

EMOTIONS' CATEGORIZATION FOR A BETTER EDUCATION

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***Abstract.** Education can be enhanced via the application of the categorization method. Emotions' categorization has been well addressed by the scientific community. However, research on emotions carried out in different disciplines enriches the existing knowledge with new findings and novel scientific contributions. The research aims at analysing scientific literature on emotions' categories underpinning the elaboration of implications for educational practice. The method of categorization of the descriptive research is leveraged in this work for the characterisation of educational practice. Theoretical analysis allows concluding that emotions and education are linked. Emotions, being the innate part of an individual, drive the educational process. The educational process, built on the understanding of emotions as a cognition product, facilitates the development of individual's emotions. The educational process is implemented in three phases, namely teaching, peer-learning, and learning. Each phase of the educational process has its own objective upon the development of education actors' emotions. Organisation of only one or two phases of the educational process while omitting the other phase(s) leads to the imbalance of individual's emotions. Quality of education is influenced by education actors' emotions. Consequently, external and internal regulation of education actors' emotions within the educational process might impact the quality of education.*

***Keywords:** Biological, categorization, emotions, interdisciplinary, psychological, quality of education, social.*

Introduction

Quality of education has been one of the most debated issues in the world (Thinley, 2021). United Nations Organisation (UN) defines quality education as its fourth Sustainable Development Goal (SDG) (UN, 2022). Quality education means “to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” (UN, 2022). Quality education is shaped by many factors (Thinley, 2021):

- A standardized curriculum,
- High quality of teachers,
- Efficient learners,
- Appropriate resources,
- Capable leaders, and
- Supportive parents.

Each of these factors impacts quality education via its emotional component. Emotions are factors of both

- Quality education in general, and
- Elements of quality education in particular.

Factor impact can be regulated (Zascerinska, 2020). The impact of factors, e.g. emotions in the present research, can be increased or decreased according to the situation requirements (Zascerinska, 2020).

For organizing a better education based on a factor balance, the inter-connections between education actors’ emotions and the educational process have to be revised. Organization of a better education in general and quality education in particular can be done via the categorization method (McGarty, Mavor, & Skorich, 2015).

Emotions’ categorization has been well addressed by the scientific community. However, many researchers from different disciplines have been working on the emotion phenomenon, thereby enriching the existing knowledge with new findings and novel scientific contributions.

The aim of the research is to analyse scientific literature on emotions’ categories underpinning the elaboration of implications for educational practice.

The method of categorization of the descriptive research is leveraged in this work for the characterisation of educational practice.

Methodology of the Research

The present work is built on the use of the categorisation method. Categorization is a method deployed in the descriptive research (Kim, Sefcik, & Bradway, 2017). It should be pointed that descriptive research is traditionally applied for the characterisation of (Siedlecki, 2020)

- A population,
- Situation,
- Circumstance, or
- Phenomenon.

Moreover, the categorization method relates to qualitative descriptive studies (Kim, Sefcik, & Bradway, 2017).

In its most rudimentary form, categorization can be defined as the placement of entities in groups whose members bear some similarity to each other (Jacob, 2004).

The categorisation methodology proceeds in five phases (Bengtsson, 2016) as depicted in Figure 1.

