

# CONTENT ANALYSIS OF AXIOLOGICAL DIMENSIONS OF THE NATIONAL CURRICULA

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## Abstrakt

The article aims to provide a content analysis of the complete corpus of Framework Education Programmes underlying primary and secondary education in the Czech Republic, focusing on the axiological, i.e. the value-driven component of the discourse. Axiology offers insights into a number of disciplines, including education, teaching and pedagogical research. Implicit and/or explicit values are present in fundamental materials such as the national curricula and in other types of documents and processes, exerting influence on educators, students and other stakeholders in educational activities. Methodologically, the text draws on a quantitative-qualitative content analysis of the complete body of Framework Education Programmes (national curricula), using lexical statistics, keyword-in-context analysis, dendrograms, proximity plots, keyness and categorisation. The analysis demonstrates that values constitute a frequent topic in the national curricula, being related to areas such as humanism,

environmental protection, democracy, morals, spirituality, tradition, culture and a number of others.

Keywords: education, axiology, values, national curriculum

## OBSAHOVÁ ANALÝZA AXIOLOGICKÉ DIMENZE RÁMCOVÝCH VZDĚLÁVACÍCH PROGRAMŮ

### Abstrakt

Cílem příspěvku je podat obsahovou analýzu kompletního korpusu rámcových vzdělávacích programů platných pro základní a střední školy v České republice, a to se zaměřením na axiologickou, tj. hodnotovou složku diskurzu. Axiologie poskytuje vhled do celé řady disciplín, včetně výchovy, vzdělávání a pedagogického výzkumu. Implicitní a/nebo explicitní hodnoty jsou přítomny ve východiskových materiálech typu rámcových vzdělávacích programů i v dalších dokumentech a procesech, přičemž je patrný jejich vliv na pedagogy, studenty i další účastníky pedagogických aktivit. Metodicky se text opírá o kvantitativně-kvalitativní obsahové analýzy kompletního souboru rámcových vzdělávacích programů (národních kurikul) za použití lexikální statistiky, kontextuálního rozboru, dendrogramů, grafů blízkosti (proximity plot), klíčivosti a kategorizace. Z analýzy vyplývá, že hodnoty tvoří frekventované téma národních kurikul a pojí se s takovými oblastmi, jako je humanismus, ekologie, demokracie, morálka, spiritualita, tradice, kultura a řada dalších.

Klíčová slova: výchova a vzdělávání, axiologie, hodnoty, rámcové vzdělávací programy

The term 'value' is derived from a Latin ancestor verb 'valēre', meaning 'to be strong, to be worthy'. Interestingly, the Latin verb was also closely associated with a good state of health, implying 'to be healthy' – Klein, 1986; Vaan, 2008.

Further historical fluctuations and developments of the Latin term and its descendants in several languages involve meanings of ‘strength’ in medieval Latin ‘valor’, ‘virtue, merit’ in Old French ‘valeur’, or ‘worthiness’ in Middle English ‘valor’ with reference to desirable qualities of strength and courage (Skeat, 1967). Contemporary cognates commonly used in science include ‘validity’ and ‘validation’, as well as ‘valence’ in chemistry. (Cf. the toponym of the Spanish city of Valencia, dating back to the Roman era (2nd c.)). Despite its historical changes, the abstract concept of value has been at least intuitively known in most cultures, societies and eras, and, as such, constitutes an anthropological universal.

Moyo *et al.* (2016, p. 258) suggest the concept of values as “basic convictions of what individuals or social groups consider right, good or desirable”, thus accentuating the social-perceptive aspect of value. In a similar vein, the American Psychological Association definition reads: “value... a moral, social, or aesthetic principle accepted by an individual or society as a guide to what is good, desirable, or important” (VandenBos, 2015, p. 1129). On the contrary, others view value as something inherently bestowed on objects and phenomena – e.g. Reber (1985, s. 810), who defines it as a quality or property rendering things useful, worthy or desirable. Pragmatic theories of value tend to conceptualize it situationally, following R. B. Perry’s adage that “any object, whatever it be, acquires value when any interest, whatever it be, is taken in it” (Perry, 1954, p. 115–116; Jessup, 1966).

Values and preferences have far-reaching implications for both natural and social sciences, including educational science, and shape the everyday life of all societies and individuals. Mukerjee (1950, p. iv) goes so far as to claim that “by their nature, all human relations and behaviour are embedded in values”. Logically enough, values permeate institutional patterns in education, too.

