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QUALITY AS A TOOL FOR MANAGING EDUCATION

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ABSTRACT

Quality is linked to the need by management to optimise the conflicting requirements of minimum time and resources and maximum quality. This study analyses the relationship between four main quality definition groups and a behavioural model and education management tasks. Cognitive neurobiology capabilities and the use of the archetype of quaternality are shown. Given the unity of education as knowledge, skills, and attitudes, the importance of art and philosophy is assessed and the need to include attitudes, values, and morality as an essential part of quality culture is demonstrated. Successful quality culture development can be achieved through a harmonised use of all quality definition groups and by respecting values. The need to focus on the future is studied in relation to the challenges of digitalisation and globalisation. There are opportunities to modify the quality standards system based on the integration of context, input, processes, results, and feedback into the quality management system. This investigation aims to start the revision of quality definitions and concepts and show ways for the future development of an educational system and its quality evaluation. The study question is: what are the necessary improvements to the concept of quality for its successful use in management?

Keywords: *higher education, pedagogy, philosophy, quality assurance, society*

Introduction

The key solution to several emerging challenges in society lies in the provision of quality higher education. This is because the driving force for change in society is now concentrated in universities. A recent review of the problems of society has been done (Bičevskis, 2021; Līsmans, 2022; Podnieks, 2021; Saskinds, 2021). A workless world (Saskinds, 2021) reveals changes in social structure.

A society without the world, described in an extensive review with several references (Bičevskis, 2021), shows the victory of ‘society’ (technologies) over the ‘world’ (nature). Biophilosophy (Bičevskis, 2021) marks the way to the artificial, technical world but also points to the

possibilities for the transformation of society to a human-friendly direction using education.

The description of education as a provocation (Līsmans, 2022) shows the need to change the fundamentals of education, including the abandonment of 'competence education'. It is necessary to review the education system, starting with its goals and its evaluation system – including the concept, definition and use of quality. The key objectives of education should be changed and the quality culture should be reviewed. Changes in ideologies (Bičevskis, 2021) and the increased use of artificial intelligence (AI) require serious reforms to avoid crises and revolutions (European Commission, 2020; Saskinds, 2021). Reforms in society should start with the transformation of education.

The development of science until now has been characterized by a gradual process of changes of principles, models, and paradigms (Andersen et al., 2006; Prigogine & Stengers, 1997; Siliņš, 1999; Popper, 1971). This process is finished (Bičevskis, 2021; Līsmans, 2022; Saskinds, 2021). The coming workless society and the fundamental change of the social structure, including education and ideology, are linked to singularity in the development of AI (Barrat, 2013; Bostrom, 2014). The friendliness of AI to human society, based on appropriate scientific developments, should solve the main problems of the future for society, but the creation of such an AI is a highly dangerous and complicated task for science.

The combination of physics and psychology can expand the limits of human possibilities and allow mankind to overcome crises in science and solve social problems. A comprehensive crisis in science is related to difficulties in absorbing previously accumulated knowledge (Wigner, 1970). Physics and psychology together with philosophy allow us to understand such fundamental concepts as time and will as the result of *spontaneous loss of symmetry* (SLS) (Smolin, 2013) and to meet the challenges. The revision of education and of the theory of cognition (Kants, 1988) is possible using modelling (Podnieks, 2021; Dzelme, 2020). Modelling allows us to understand consciousness by the complex use of psychology, including cognitive neurobiology (an understanding of the will and the sense of life), physics (an understanding of time and of the structure of the world) and other related sciences.

An assessment of the various systems of views needed for society and its education system are summarised in a review about the task of how to be conservative (Rusanovs & Skutele, 2021; Skrūtons, 2021). Moreover, solutions for development are proposed for higher education (Dzelme, 2007).

The education system is responsible for the maintenance and use of existing knowledge, skills and attitudes and for their development. Motivation of people and creation of relevant attitudes has become increasingly

important for sustainable development (Dzelme, 2018b; Kantane et al., 2015; Tisenkopfs, 2010). The use of art and philosophy is the leading means of solving the challenges of inclusion and motivation.