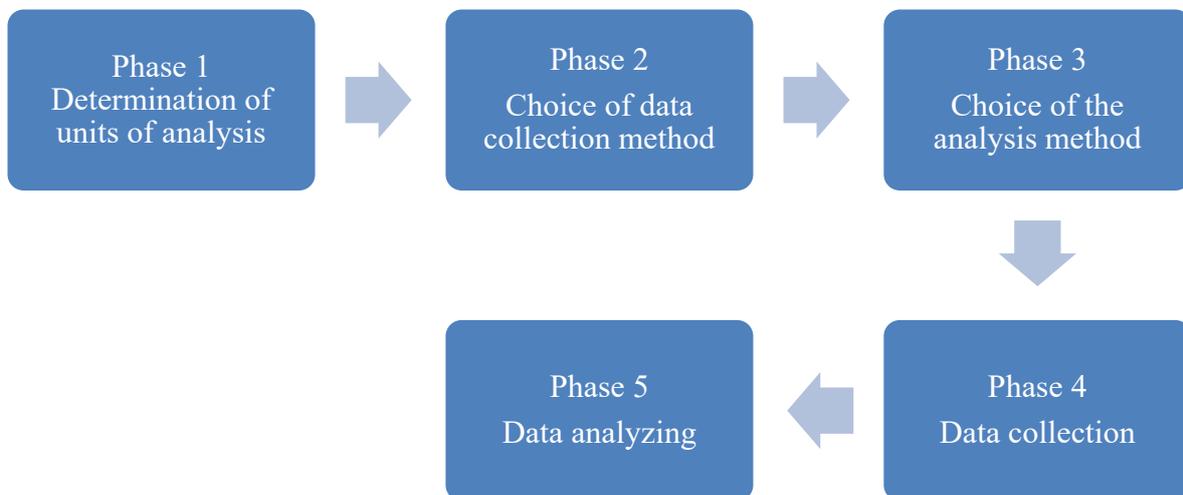


Figure 1 **Phases of the categorisation methodology** (by authors)

1. Determination of units of analysis:

The key issue in making this decision is to decide what the researcher is seeking to elucidate by the study (Patton, 2002). There are no established criteria for the size of a unit of analysis, neither the number of objects to study, nor the number of pages based on the written text or transcribed data (Bengtsson, 2016).

2. The choice of data collection method:

It is worth noting that the choice of data collection method affects the depth of the analysis (Bengtsson, 2016).

3. The choice of analysis method:

In all data analysis, regardless of whether it is within a positivist or naturalistic research tradition, the purpose is to organize and elicit meaning from the data collected and draw realistic conclusions (Polit & Beck, 2006). The categorization method implies the use of the deductive way.

4. Data collection:

For this work, all the published scientific papers are considered for online data collection.

5. Data analysing:

Literature review presents different opinions on emotions' concepts, procedures and interpretation (Bengtsson, 2016). The process of the data analysis is implemented in four main phases (Bengtsson, 2016) as depicted in Figure 2.

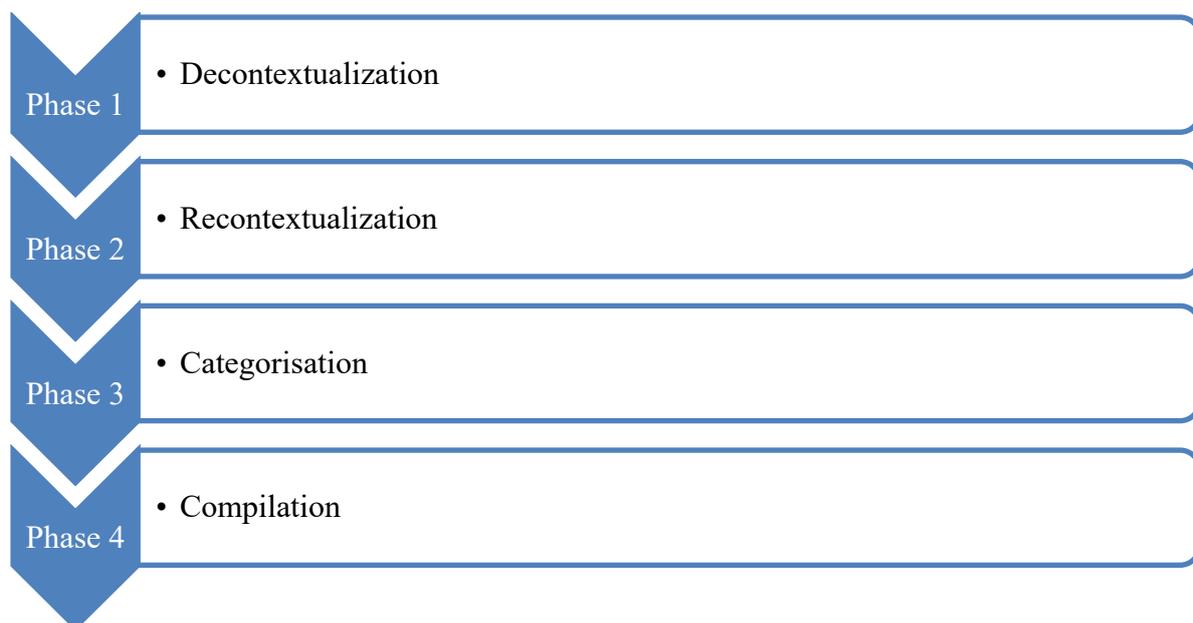


Figure 2 **Main phases of data analysis in the categorisation methodology** (by authors)

Each stage must be performed several times to maintain the quality and trustworthiness of the analysis (Bengtsson, 2016).