An interesting contribution to the dispute on the role of values in science and teaching has been made by Max Weber. In general social studies, Weber advocated a view of values based on cultural significance, promoting the term ‘value relevance’ for selector characteristics of particular subjects of study and methodology. At the same time, Weber eloquently comments on the conflict between value-laden and neutral styles of teaching by those who, by the very etymology of the word, used to be expected to convey value statements, worldviews and value-laden attitudes and frameworks to students, i.e. the professors (deverbative from ‘to profess’, from Latin ‘*prōfessus*’, meaning ‘to declare publicly, to confess’ – see Kleischoenn, 1986). Weber’s stance is principally

based on a call for value-neutral science and pedagogy, yet not in the sense of there not being any value variables present in the process of social science research and education. Rather, what Weber requires, is that the researcher's and teacher's personal presuppositions be isolated from the subject matter being explored or taught or, alternatively, that the subjective/practical evaluation of a given (university) teacher be explicitly presented as such in contrast to empirical/logical tenets of the science in question (Weber & Havelka, 1998). This 'bracketing' of personal values, attitudes and judgments is supposed to guarantee a certain objectivity of scientific inquiry and avoidance of individual bias and data skewing. Weber's opponents, however, suggest that it is questionable whether value neutrality is attainable or even conceivable (cf. Zecha, 1992). Weber actually never denied the presence of values in the scientific enquiry, but he maintained that they should be sequestered from the 'objective core' of social facts and that the process of teaching should incorporate the educator's wilful decision to refrain from presenting subjective opinions as given facts (Weber & Havelka, 1998).

Values penetrate the learning process at three different levels – the individual level, comprised of student values and teacher values, the organizational level, including school values, and, finally, the societal level. Societal values are commonly reflected in the framework education programme imposed on respective levels of education (pre-school, primary, secondary and other), in the learning content and in textbooks, software and other learning materials. Also, along with organisational values, they co-inform the prevailing approaches to grading and curricular design. The interplay of individual, organisational and societal values results in various patterns of learner and graduate profiles, influencing cognition, attitudes, behaviour and decision-making (i.e. choice of personal and organisational paths and careers).

In abstract terms, values constitute an integral part of the decision-making matrix and influence the planning, solution-seeking, as well as evaluation stages of educational activities conducted by teachers and administrators alike. Value preferences of and choices by the educators/faculty are, hence, exerting ongoing influence on the content and form of primary, secondary and tertiary education. The Framework Education Programmes (national curricula) themselves represent a body of goals, objectives, outcomes, learning content, methodological suggestions and value choices (preferences) of various kinds.

## **1. VALUE RESEARCH OF THE NATIONAL CURRICULA – OBJECTIVES AND METHODOLOGY**

To elucidate the underlying axiology of the national curricula as a key set of documents guiding the activity of educational institutions, a hybrid empirical investigation based on content analysis was carried out. Content analysis is principally defined as a technique based on inferencing patterns in and characteristics of textual (or visual) documents in a systematic manner either quantitatively or qualitatively (Stemler, 2001). We have employed a mixed quantitative-qualitative methodology over the complete corpus of national curricula as issued by the Ministry of Education, Youth and Sports of the Czech Republic.

The main goal of the investigation was to perform a general and focused content analysis of national curricula to shed light on quantitative and qualitative underpinnings of axiologically relevant terms in the corpus and to discover emerging topics for description and possible advancements. Objective 1 was to accrue quantitative data related to keywords falling in the semantic field of ‘value’ (mostly cognate words in the same semantic field). Objective 2 was to elucidate the explicit and implicit value content in the national curricula corpus with emerging keyword-in-context patterns. Also, proximity plots, dendrograms and collocational patterns interpretation were used. For tertiary analysis, automated topic extraction procedures were applied and used. Subsequently, the Allport-Vernon classification of values was employed as a stencil of categorization to further illuminate the role of values in national curricula (Objective 3).