The main problems of education, including its aims and the assessment of its quality, are linked with human needs, behaviour and the structure of the psyche. The fundamental human need for social contact was developed during the creation of humanity, but digitalisation has increased the role of virtual contact and forced a significant change in the psychosocial mechanisms built into traditions and intergenerational experiences. Changes create tension, especially for youth. According to the World Health Organization, 20% of young people face mental health problems (Multinclude, 2021).

All human needs (Maslow, 1986) should be met, with a focus on the highest, namely ideological and creative, levels (belonging, recognition, self-fulfilment and transcendence) since ensuring the lowest levels (physiological needs and security) is relatively easy. The education system must provide an understanding of beliefs, rules of behaviour, morality and the sense of life. Humanities together with cognitive neurobiology (Graziano, 2019) and social and natural sciences should provide methodologies for education to ensure morality and to exclude deviant behaviour (Bičevskis, 2021; Vilks, 2001).

Value education and art create social stability (Klein et al., 2021; Līsmans, 2022). The right balance between chaos and order (Prigogine & Stengers, 1997) must be supported by ideology, using myths (Dzelme, 2018b; Veinbergs, 1988) and scientific ethics. Appropriate education and ideology, created by philosophy and supported by art, must stop the destructive atomization of society (Bičevskis, 2021; Tumans, 2014).

The present gives us the last chance to start the implementation of the transformation of education. It is necessary to revise all education and research systems so as to analyse major principles and concepts, such as quality, and to establish a new, comprehensive approach to education which must include the use of humanities, natural and social sciences and art and philosophy.

The aim of this investigation is to start a revision of the main concepts of education and to show ways for the future development of the system of education and its quality evaluation. The question of this study is whether it is possible to transform the current concept of the quality of education in line with the needs of future education management.

Methodology

The challenge to methodology is how to make it possible to transform the current concept of quality of education in line with the needs of future

education management. Methodology should indicate the path by which it is possible to review educational objectives and the possibilities for achieving them, as defined by the concept of quality. High quality is often referred to as the objective of education, but the concept of quality itself remains ambiguous. Similarly, there are still many questions about the relationship between quality and decision-making. Traditional approaches will no longer fit in the future (Līsmans, 2022), so all the basics about the concept of quality and its use and the whole picture need to be reviewed to find the right solution in new circumstances. The use of modelling and philosophical generalisation methodology enables a review of the concept of quality, starting with the goal of assessing quality of cognition and its results.

The main method used is a comparison and syntheses of different approaches. The sample for investigation and analysation is various literature sources from the humanities as well as social and natural sciences (Dzelme, 2020; Haken, 1988; Podnieks, 2009; Prigogine & Stengers, 1997), with attention paid to artificial intelligence (AI).

Interrelations between different models from psychology (Graziano, 2019; Jungs, 2009) and other sciences are used to show the common features of education processes and other human activities. Modelling and a comparison of methods, including a strengths, weaknesses, opportunities, and threats (SWOT) analysis, are used to understand and implement the concept of quality and to make recommendations for the improvement of quality assurance of higher education.

The methods of philosophy, including biophilosophy (Bičevskis, 2021), allow for a gathering of the achievements of various sciences and their successful application for the performance of tasks of educational development and evaluation (Līsmans, 2022; Saskinds, 2021). Modelling serves as the main methodological principle and as a foundation for an understanding of key concepts, starting from the basis of life and cognition.

It is possible to link the concept of quality as a tool for evaluation and management with modelling, including the basic complementary models of the world. The proposed methodological approach allows us to create an integral, holistic view of society and education and to answer to the research question of this investigation.

The design of the methodology to be used is based on an application of questions, an assessment of information and an evaluation and use of the results obtained under varying circumstances. The conceptions developed by analytical psychology (Jungs, 2009) regarding the structure of the psyche – mainly the quaternity archetype – as well as the connection of these conceptions with education and cognition are used to clarify and link the concept of quality with cognition and education. Four methodological principles of design are used to study quality, education and cognition:

1) the combined principle of existence, 2) the principle of minimalism, 3) the principle of complementarity, and 4) the principle of historicity (Dzelme, 2018a).

This investigation proposes an approach to the integral, holistic model of the system of education and the concept of quality that is valid for future challenges. Our approach shows how to combine all the main parts for an evaluation of changes in education. A comparison of different models is used as the main method for investigation. The proposed modelling of the world tends to include the whole ecosystem – nature together with society and its education system (Dzelme, 2020). The principles of existence, minimalism, complementarity and, mainly, historicity (Dzelme, 2018a) allow us to create a design of methodology and to answer the research question about the new concept of quality as a tool for the management of future education.