In the analysing process, human mistakes are always possible; these mistakes can be caused by fatigue, errors interpretation and personal bias (Bengtsson, 2016). It is the researcher's responsibility to maintain the quality of the process

by assuring validity and reliability throughout the entire study, as the results must be as rigorous and trustworthy as possible (Bengtsson, 2016). In a qualitative study, validity means that the results truthfully reflect the phenomena studied, and reliability requires that the same results would be obtained if the study were replicated (Morse & Richards, 2002). There is always a risk that different researchers draw dissimilar conclusions from the same data (Bengtsson, 2016). To increase the validity, at least two investigators should perform the analysis separately and then discuss their results and obtain consensus (Burnard, 1991, Graneheim & Lundman, 2004). This procedure is one form of triangulation (Bengtsson, 2016). To use different sources or methods for data collection are other ways to perform triangulations for the purpose of confirming the results (Catanzaro, 1988; Patton, 2002; Rolfe, 2006).

Phase 1 Decontextualization: The researcher must familiarize him or herself with the data, and he/she has to read through the texts to obtain the sense of the whole (Bengtsson, 2016). After that, texts can be broken down into smaller meaning units (Bengtsson, 2016). A meaning unit is the smallest unit that contains some of the insights the researcher needs, and it is the constellation of sentences or paragraphs containing aspects related to each other, answering the question set out in the aim (Catanzaro, 1988; Graneheim & Lundman, 2004).

Phase 2 Recontextualization: The original text is re-read alongside the list of meaning units (Bengtsson, 2016). The next step focuses on deleting the unimportant information that does not correspond to the aim of the study (Bengtsson, 2016).

Phase 3 Categorisation: Before the researcher can begin to create categories, extended meaning units must be condensed (Bengtsson, 2016). This entails that the number of words is reduced without losing content of the unit (Graneheim & Lundman, 2004). The depth of the meaning units determines the level at which the analysis can be performed (Bengtsson, 2016). In the categorization process, themes and categories are identified. Identified themes and categories should be internally homogeneous and externally heterogeneous, which means that no data should fall between two groups nor fit into more than one group (Krippendorff, 2004; Patton, 2002). There are no informal ways to describe specific strategies when categorization is performed (Bengtsson, 2016). However, all categories must be rooted in the data from which they arise (Bengtsson, 2016). Moving meaning units back and forth between categories provide progressive

development of the category outcome, and Post-it notes may be of help in this process (Bengtsson, 2016). Initially, several categories are often generated, but the number is later reduced (Burnard, 1991). How the researcher knows when the categorization is good enough depends on the aim of the study, and the categorization is finished when a reasonable explanation has been reached (Bengtsson, 2016).

Phase 4 Compilation: Once the categories are established, the analysis process begins (Bengtsson, 2016). For each category or theme, the researcher chooses appropriate meaning units presented in the text as quotations (Bengtsson, 2016). Regardless of the form of the analysis, the researcher can present a summary of themes, categories/sub-themes and sub-categories/sub-headings as a table to allow the reader to get a quick overview of the results (Bengtsson, 2016). As a final check, the researcher must consider how the new findings correspond to the literature and whether or not the result is reasonable and logical (Burnard, 1991, Morse & Richards, 2002).

Research Results

This part of our work is devoted to the categorisation of emotions into different groups from a range of scientific perspectives. In this work, the emotion phenomenon is investigated from the point of view of the biological, cognitive, artistic, psychological, and other perspectives.

To start with, we wish to stress that there is a common lasting scientific discussion with the focus on the nature of emotions, namely revealing if emotions are born or made.