A complete body of the national curricula for primary and secondary education levels was included in versions available in February 2021, i.e. after the information technology (IT) update for secondary school education. Obviously, a shift in values was connected to the update, increasing the volume of IT knowledge and skills in the learning content and decreasing the volume of some other subjects. The main focus of the corpus study was, however, based on general content analysis and a qualitative-quantitative disassembly of the textual structure topped by a backward synthesis of particular findings. Three content analysis and lexical statistics software platforms were used, namely, the Provalis Research Wordstat/QDA Miner bundle (Versions 8 and 6, respectively) and WordSmith (Version 4) in offline versions and the Kwords

online application of the Czech National Corpus available at <https://kwords.korpus.cz/>. Incidental computations were performed via macro formulas in Microsoft Excel 2016, version 16.0.5149. Approximately 20 hours of machine time were required for the main calculation procedures involved.

A total of 275 files (1 for primary education, 1 for primary arts education, 3 for special education, 2 for secondary general (grammar school) education, and 268 for secondary vocational education) were compiled from the National Institute for Education, Education Counselling Centre and Centre for Continuing Education of Teachers (NAU) repository at <http://www.nuv.cz/t/rvp> and <https://www.edu.cz/rvp/> (Ministerstvo školství, mládeže a tělovýchovy, 2021). The respective sizes (page ranges) for the .pdf files were 53 pages (Praktická škola jednoletá) to 164 pages (Základní vzdělávání) with a total merged pdf size amounting to 20 835 pages (data established by means of Pdf Split and Merge software). As indicated, the .pdf extension files were merged using a software file merger to create a single .pdf file and, subsequently, conversion into the .txt format was performed to enable smooth data processing in the respective content analysis and lexical statistics software platforms. With 16-bit character encoding, the resultant file size was 104 912 kB. The latter file was checked for diacritics encoding and used as input for further data processing.

Bulk processing of the joined national curricula corpus indicated a total of 33 759 types, i.e. distinct words, and 6 772 822 tokens (instances). In order to elucidate topic recurrence and semantic composition of the corpus, a number of analyses were performed. Firstly, lexical frequencies were computed to establish the position of lexical units referring to values and evaluation. A stoplist (exclusion list) comprising grammar words, such as conjunctions or prepositions, was applied to eliminate unnecessary encumbrance of words that do not convey lexical meanings properly. Lemmatization was applied on the WordStat software platform to form clusters of cognate forms (such as 'hodnota' (nominative), 'hodnotou' (instrumental) etc.) The resultant frequency list of top-frequency lexical units for the lemmatized corpus is provided in a tabularized form. The area of special interest to us, namely value/evaluation, was extracted and, in a specially designed Excel spreadsheet calculation, ranks for the respective words were determined. In linguistics, a rank is the frequency order of a given word or multiple words in the sequence of words listed by descending frequency, i.e. if the most frequent word in a text is 'he' (occurring e.g. 5031 times, it has a rank of 1,

if the next most frequent words in order are ‘be’ and ‘must’ with, let’s say, an identical frequency of 4923, both have a rank of 2 etc.) Thus, ranks, similarly to absolute and relative frequencies, give an idea of how frequent, salient and potentially important the given word or collocation is.

## 2. RESULTS

Firstly, for a tangible presentation of word frequencies in the national curricula corpus (NCC), a lexical frequency list was calculated via the Provalis Research software package and compiled in a table form was generated (see Table I). Consecutive items are arranged in descending order based on absolute frequency. As can be seen, logically enough, education-related nouns and adjectives (vzdělávání, vzdělání, vzdělávací etc.) constitute the most ostentatious items in this stoplisted semiquantitative presentation. Interestingly enough, the lexeme ‘hodnota’ ranks among the top 50 items out of the complete list of 33 759 types and various other items that can be deemed as ‘target values’ or ‘instrumental values’ in education are listed: zdraví (health), rozvoj (development), prostředí (environment), dovednost (skill), kompetence (competence) or informace (information). Despite the general and semantically broad character of most of the top-frequency items, a large percentage of them can be expected to have some value attributes in the given context. For selected lexemes and word forms related to our subject of scrutiny, the concept will be elaborated in greater detail in the keyword-in-context section.

A closer inspection of the lemmatized pool of data provides frequencies for particular cognates in the semantic area of valuing, morphologically based on the ‘hodn-o-’ root-stem combination. Respective frequencies in the national curricula corpus are listed in Table II below, showing a predominance of nominal conceptualization of value (‘hodnota’ and ‘hodnocení’) and lower representations of verbal and adjectival manifestations.