Results

Historicity

In response to the study question and using the principle of historicity, it is necessary to review the historical development of cognition possibilities and quality as a means of evaluating cognitive results using the results of studies of consciousness as a cognitive instrument. According to the principle of historicity, a return from society to the world (Bičevskis, 2021) must start with an understanding of time, space and life. The next step is the use of modelling as a basis for understanding life (Godfrey-Smith, 2021), consciousness (Graziano, 2019; Kandel, 2009) and cognition (Kants, 1988; Podnieks, 2021).

Causality, symmetry and the existence of quantum are foundations of the world model (Smolin, 2013). Time, events, existence and the structure of space are based on SLS (Smolin, 2013). SLS created an initial deviation from the equilibrium – the Big Bang. Then quantum interactions created space and different quasi-static combinations of interacting quanta, which together form stars, planets and life. Life is the ability of randomly formed quasi-static structures to copy their structure within certain limits. The development (evolution) of life is based on the ability to create and use action models to increase the probability of surviving and spreading (breeding). Then life created the ability to build, store and use action models both in the psyche and outside the psyche as culture.

The existence of the psyche and consciousness requires the creation of a sense of life as has been pointed out in an extensive review about society without the world (Bičevskis, 2021), where the main methodological problems of cognition are described. The review justifies linking ideology,

morality and education to basic principles of physics and psychology as has been predicted by mathematics (Penrose, 1994; Podnieks, 2021; Wigner, 1970).

The natural environment with its biological feedback system will be replaced by a technologically created environment in which balance must be maintained mainly by AI. All human activities and professions will reduce to the performance of mutual services (Bičevskis, 2021). Education and art must build a new worldview and create an understanding of the goals and meaning of life in this new society without the world (Bičevskis, 2021). The basic principles for the evaluation of education and ideology are investigated using the methodology proposed by philosophy (Rusanovs & Skutele, 2021; Skrūtons, 2022).

Quality, Quaternicity, Needs, and Purposes

According to the definition used in the European standards and guidelines (ESG), quality is fitness for purpose (European Association for Quality Assurance in Higher Education [ENQA] et al., 2015). The four main purposes of higher education mentioned in ESG are preparing students for active citizenship, for their future careers (their employability), to support their personal development, to create a knowledge base and to stimulate research and innovation. It is necessary to involve other definitions of quality and to link all alternative definitions with purposes, the needs of society and the main social and psychological issues. This approach can give an understanding of all new problems and challenges emerging with digitalisation and transfer to a workless world (Saskinds, 2021).

Preparing students for active citizenship and supporting their personal development are the most unclear and complicated purposes of higher education, and they are linked to attitudes, including responsibility and autonomy. Learning should combine knowledge, skills and attitudes, which are defined as the content of education (Latvian parliament, 1998). Attitudes and morality must create stability of society for sustainable development. Previous generations are no longer able to create a stable enough basis for the moral education of the young generation because the life experiences of the two generations differ greatly. Previous generations do not have enough high authority. The society, the state and the education system must participate actively to solve the problem of attitude. An evaluation of quality and learning outcomes must be linked with all the purposes necessary for sustainable development.

Several official steps have been taken in Latvia, starting from changes in the constitution and including changes to laws and governmental regulations, to create support for attitudes and morality. An understanding of the different concepts used in education is still unclear.

SWOT Analysis

An effective model for the analysis of the main results and learning outcomes of an education system is based on the theory of emotions (Dzelme, 2018b) and is linked with quality assurance (Van Damme, 2004), SWOT analysis, issues of sustainable development (Dzelme, 2007) and democracy and social ecosystems (see Table 1). Four groups of the quality definitions (ENQA et al., 2015; Van Damme, 2004) are shown in Table 1. Table 1 and all other tables in this article were created by author.