The biological approach considers that the innate, possibly genetic mechanisms of emotions' origin is applicable (Pyrev, 2019). According to this approach, emotions may have neurophysiological foundations and emerge from the neural processes in the reticular formation of the medulla oblongata (Pyrev, 2019). What is important for education here is that emotion itself has an involuntary effect on the cognitive apparatus of the human psyche and its motor skills (Pyrev, 2019). It means that cognitive structures do not directly invoke emotions (Pyrev, 2019). Moreover, the emergence of basic emotions triggered by innate stimuli is generally not consciously recognised by an individual (Pyrev, 2019). Table 1 shows emotions' categorisation from the biological perspective.

Table 1 Emotions' categorisation from the biological perspective (the authors)

Perspective	Biological
Emotions	Innate
Synonyms used in biological scientific literature	Genetic Born Primary

Analysis of the neuroscience literature shows the use of basic emotions (Celeghin, Diano, Bagnis, Viola, & Tamietto, 2017) and similar as illustrated in Table 2.

Table 2 Emotions' categorisation from the neuro-scientific perspective (the authors)

Perspective	Neuro-science
Emotions	Basic emotions
Synonyms used in neuroscientific literature	Basic classes of emotions Major emotions

Interdisciplinary studies on emotions revealed that emotions are a brain function (Singh & Singh, 2011). It is the brain and nervous system which run the rest of the body and all its activities, including thinking and action in all their forms, not the mind (Singh & Singh, 2011). Mind is just the sum total of all brain functions (Singh & Singh, 2011). Brain and Mind, though connected concepts, are not synonyms (Singh & Singh, 2011). Like eye is the structure, sight its function (Singh & Singh, 2011). They should not be used interchangeably (Singh & Singh, 2011). Brain is the producer, mind its product (Singh & Singh, 2011). Without a brain, there is no mind (Singh & Singh, 2011). Mind is the product of brain activities (Singh & Singh, 2011). Table 3 highlights emotions' categorisation from the interdisciplinary perspective.

Table 3 Emotions' categorisation from the interdisciplinary perspective (the authors)

Perspective	Interdisciplinary
Emotions	Brain function

In the cognitive approach, emotions are defined as “secondary” and dependent, since they act as an aftereffect of cognitive evaluation (Pyrev, 2019) as emphasized in Table 4.

Table 4 **Emotions’ categorisation from the cognitive perspective** (the authors)

Perspective	Cognitive
Emotions	Secondary
Synonyms used in cognitive scientific literature	Dependent

The cognitive process takes significantly longer to evaluate emotions in comparison to the emotional process (Pyrev, 2019).

The cognitive perspective also considers emotions as a cognition product. Table 5 describes emotions as a cognition product.

Table 5 **Emotions’ categorisation from the cognitive product perspective** (the authors)

Perspective	Cognitive product	
Emotions	Unconscious	Conscious

The social approach to emotions discloses that there are socially banned negative emotions (anger, rage, etc) (Pyrev, 2019). Table 6 points out the categorisation of emotions from the social perspective.

Table 6 **Emotions’ categorisation from the social perspective** (the authors)

Perspective	Social		
Emotions	Socially banned	Socially accepted	Socialised
Emotions classification	Anger Rage, etc	Joy, Love, Fear, etc	All possible emotions

It is worth noting that, in psychology and also education, the emphasis has always been on the analysis of a separate emotion. Another finding based on the scientific literature analysis within this work is that emotions were grouped in most cases into positive and negative emotions only. The term “neutral emotions” have recently been introduced (Ahrens & Zašcerinska, 2014).

In the psychological approach, emotions are categorised into three groups as demonstrated in Table 7.

Table 7 Emotions' categorisation from the psychological perspective (the authors)

Perspective	Psychological		
Emotions	Negative (Skiba, Maruszewska, Talarowska, & Gałeccki, 2019)	Neutral (Barnes, 2015)	Positive (Skiba, Maruszewska, Talarowska, & Gałeccki, 2019)
Emotions classification	Hostile Irritable Ashamed Guilty Distressed Upset Scared Afraid Jittery Nervous	Surprise Indifference	Attentive Active Alert Excited Enthusiastic Determined Inspired Proud Interested Strong

All the three types of emotions – positive, neutral, and negative – are important for individual's (learner's) development.

