 2018; Sundararajan & Gopichandran, 2018; Gupta, Singh & Kumar, 2017). This is due to the prevalence in future physicians of the mental protective mechanisms such as rationalization and isolation of any affect, which leads to isolation of unpleasant and anxious emotional states.

In the group of future physicians who tend to hide professional mistakes, emotional intelligence scores were significantly lower, which confirms our initial hypothesis that the ability to recognize one's own mistakes and learn from them is associated with emotional maturity and willingness to accept and understand one's own emotions and emotions of other people.
Conclusions

During the study it has been determined that:

1) the vast majority of future physicians believe that professional mistakes should be hidden, which, in turn, does not contribute to their professional development;

2) the future physicians who tended to hide professional mistakes had low level of emotional awareness, ability to manage one’s emotions, self-motivation, empathy, ability to manage other people’s emotions;

3) the formation of a common-sense attitude to professional mistakes should take place in the context of the development of emotional intelligence, since it would promote a more conscious attitude of future physicians to professional activities and development of a more common-sense attitude to mistakes, and this poses new challenges for medical education to form emotional intelligence of future professionals in the medical field.

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