Table 1. Quality Definitions

Approach Environment	Subjective	Objective
Inner	Fitness for purpose	Standards; zero mistakes; benchmarking
Outer	Clients (students, employers, society, authorities, professional organizations, and trade unions)	Achievements; ratings; assessments (academic, professional and artistic)

Psychology and Purposes of Higher Education

The four main parts of the personality and the quaternicity archetype used in analytical psychology (Crick, 1995; Graziano, 2019; Jungs, 2009; Kandel, 2009) could be linked with the four different relations with the inner and outer environment and subjective and objective approach to interactions represented in the psyche. The model of the quality criteria is shown (see Table 2) together with the purposes of higher education (ENQA et al., 2015).

Table 2. Purposes, Quaternicity Archetype and Quality Definitions

Approach Environment	Subjective	Objective
Inner	Supporting students' personal development *(morality)* Present (feelings) Fitness for purpose	Preparing students for future careers and the labour market *(employability)* Logic (mind, conscience) Standards
Outer	Preparing students for active citizenship *(Democracy)* Future (intuition) Clients	Creating a broad advanced knowledge base and stimulating research and innovation *(Science)* Emotion (attitudes, values) Achievements

Human Needs

All purposes are linked with universal human needs (Maslow, 1986) and purposes of education (see Table 3). Quality assurance is also linked with a SWOT analysis.

Table 3. Human Needs, SWOT, Purposes, Quaternicity Archetype and Quality Definitions

Approach	Subjective	Objective
Environment		
Inner	Belonging Strength (development reserves and possibilities) *(Morality)* Present (feelings) Fitness for purpose	Safety and physiological needs Weaknesses (obstacles for development and punishment for mistakes) *(Employability)* Logic (mind and conscience) Standards
Outer	Transcendence and self-fulfilment Opportunities (possibilities to realize development) *(Democracy)* Future (intuition) Clients	Recognition Threats (punishment for low ratings and low achievements) *(Science)* Emotion (attitudes and values) Achievements

Psyche

The foundation of the psyche is a set of hierarchically related, overlapping, interacting action models working in parallel (Jungs, 2009). Each pattern of action and the psyche can be described in general using a breakdown into four parts (Jungs, 2009): feelings, intuition, the mind and attitudes. The model of the psyche, represented schematically in Table 4, can be used to slightly reshape and link to the modelling approach:

1) present: an external perception-based image (pattern) that combines the feelings and signals collected from the external and internal environment in the image of an associated present pattern (using interpolation, symmetry (invariants in space and time) and association);

2) future: an image (a model of the future) created by internal associations designed by extrapolating the fragments of past images to the possible future using associations and looking for potential future models associated with images (invariants, 'symbols') that have been activated internally (through emotions and related needs);

3) logic: an internally guided series of operations, actions ('marked' with symbols) capable of joining and combining the images of the present and the future to connect the state of the present (mainly external) to the needs (mainly internal) of the future;

Table 4. Morality, Emotions, Needs, SWOT, Purposes, Quaternicity Archetype and Quality Definitions

Approach/ Resources Environment/ Process	Subjective/ Information	Objective/Energy (material resources)
Inner/Storage	Justice and honesty *Adoration – Dignity* Tolerance and compassion *Despisal – Shame* Moderation *Envy – Remorse* Belonging Strength *(Morality)* Present Fitness for purpose	Solidarity, kindness and composure *Liking – Complacency* *Mercifulness – Disappointment* Safety and physiological needs Weaknesses *(Employability)* Logic Standards
Outer/Acquisition	Courage and wisdom *Interest – Self-acknowledgement* *Boredom – Loneliness* Transcendence and self-fulfilment Opportunities *(Democracy)* Future Clients	Responsibility and dedication *Respect – Pride* *Indignation – Guilt* Recognition Threats *(Science)* Emotion Achievements

4) emotion: an assessment of the internal needs associated with models and images, an assessment of the significance and of the resources (energy) likely to be assigned to activities by tying to images and activities three main types of choices: desirability (pleasure) or avoidance (distress) linked with a situation (positive or negative sign of emotion); satisfaction (achievement) or continuation (persistence and stabilization) linked with action (will); activation (stress) or suspension (depression) linked with the choice of use of internal energy resources (mood) (Dzelme, 2018b).

All components are linked and overlapped and consist of several sequential and parallel strings of possible images (static and patterns to be associated with scenes) and actions (dynamic models to be associated with symbols). Most actions of the psyche take place in the subconscious without being connected simultaneously with the attention mechanism and the 'I' model.