Although they are not pleasant to experience, negative emotions really are necessary for a healthy life (Ackerman, 2019). This is true for two big reasons (Ackerman, 2019):

- Negative emotions give us a counterpoint to positive emotions; without the negative, would the positive emotions still feel as good?
- Negative emotions serve evolutionary purposes, encouraging us to act in ways that boost our chances of survival and help us grow and develop as people.

Seven reasons why negative emotions are not all that negative (Kennedy, 2021):

1. They are normal.
2. They have a positive intention.
3. They are a warning signal.
4. They inspire action.

5. They allow you to live wholeheartedly.
6. They provide release.
7. They build resilience.

There is a good reason for each of the basic emotions, both positive and negative (Kennedy, 2021):

- Anger: to fight against problems,
- Fear: to protect us from danger,
- Anticipation: to look forward and plan,
- Surprise: to focus on new situations,
- Joy: to remind us what’s important,
- Sadness: to connect us with those we love,
- Trust: to connect with people who help, and
- Disgust: to reject what is unhealthy.

Emotional neutrality refers to rational decision-making (Halton, 2021). In education, neutral emotions relate to quasi-emotions (Ahrens, Zascerinska, Filimonova, & Bikova, 2023).

The art perspective refers to the conventional game “make-believe” (Dos Santos, 2017). The individual’s experience in the game “make-believe” is called “what-it-is-like-ness” and defined as “second-order” beliefs or quasi-emotions (Dos Santos, 2017) as disclosed in Table 8.

Table 8 Emotions’ categorisation from the art perspective (the authors)

Perspective	Art
Emotions	Quasi-emotions

From the art perspective, the emotions are made (Barrett, 2018).

Education means the artificial development of the individual (Vygotsky, 1982-84). Focusing on the term “artificial” in the Vygotsky’s definition of education, we can link “artificial” with art (theatre, films, paintings, etc). Due to the common basis of the word “art” and “artificial”, the concept of quasi-emotions is applicable to education as well. In comparison to the art, quasi-emotions in education are assymertical, in flux at various stages and can be interpreted differently at different points in time (Robbins, 2007).

Emotions from the educational perspective are categorised in Table 9.

Table 9 **Emotions' categorisation from the education perspective** (the authors)

Perspective	Education
Emotions	Developed
Synonyms used in educational scientific literature	Acquired

It has to be stressed that by acquisition a subconscious process is meant (Zaščerinska, 2011b). For example, language acquisition, opposed to learning, is similar to that by which children acquire their first language (Kramina, 2000).

It is also worth noting that the prevailing emotional culture claims that feeling good should be always privileged (Bachler, Segovia-Lagos, & Porras, 2023). The emotional culture of feeling good can become an obstacle to learning, generally because positive emotions hamper a slow and reflective analysis of the learning content (Anaya-Durand & Anaya-Huertas, 2010).

Discussion

How can our categorisation exercise contribute to a better education? This is the question we wish to look for an answer.

To start building our solution, we wish to emphasize that we follow the advice by John Dewey: "...never choose either/or, when you can choose both/and" (Jurist, 2019).

Taking the John Dewey's recommendation, we base our work on the methodology entitled "the development of the system of the external and internal perspectives" (Zaščerinska, 2011b). Table 10 shows the implementation of the educational process within the methodology of the development of the system of the external and internal perspectives.

As Table 10 shows the educational process proceeds in three phases (Zaščerinska, 2011a):

- Teaching in Phase 1,
- Peer-learning in Phase 2, and
- Learning in Phase 3.