Interpretation of relative frequencies (% TOTAL) of given items must be carried out in the light of the non-application for the purpose of an exclusion list (stoplist) eliminating the common synsemantic words/morphemes, such as ‘and’, ‘of’, ‘they’, ‘an’, i.e. conjunctions, prepositions, pronouns or articles – the frequency is computed as part of the complete set of synsemantic plus autosemantic items and may, therefore, appear relatively low. The meaningfulness of autosemantic items, like ‘vzdělávací’, ‘žák’ etc.

Table I: *Absolute (n) and relative (% TOTAL) frequencies of lemmatized lexemes in the national curricula corpus*

	<b>n</b>	<b>% TOTAL</b>	<b>R</b>
VZDĚLÁVÁNÍ (education as process)	115992	1,71 %	1
ŽÁK (student)	77382	1,14 %	2
VZDĚLÁVACÍ (educational)	32156	0,47 %	3
PRÁCE (work)	31672	0,47 %	4
ZÁKLADNÍ (basic)	31556	0,47 %	5
ODBORNÝ (professional)	29218	0,43 %	6
ŠKOLA (school)	27535	0,41 %	7
OBOR (field)	27125	0,40 %	8
ŠVP (school education programme)	21959	0,32 %	9
VZDĚLÁNÍ (education as result)	20667	0,31 %	10
PROSTŘEDÍ (environment)	20331	0,30 %	11
DOVEDNOST (skill)	20309	0,30 %	12
OBLAST (sphere)	18888	0,28 %	13
ZDRAVÍ (health)	18567	0,27 %	14
ROZVOJ (development)	18540	0,27 %	15
POPSAT (describe)	18344	0,27 %	16
VÝUKA (teaching/education)	17951	0,27 %	17
RVP (framework education programme)	17950	0,27 %	18
INFORMAČNÍ (information adj.)	17345	0,26 %	19
PROGRAM (programme)	17280	0,26 %	20



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	n	% TOTAL	R
OBSAH (content)	16313	0,24 %	21
FORMA (form)	15763	0,23 %	22
VYSVĚTLIT (explain)	15607	0,23 %	23
KOMPETENCE (competency)	15437	0,23 %	24
KOMUNIKAČNÍ (communication)	15425	0,23 %	25
ŘEŠENÍ (solution)	14918	0,22 %	26
JAZYK (language)	14818	0,22 %	27
PROSTŘEDEK (means)	14705	0,22 %	28
VÝSLEDEK (result)	14646	0,22 %	29
JINÝ (other)	14350	0,21 %	30
PODMÍNKA (condition)	14168	0,21 %	31
FUNKCE (function)	13850	0,20 %	32
INFORMACE (information)	13634	0,20 %	33
RŮZNÉ (different)	11832	0,17 %	34
OCHRANA (protection)	11396	0,17 %	35
UVÉST (indicate)	11297	0,17 %	36
VZTAH (relation/relationship)	10139	0,15 %	37
CHARAKTERIZOVAT (characterize)	9779	0,14 %	38
NAPŘÍKLAD (for example)	9749	0,14 %	39
ZEJMÉNA (especially)	9708	0,14 %	40
<b>HODNOTA (value)</b>	9619	0,14 %	41
PRACOVNÍ (occupational)	9239	0,14 %	42

n = absolute frequency, % total = relative frequency, R = rank

Table II: *Absolute (n) and relative (% TOTAL) frequencies of lemmatized value-related lexemes in the national curricula corpus*

	<b>RANK</b>	<b>n (ABSOLUTE FREQUENCY – TOKENS)</b>	<b>% TOTAL (of 6 772 822 tokens)</b>
hodnota (value) (various contexts)	41	9624	0,14 %
hodnocení (evaluation, assessment)	128	4982	0,07 %
hodnotit (to evaluate, to assess)	420	2029	0,03 %
hodnotový (related to value)	826	991	0,01 %
hodnotný (valuable)	1189	546	0,01 %
hodnocen (evaluated, assessed)	1462	268	≈ 0,00 %
hodnotící (evaluating, assessing)	1714	16	≈ 0,00 %
hodnoticí (designed for assessment or evaluation)	1726	4	≈ 0,00 %
hodnotitelné (amenable to evaluation or assessment)	1726	4	≈ 0,00 %
hodnotitel (evaluator)	1727	3	≈ 0,00 %
hodnotitelské (evaluator-related)	1728	2	≈ 0,00 %

(mostly nouns, adjectives and verbs), however, renders them the chief conveyors of textual meaning, hence, their semantic importance in the text is prominent. Most top frequency autosemantics refer to general pedagogical concepts (vzdělávání, škola, rámcový vzdělávací program, školní vzdělávací program, kompetence etc.), yet, ‘hodnota’ occupies the 41st position in order of frequency, indicating a comparatively significant locus of this concept.