The attention mechanism, which is associated with emotions, links some content with increasing activity (energy) and 'lifts' to consciousness (using the positive return 'resonance'). Content that gains sufficient activity in the psyche and interacts with the 'I' model becomes conscious (Metzinger, 2010). When a person pays attention to the 'I' model, consciousness with

reflection (resonance) becomes self-awareness (Graziano, 2019). Attention and consciousness-related activities (decision) become 'free will' (choice and control). The success of the self-awareness mechanism involves the interaction of all components and integration around a single centre which, according to Crick (1995) and Graziano (2019), is located in the central part of the brain – the *claustrum* – linked to the limbic (emotion) system.

The modelling approach is useful for a study of languages and different texts, including art and philology (Emerson, 1997). Text is a simplified image (a set of symbols in visual, acoustic or other form) of the original model existing in the author's psyche. The model is restored in the receiver's psyche by the means at its disposal. An understanding of texts is the basis of education and depends on the shared environment of the author and receiver, the similarity of their models and symbols (a similarity and compatibility of knowledge, skills and the attitudes of the author and receiver).

A combination of isolated action models during the process of building integral, complex models takes place in two ways: 1) linkage of individual actions in strings (chains), taking into account: (a) the possibility of connections (a continuation of the next step after the previous one, according to logic 'common sense'); (b) the desirability of transition to better options (alternatives); 2) creation of hierarchical structures and multi-level clusters of symbols combining actions, sets and strings. Signs (symbols) combine into high level structures and 'words' (with their semantics), and words combine into 'stories' (using some rules and grammar of the appropriate language). The possibilities of the creation of action models are regulated by the semantics and grammar of a respective language. This approach of action modelling is valid for all kinds of languages (not only 'natural' languages), including mathematics, language of art, et cetera and could solve many problems existing in philosophy (Bičevskis, 2021), education (Līsmans, 2022), philology (Emerson, 1997), et cetera. The development of language and art is parallel and should be studied as a single, joint process linked with the evolution of the psyche. The use of language and art in education should be investigated as one complex process for the transformation of education. The role of art in education increases in significance if attitudes must be included in new ways and combined with new tasks for evaluation and decision making.

The action of psyche occurs through two ways:

1. Pattern creation (and storage for future use) from past experience happens by finding and storing invariants (i. e. truth) and using symmetry (i. e. repetition in space and/or time).
2. Activation of invariants and patterns linked with actual needs (using emotions linked with these needs).

Invariants, truths and patterns of actions from the past are 'simplified' and separated from the old 'unique' details of the past. New details come from the actual present and differ from the past.

For actual behaviour, old details should be forgotten and old invariants should be remembered in the right balance. A new chain of old operations and new action models with new details must connect the present (situation with its current assessment) and the desired, possible future (with its positive emotions).

The project of an action model linked with intense positive emotions and minimum negative emotions is reinforced to the level of execution using positive feedback (resonance). Projects linked with the most intense emotions associate with the 'I' model and thus come to mind through self-awareness and can be transformed and/or stopped with the help of 'free will' approximately 50 ms after appearing in the subconscious (Kandel, 2009). The awareness process could be created by joining the central part of the brain – *the claustrum* – to all its parts (Crick, 1995; Graziano, 2019).

Emotions and Morality

An analysis should include the 12 kinds of morality principles mentioned in official regulations (responsibility, dedication, courage, honesty, wisdom, kindness, compassion, moderation, composure, solidarity, justice and tolerance) (Dzelme, 2018b). A model with its respective morality and emotions (*in italics*) is represented in Table 4. Each principle of morality is linked with positive and negative emotions. The most important links are shown (see Table 4), where, after moral principles, in the next line are indicated (in italics) the main emotions linked with these principles – direct emotions which are used by a subject to evaluate the object of assessment and the reciprocal emotions – directed from a subject to himself as well as self-assessment from the point of view of a potential observer (object interacting with subject).

European Standards for Quality Assurance

The 10 European standards accepted for internal quality assurance of higher education are described in ESG (ENQA et al., 2015) and could be divided into 4 groups linked with quality purposes, human needs, SWOT analysis, emotions and principles of morality shown in Table 5, where the numbers in brackets indicate the number of the standard in ESG (see Table 5).