Table 10 The implementation of the educational process within the methodology of the development of the system of the external and internal perspectives
(the authors)

External perspective	The system of the external and internal perspectives	Internal perspective
Teaching	Peer-learning	Leaning

Table 11 Emotions in the implementation of the educational process within the methodology of the development of the system of the external and internal perspectives
(the authors)

Phase	1	2	3
Perspective	External perspective	The system of the external and internal perspectives	Internal perspective
	Teaching	Peer-learning	Leaning
Biological, art and neuro- science	Born	Made	Acquired
Cognition product	Unconscious	Quasi-conscious	Conscious
Biological, art and cognitive	Primary	Quasi-emotion	Secondary
Social	Socially banned	Socially agreed	Socialised
Psychological	Negative	Neutral	Positive
Educational	Existing emotion	Quasi-emotion	Newly developed emotion

It is worth highlighting that, in order to avoid any delay in learning and increase the learners' involvement into the educational process, it was opined that for learners the emotions, they experience, are not important but the crucial for learners is the emotions' change (Gryzunov & Gryzunov, 2022). "Emotional swing", a change of positive and negative emotions, was illuminated (Gryzunov & Gryzunov, 2022). It should be emphasized that, negative emotions are necessary for a healthy life (Ackerman, 2019). Based on the finding that teaching is to be started with making learners' dissatisfied with their existing

experience (Stepans, 2005), learners' emotions proceed in the educational process (Zascerinska, 2023):

- From negative emotions in Phase 1 Teaching,
- Through neutral emotions in Phase 2 Peer-learning, and
- To positive emotions in Phase 3 Learning.

We wish to emphasize that the leverage of negative emotions in Phase 1 Teaching should be relevant to learners' dissatisfaction with their existing knowledge, skills, and competence. The other impacts of the negative emotions in teaching should be avoided.

Table 11 presents the alignment of our categorized emotions to the educational process built on the basis of the methodology of the development of the system of the external and internal perspectives.

Our assumption is that if teachers organise the educational process and align their and learners' emotions in the proposed way as shown in Table 11, then emotions are harmonised. Harmonic emotions positively influence learners' engagement into the educational process. Hence, the active participation of learners in the educational process facilitate education's becoming better and of a higher quality.

Conclusions

The theoretical analysis allows concluding that emotions and education are inter-linked. Emotions, being the innate part of an individual, drive the educational process. The educational process, built on the understanding of emotions as a cognition product, facilitates the development of individual's emotions.

Implications for the quality of education imply the use of the educational process that is implemented in three phases, namely teaching, peer-learning, and learning. Each phase of the educational process has its own objective in regard to the development of education actors' emotions. Organisation of only one or two phases of the educational process while omitting the other phase(s) leads to the imbalance of individual's emotions.

Quality of education is influenced by factors or, in the present work, education actors' emotions. Consequently, the balance between the external and internal regulation of education actors' emotions within the educational process

might increase the quality of education. For reaching the balance between the external and internal regulation of education actors' emotions, the phase entitled "The system of the external and internal perspectives" as the in-between phase in the methodology of the development of the system of the external and internal perspectives has to be implemented. In the educational process, peer-learning serves as a means of a balanced regulation of education actors' emotions. It is worth stressing that the use of all the three perspectives, namely external factors in Phase 1, factors related to the system of the external and internal perspectives in Phase 2, and internal factors in Phase 3, for the regulation of factor impact have to be taken into consideration.

The categorization method is useful for identifying an emerging phenomenon or a trend in a scientific discipline. Categorization of emerging phenomena or trends might look different and unnecessary in comparison to the existing ones. The use of different approaches and methodologies of analysis to categorization can help realize a new aspect of the well-established phenomena or trends.

The use of interdisciplinary research can provide a novel perspective on emerging phenomena or trends under categorization.

The present work has some limitations. The limitation refers to the inter-connections between the perspectives of biology, neuro-science, cognition, social studies, art, psychology, education on emotions. If the scientific contribution of other sciences were known, then, the results of this work could be enhanced. Another limitation is the use of the methodology of the development of the system of the external and internal perspectives for the construction of the educational process and the emotions' embedding into the educational process.

In further research, empirical studies of emotions of education actors (teachers and learners) in the educational process, based on three phases, namely teaching, peer-learning, and learning, would be of a great interest for scientific community. Also, comparative studies would be of a great value for researchers.