Semantic ‘centres of gravity’ in textual corpora have been documented to correspond with naming units that exhibit high levels of ‘keyness’. Keyness (“aboutness”) is a semantic variable that indicates the prominence of certain naming units in a selected text as compared to a general corpus of the language involved. Thus, comparing particular national curricula to the Czech National Corpus might produce the most specific, or most typical, expressions that are unique in their prominence in the latter curricula. The Kwords Czech National Corpus instrument was employed for this purpose (<https://kwords.korpus.cz/>). Due to the limitations of Kwords text volumes and due to a large number of national curricula explored, only a comparison of primary education versus secondary general education (gymnázium) is provided. Further analysis would deserve a separate article. Loading the primary school (PriS) and secondary grammar school (SGS) curricula in the Kwords tool, we arrived at the following high-keyness items (provided that abbreviations referring to subjects as specific value areas are omitted): basic school – mediováných (DIN 100.00), prosociálnost (DIN 100.00), tabulace (DIN 100.00), osvojovaných; secondary grammar school – nerovnic (DIN 100.00), makroregiony (DIN 99.00), nerovnice (DIN 99.00), znevýhodňujícího (DIN 99.00). The highest thematic concentrations in the basic school curriculum were documented for ‘vzdělávání’ and ‘základní’, while in the grammar school curriculum, ‘vzdělávání’ and ‘žák’ gained prominence. The words with high levels of keyness and thematic concentration constitute further hints for the identification of highlights and values in textual corpora – in other words, high-frequency naming units, high keyness lexemes and bearers of semantic concentration suggest what the author(s) of each text in question regarded as important. DIN (Difference Index) constitutes a partial yet important parameter of keyness (word prominence or specificity), and is not directly related to the absolute frequency of the given item in the file, since it relates to the word’s exceptionality against the background of a general corpus.

The position of the wild-carded root-stem ‘hodn-o\*’ with various cognates suggests a medium level of keyness, indicating that values and evaluation are neither neglected nor overemphasized in national curricula compared to a large number of texts used in fiction, non-fiction and media publications (the representative SYN2015 corpus with approximately 121 million tokens – Křen, Cvrček, Čapka *et al.*, 2015). Specific DIN calculations for the former root-stem nouns and adjectives for the basic school vs. grammar school curriculum are listed in Table III.

Table III: *Keyness expressed by DIN (Difference Index) – a comparison of basic school and grammar school national curricula*

KEYWORD	BASIC SCHOOL DIN	GRAMMAR SCHOOL DIN
hodnotám (values, dative)	92,521	90,966
hodnot (values, genitive)	-	88,057
hodnotové (related to value, various cases and genders)	-	93,863
hodnotového (related to value, sg., m./n., gen.)	96,105	-
hodnotových (related to value, pl., m./f./n., gen./loc.)	93,773	-

The following parameters were pre-adjusted in the software tool: reference corpus: SYN2015 (a general Czech language corpus of contemporary language up to the year 2015), case insensitivity, a synsemantic stoplist, multi-analysis, log-likelihood method,  $\alpha = 0.001$ . Comparatively high keyness was identified in all hodn-o\* cognates.

Isolated lexemes are eloquent indicators of topic and value orientation in the given text, yet higher-order units, including collocational clusters (“phrases”) and topic features, provide a more complete image of the semantic saturation of the text under investigation. In order to shed more light on the topic structure, an automated topic extraction analysis was performed on the QDAMiner/WordStat platform with a pre-set number of topics equal to 30. Among the 30 topics yielded by implicit WordStat algorithms, one was directly value-centred, namely, *Lidský život* (Human life). The topic was exemplified by the following lexical items: *vysokou*, *lidský*, *uznávat*, *vážít*, *hodnotu*, *život*, *chránit*, *respektovali*. A relatively high internal coherence of 0.42 was present in the topic cluster with a total of 8306 instances of hyponymic items identified in the corpus.