Table 5. ESG, Morality, Needs, SWOT, Purposes, Quaternicity Archetype and Quality Definitions

Approach/ Resources Environment/ Process	**Subjective/Information**	**Objective/Energy (material resources)**
Inner/Storage	Aims (1.1) and content (1.2) • Justice and honesty Tolerance and compassion Moderation • Belonging • Strength *Morality* Present (feelings) • Fitness for purpose	Means and participants (1.3, 1.4 and 1.5) and resources (1.6 and 1.7) Solidarity, kindness and composure • Safety and physiological needs • Weaknesses *Employability* • Logic (mind and conscience) • Standards
Outer/Acquisition	• Creativity (1.8) • Courage and wisdom • Transcendence and self-fulfilment • Opportunities *Democracy* • Future (intuition) • Clients	• Management (1.9, 1.10) • Responsibility and dedication • Recognition • Threats *Science* • Emotion (attitudes and values) • Achievements

Discussion

Modelling

The proposed models are one possible approach to an integrated, holistic investigation of the quality and aims of education. Complementary models should establish other angles and borders of education (Dzelme, 2020). Non-local interactions (quantum entanglement) do not change the main principle of limited knowledge because the possible quantum effects (Hameroff & Penrose, 2014) are also based on limited physical interactions of neurons.

Any hypothesis is based on a limited model and is useful within certain limits. Falsification and verification help to establish right limits for models, but to claim that any model has limited possibilities for use with scientific information as proposed by Popper (1971), is incorrect.

The aim of education could be described as creation of motivation and possibility and capacity to find, store and use models (Podnieks, 2021). Models could be divided into static and dynamic, symbolic and iconic, simple and complex categories, et cetera; but in a psyche, a joint network of interactions between neurons really exists. Division is possible for the purposes of investigation.

The Role of Art

A creation of models happens in different ways, but mainly by using special experimental toy models for education in the framework of artistic activities. Art, language and religions developed simultaneously during human evolution. The modelling approach allows us combine problems of education and art so as to understand and use quality concepts in education.

Art helps the psyche to carry out tasks of model building and implementation. The tasks of art are twofold, according to the two types of tasks of a psyche:

a) training – building truths and invariants (knowledge and skills) from training behaviour (specially designed 'experience': games, rituals, songs, dance, prayers, etc.);
b) action – building behaviour, actions from truths and invariants (obtained by learning and training experience) using appropriate emotions (attitudes) for assessments and decision-making (involving 'free will').

Objectively, the psyche, models of action and 'free will' comply with the laws of nature and are knowledgeable, taking into account uncertainty, SLS and non-local interactions. Subjectively, the 'I' model binds only a part of action models to reflections and introspection and 'free will' through consciousness and self-awareness (Graziano, 2019).

The main operations for processing information in a psyche could be divided into three overlapping groups, each related to two types of elements that are linked in a bottom–up, ascending, top–down and cutting manner:

1) interpolation (synthesis and analysis);
2) extrapolation (induction and deduction);
3) search for and use of symmetry (invariants, 'truth', generalisation and specification).

The criteria of an artwork (beauty) is the ability to promote all the three mentioned tasks. The main part of art must be linked with an education system and together with the main part of philosophy must create and support a worldview and morality based on an ideology. Possible deviations must be acceptable for the sustainable development of society. The part linked with education could be called applied art (design) and philosophy and is similar to applied science (engineering and crafts). Fundamental art and philosophy (the other part) aims to find new ways and new forms of ideology that are acceptable for future changes and development of education and ideology. Both parts are important and must be supported just as fundamental and applied science are supported.

It is necessary to compare existing invariants (virtues) with new ones appearing and to gradually change the existing set by replacing it with new findings. Such a comparison and evaluation could be organised through

special traditions (festivities/carnivals). In a successful sustainable society, possibilities should exist for comparisons, competition and changes. There must be ready ways to make replacements without revolutions using modest evolutionary changes. In order to escape revolutions and mitigate the disruptive effects of reforms, changes must be made in a timely manner, step by step, without creating contradictions or great challenges and using appropriate criteria for quality.