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References

- Ackerman, C.E. (2019). *What are Positive and Negative Emotions and Do We Need Both?* Available at https://positivepsychology.com/positive-negative-emotions/?utm_content=cmp-true
- Ahrens, A., Zascerinska, J., Filimonova, D., & Bikova, A. (2023). How Emotions Are Developed: Insights From Vygotsky'S and Leontiev's Works. *Society. Integration. Education. Proceedings of the International Scientific Conference, Volume II, May 26th, 2023*, 232-242. doi: <https://doi.org/10.17770/sie2023vol2.7116>
- Ahrens, A., & Zaščerinska, J. (2014). Students' Attitude to Interdisciplinary Research. *Society, Integration, Education. Proceedings of the International Scientific Conference, Volume I: Higher Education Institutions Pedagogy, School Pedagogy, Pre-School Pedagogy*, 13-23. Rēzekne: Rēzeknes Augstskolas Izdevniecība.
- Anaya-Durand, A., & Anaya-Huertas, C. (2010). Motivar para aprobar o para aprender, Estrategias de motivación del aprendizaje para los estudiantes. *Tecnol. Ciencia. Educ.* 25, 5–14.
- Bachler, R, Segovia-Lagos, P, & Porras C. (2023). The role of emotions in educational processes: the conceptions of teacher educators. *Front. Psychol.* 14, 1145294. doi: 10.3389/fpsyg.2023.1145294.
- Barnes, J. (2015). *Comparing the performance of knowledge-based and machine-learning approaches for the detection of emotions in an English Text.* Available at <http://hdl.handle.net/10230/24828>
- Barrett, L. F. (2018). *How emotions are made.* Pan Books.
- Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open, Volume 2*, 8-14. doi: <https://doi.org/10.1016/j.npls.2016.01.001>.
- Burnard, P. (1995). Interpreting text: an alternative to some current forms of textual analysis in qualitative research. *Social Sciences in Health, 1*, 236-245.
- Catanzaro, M. (1988). Using qualitative analytical techniques. N.F. Woods, M. Catanzaro (Eds.), *Nursing: research theory and practice.* The CV Mosby Company, St.Louis, pp. 437-456.
- Celeghin, A., Diano, M., Bagnis A., Viola, M., & Tamietto, M. (2017) Basic Emotions in Human Neuroscience: Neuroimaging and Beyond. *Front. Psychol.* 8, 1432. doi: 10.3389/fpsyg.2017.01432.
- Dos Santos, M. (2017). Walton's Quasi-Emotions Do Not Go Away, *The Journal of Aesthetics and Art Criticism, Volume 75*, Issue 3, 265–274. doi: <https://doi.org/10.1111/jaac.12385>
- Graneheim, U.H. & Lundman, B. (2004). Qualitative content analysis in nursing research: concepts, procedures and measure to achieve trustworthiness. *Nurse Education Today, 24*, 105-112.
- Gryzunov, O.V. & Gryzunov, V.V. (2022). Method for Managing Students' Emotions Based on Morphological Analysis. *Open education Educational Environment V. 26*, № 3. doi: <http://dx.doi.org/10.21686/1818-4243-2022-3-35-45>.