Conclusions

The necessary improvements to the concept of quality for its successful use in the management of education should include a complex use of all the main parts of the concept. The archetype of quaternality could serve as a basic model for the revision of the main principles of quality assurance. Quality as fitness for purpose must include the main aims of education, but all other aspects of quality should also be used. Quality management in higher education should use all the achievements of pedagogy, psychology and all other humanities as well as social and natural sciences. The definition and use of the concept of quality of education must be revised and linked with ESG, morality, emotions, human needs, SWOT analysis, purposes of higher education and the quaternicity archetype for psyche. A modelling approach, action models and the quaternicity archetype for psyche should be used.

The safety and stability of society could exist if principal concepts and principles would be investigated deeply enough. We need (a) an understanding and modelling of the necessary conditions of stability of any kind of intelligence activity (psyche and AI), (b) an evaluation of the safety of any action and (c) an understanding of the nature of a meaningful existence and sense of life. The current system (competence education, Bologna system, etc.) is no longer valid. An appropriate ideology and an understanding and right use of different languages, including mathematics, modelling and art, should be the basis for education. The whole education assessment and planning system, which uses the concept of quality, needs to be reviewed in terms of quality objectives and their relationship to resources (human, knowledge and material resources) and time (plans).

Art and philosophy should be divided into applied and fundamental parts with different tasks for the sustainable development of society. Applied art and philosophy must be used mainly in the framework of the education system and should serve in stabilisation, but fundamental art and philosophy should search for and implement appropriate evolutionary changes of ideology and worldview while avoiding crises and revolutions. Ideology should be based on local history and traditions, including Christian values, but without Christianity.

References

Andersen, H., Barker, P., & Chen, X. (2006). *The cognitive structure of scientific revolutions.* Cambridge University Press.

Barrat, J. (2013). *Our final invention.* St. Martin's Press.

Bičevskis, R. (2021). *Sabiedrība bez pasaules* [*The Society without a World*]. Rīga: Latvijas Universitātes Akadēmiskais apgāds.

Bostrom, N. (2014). *Superintelligence: Paths, dangers, strategies*. Oxford University Press.

Crick, F. (1995). *The astonishing hypothesis: The scientific search for the soul.* Scribner reprint edition.

Dzelme, J. (2020). Komplementaritātes principa pielietošana zinātnē [The Use of the Complementarity Principle in Science]. In V. Meņšikovs (Ed.), *Sociālās zinātnes reģionālajai attīstībai 2019 [Social Sciences for the Regional Development 2019]* (pp. 4–27), Daugavpils: Daugavpils Universitātes Akadēmiskais apgāds "Saule".

Dzelme, J. (2018a). Izglītība un ideoloģija [Edecation and Ideology]. In A. Kangro (Ed.), *Izglītības vadība. LU Raksti, 817. sējums [Education Management. UL Articles, Volume 817]* (pp. 33–50). Latvijas Universitātes Akadēmiskais apgāds.

Dzelme, J. (2018b). Pedagoģijas un reliģijas attiecību problēmas [Problems of the relations between Pedagogy and Religion]. In A. Kangro (Ed.). *Izglītības vadība. LU Raksti, 817. sējums [Education Management. UL Articles, Volume 817]* (pp. 51–62). Latvijas Universitātes Akadēmiskais apgāds.

Dzelme, J. (2007) Lai sasniegtu izglītības mērķus [To Achieve the Goals of Education]. In A. Mukāne (Ed.). *Virzītājspēks [Driving Force]* (pp. 191–207). Rīga: Izglītības un zinātnes ministrija.

Emerson, C. (1997). *The First Hundred Years of M. Bachtin.* Princeton.

European Association for Quality Assurance in Higher Education (ENQA), European Students' Union (ESU), European University Association (EUA), European Association of Institutions in Higher Education (EURASHE) (2015). *Standards and guidelines for quality assurance in the European higher education area (ESG)*. EURASHE.

European Commission (2020, February 19). *On artificial intelligence – A European approach to excellence and trust*. https://ec.europa.eu/info/sites/info/files/commission-white-paper-artificial-intelligence-feb2020_en.pdf

Godfrey-Smith, P. (2021). *Metazoa: Animal life and the birth of the mind*. Harper Collins Publishers.

Graziano, M. S. A. (2019). *Rethinking consciousness: A scientific theory of subjective experience.* W. W. Norton & Company.

Haken, H. (1988). *Information and self-organization*. Springer-Verlag.