- Halton, C. (2021). Emotional Neutrality. *Economics. Behavior Economics*. Retrieved from: <https://www.investopedia.com/terms/e/emotional-neutrality.asp>
- Jacob, E.K. (2004). Classification and Categorization: A Difference that Makes a Difference December 2004. *Library Trends* 52(3). Retrieved from: <https://www.ideals.illinois.edu/items/1778>
- Jurist, E. (2019). Book Review. *Journal of Theoretical and Philosophical Psychology*. 2019, Vol. 39, No. 3, 193–198. doi: <http://dx.doi.org/10.1037/teo0000098>
- Kennedy, T. (2021). *Why Negative Emotions Aren't That Bad (And How to Handle Them)*. Available at <https://www.lifehack.org/articles/communication/how-handle-negative-emotions.html>
- Kim, H., Sefcik, J.S., & Bradway, C. (2017). Characteristics of Qualitative Descriptive Studies: A Systematic Review. *Res Nurs Health*. 2017 Feb;40(1):23-42. doi: 10.1002/nur.21768.
- Kramiņa, I. (2000) *Lingo – Didactic Theories Underlying Multi – Purpose Language Acquisition*. University of Latvia.
- Krippendorff, K. (2004). *Content analysis: an introduction to its methodology*. Sage Publications Inc., Thousand Oaks, California (2004).
- McGarty, C., Mavor, K.I., & Skorich, D. (2015). Social Categorization. *International Encyclopedia of the Social & Behavioral Sciences*, Elsevier, 186–191, doi:10.1016/b978-0-08-097086-8.24091-9.
- Morse, J.M. & Richards, L. (2002). *Read me first for a user's guide to qualitative methods*. Sage Publications Inc., Thousand Oaks, California (2002)
- Patton, M.Q. (2002). *Qualitative, research & evaluation methods*. Sage publications Inc., Thousand Oaks, California.
- Pyrev, E. A. (2019). Criticism of cognitive theories of the origin of emotions. *Psychology in Education, vol. 1*, no. 3, 258–265. doi: 10.33910/2686-9527-2019-1-3-258-265.
- Polit, D.F., & Beck, C.T. (2006). *Essentials of nursing research methods, appraisal, and utilization*. Lippincott Williams & Wilkins, Philadelphia, PA.
- Robbins, D. (2007). Vygotsky's and Leontiev's Non-classical Psychology Related to Second Language Acquisition. International Nordic-Baltic Region Conference of FIPLV *Innovations in Language Teaching and Learning in the Multicultural Context*, 15-16th June, 2007, Riga, Latvia 2007, 49-52.
- Rolfe, G. (2006). Validity, trustworthiness and rigour: quality and the idea of qualitative research. *Journal of Advanced Nursing*, 53(2006), 304-310.
- Siedlecki, S. L. (2020). Understanding Descriptive Research Designs and Methods. January 2020, *Clinical nurse specialist CNS* 34(1), 8-12. doi: 10.1097/NUR.0000000000000493.
- Singh, A.R. & Singh, S.A. (2011). *Brain-mind dyad, human experience, the consciousness tetrad and lattice of mental operations: and further, the need to integrate knowledge from diverse disciplines*. *Mens Sana Monogr*. 2011 Jan; 9(1), 6-41. doi: 10.4103/0973-1229.77412.

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- Skiba, A., Maruszewska, P., Talarowska, M., & Gałecki, P. (2019). Emotions as a state and as a trait in people with depressive disorders. *Postepy Hig Med Dosw*; 73, 721-728. doi: 10.5604/01.3001.0013.6381
- Stepans, J. (2005). *The Conceptual Change Model*. Saiwood Publications. Retrieved from <http://www.saiwood.com/conceptual.htm>
- Thinley, P. (2021). Elements of Quality Education. *Conference: English for Academic Presentation*. Retrieved from: https://www.researchgate.net/publication/355167115_Elements_of_Quality_Education
- UN DESA. (2022). *The Sustainable Development Goals Report 2022 - July 2022*. New York, USA: UN DESA. © UN DESA. Retrieved from: <https://unstats.un.org/sdgs/report/2022/>
- Vygotsky, L. (1982-84). *Sobranie sochinenii [Complete Works], Vols. I-VI*. Moscow, Pedagogika.
- Zascerinska, J. (2020). Post-COVID-19 University Governance in Germany. *Education Reform: Education Content Research and Implementation Problems, Volume 2*, 7-16. Rezekne: Rezekne Academy of Technologies. doi: <https://doi.org/10.17770/er2020.2.5336>
- Zascerinska, J. (2023). *There is Always Sunshine After Rain: Alignment of Learners' Emotions to the Educational Process*. Retrieved from <https://edl-erasmus.site/blog/there-is-always-sunshine-after-rain-alignment-of-learners-emotions-to-the-educational-process/>
- Zašcerinska J. (2011a). How to Teach Content: Existing Concepts and Prospects for Development. In: Stasys Vaitekūnas (Ed), Association for Teacher Education in Europe ATEE Spring University 2011 *Changing Education in a Changing Society*, Volume 1, pp. 134-149. Klaipeda University, Lithuania. ISSN 1822-2196.
- Zašcerinska, J. (2011b). Language Acquisition and Language Learning: Developing the System of External and Internal Perspectives. In: *Zuģicka I., sast. Proceedings of the 52nd International Scientific Conference of Daugavpils University* (pp. 412-417). Daugavpils: Daugavpils Universitātes Akadēmiskais apgāds „Saule”.