Hameroff, S. & Penrose, R. (2014). Consciousness in the universe: A review of the 'Orch OR' theory. *Physics of Life Reviews*, *11*(1), 39–78.

Jungs, K. G. (2009). *Psiholoģiskā tipoloģija un māksla* [*Psychological Typology and Art*]. Apgāds Zvaigzne ABC.

Kandel, E. R. (2009). The biology of memory: A forty-year perspective. *Journal of Neuroscience, 29*(41), 12748–12756.

Kants, I., & Kūlis, R. (1988). *Praktiskā prāta kritika* [*Criticism of the Practical Mind*]. Zvaigzne.

Kantane, I., Sloka, B., Buligina, I., Tora, G., Busevica, R., Buligina, A., Dzelme, J. & Tora, P. (2015). Expectations by employers on skills, knowledge and attitudes of employees. *European Integration Studies*, (9), 224–234. http://dx.doi.org/10.5755/j01.eis.0.9.12809

Klein, M., Gutowski, P., Gerlitz, L. & Gutowska, E. (2021). Creative and culture industry in Baltic sea region condition and future, *Sustainability*, *13*(8), 4239.

Latvijas Republikas Saeima [Latvian parliament] (1998). *Izglītības likums [Education Law]*. Latvijas Republikas likums [Law of the Republic of Latvia]. *https://likumi.lv/doc.php?id=50759*

Līsmans, K. P. (2022). *Izglītība kā provokācija* [*Education as a Provocation*]. SIA "Jāņa Rozes apgāds".

Maslow, A. H. (1986). *Religions, values and peak-experiences*. Penguin Books.

Metzinger, T. (2010). *The ego tunnel: The science of the mind and the myth of the self*. Basic Books.

Multinclude. (2014, November 19). Mental health counselling for students in Riga Stradinš University. Multinclude. https://multinclude.eu/case/mental-health-counselling-for-students-in-riga-stradins-university/

Penrose, R. (1994). *Shadows of the Mind: A search for the missing science of consciousness* (Vol. 4). Oxford University Press.

Podnieks, K. (2009). Towards model-based model of cognition. *The Reasoner, 3*(6), 5–6.

Podnieks, K. (2021). Philosophy of modeling in the 1870s: A Tribute to Hans Vaihinger. *Baltic Journal of Modern Computing, 9*(1), 67–110.

Popper, K. R. (1971). *The open society and its enemies: The spell of Plato.* Princeton University Press.

Prigogine, I. & Stengers, I. (1997). *The end of certainty: Time, chaos and the new laws of nature*. The Free Press.

Rusanovs, E. & Skutele, S. (2021). *Konservatīvisms Rodžera Skrūtona izpratnē* [*Conservatism in Roger Scrooton's Sense*]. SIA "Jelgavas tipogrāfija".

Saskinds, D. (2021). *Pasaule bez darba* [*The world without work*]. SIA "Jelgavas tipogrāfija".

Siliņš, E. I. (1999). *Lielo patiesību meklējumi* [*Search for big truths*]. Jumava.

Skrūtons, R. (2021). *Kā būt konservatīvam* [*How to be conservative*]. SIA Kodoka.

Smolin, L. (2013). *Time reborn: From the crisis in physics to the future of the universe*. Houghton Mifflin Company.

Tisenkopfs, T. (2010). Indivīda atbildība [Individual responsibility]. In T. Tisenkopfs (Ed.), *Socioloģija Latvijā* [*Sociology in Latvia*] (pp. 361–378). LU Akadēmiskais apgāds.

Tumans, H. (2014). Social and political functions of meals in the society of ancient Greece. *Vēsture [History], 1*(96), 111–121.

Van Damme, D. (2004). Standards and indicators in institutional and programme accreditation in higher education: A conceptual framework and a proposal. In L. Vlăsceanu and L. C. Barrows (Eds.), *Indicators for Institutional and Programme Accreditation in Higher/Tertiary Education* (pp. 125–157). UNESCO-CEPES.

Veinbergs, J. (1988). *Piramīdu un zikurātu* ēnā [*In the Shadow of Pyramids and Ziggurats*]. Zinātne.

Vilks, A. (2001). *Deviantoloģija* [*Deviantology*]. Tiesu nama aģentūra.

Wigner, E. P. (1970). *Symmetries and reflections*. Indiana University Press.