Secondly, lexical frequency analysis was supplemented with collocation analysis, indicating the most typical clusters or patterns that re-occur in the text. Collocation analysis requires both computational power and user-driven reading comprehension to identify the most typical clusters and their meaning in the overall arrangement of the text. In the preliminary analysis, all repeatedly appearing clusters were extracted (Table IV), and later on, based on morphematic filtering, collocations directly relevant to

Table IV: *Recurring clusters in national curricula as identified by concordance analysis*

ORDER	CLUSTER	ABSOLUTE FREQUENCY (n)	CONJECTURAL VALUE STATUS
1	INFORMAČNÍCH A KOMUNIKAČNÍCH (information and communication)	10772	I, T
2	A KOMUNIKAČNÍCH TECHNOLOGIÍ (and communication technologies)	7831	I, T
3	PROSTŘEDKY INFORMAČNÍCH A (means of information and)	3715	I, T
4	KOMUNIKAČNÍCH TECHNOLOGIÍ A (communication technologies and)	3638	I, T
5	A KOMUNIKAČNÍCH TECHNOLOGIÍCH (and communication technologies)	3470	I, T
6	A ŽIVOTNÍ PROSTŘEDÍ (and the environment)	3065	T
7	VZDĚLÁVÁNÍ V INFORMAČNÍCH (education in information)	2769	I
8	V INFORMAČNÍCH A (in the information and)	2643	unknown
9	ČLOVĚK A ŽIVOTNÍ (man and life/environment)	2621	T
10	A ZDROJE INFORMACÍ (and sources of information)	2392	I, T
11	TECHNOLOGIE A ZDROJE (technology and resources)	2234	I, T
12	PRÁVA A POVINNOSTI (rights and responsibilities)	2064	T
13	ČLOVĚK A SVĚT (man and the world)	2008	T
14	VZDĚLÁVACÍMI POTŘEBAMI A (educational needs and)	1940	I
15	A SVĚT PRÁCE (and world of work)	1926	T

ORDER	CLUSTER	ABSOLUTE FREQUENCY (n)	CONJECTURAL VALUE STATUS
16	V SOULADU S (in accordance with)	1918	unknown
17	DIGITÁLNÍ TECHNOLOGIE A (digital technology/technologies and)	1907	I, T
18	INFORMAČNÍ A KOMUNIKAČNÍ (information and communication)	1856	I, T
19	ÚLOH ÚČELNĚ VYUŽÍVÁ (tasks efficiently employs)	1819	I
20	ÚČELNĚ VYUŽÍVÁ DIGITÁLNÍ (efficiently employs digital)	1819	I
21	A OCHRANY ZDRAVÍ (and health protection)	1777	T
22	OCHRANY ZDRAVÍ PŘI (health protection during)	1747	T
23	VĚDOMOSTI A DOVEDNOSTI (knowledge and skills)	1735	I, T
24	VYUŽÍVÁ DIGITÁLNÍ TECHNOLOGIE (uses digital technologies)	1712	I, T
25	V PŘÍRODĚ A (in nature and)	1646	T

I = instrumental, T = teleological/target/outcome

the concept of value and evaluation were separated (Table V). Further, a skimming reading technique was applied to the computer-produced list to find further patterns and relationships. The keyword-in-context list generated in WordStat was arranged on demand by keyword as a primary key and left-context as the secondary key, the data were exported to an .xlsx file format, loaded in a Microsoft Excel spreadsheet and a special formula was developed to count total frequencies of particular contextual patterns (collocations). WordSmith software concordance was used as a comparison for the WordStat instrument, with no major difference.

Table V: *Recurring clusters in national curricula as identified by concordance analysis (value-related only)*

ORDER	CLUSTER	ABSOLUTE FREQUENCY (n)
115	HODNOTY A POSTOJE (values and attitudes)	769
157	KULTURNÍCH HODNOT JINÝCH (cultural values of other)	662
272	PREFERENCÍ A HODNOT (preferences and values)	539
302	HODNOT JEDNAT ODPOVĚDNĚ (to act responsibly (in relation to value))	536
364	DUCHOVNÍCH HODNOT DOBRÉHO (spiritual values of good)	536
432	A HODNOTOVÉ ORIENTACE (and value orientations)	536
525	VYUŽÍVÁNÍ KULTURNÍCH HODNOT (use of cultural values)	494
1086	HODNOTY JINÝCH NÁRODŮ (values of other nations)	351
1131	POSTOJŮ A HODNOT (attitudes and values)	334
1295	HODNOCENÍ A JEDNÁNÍ (evaluation and acting)	303
1309	ROZHODOVÁNÍ, HODNOCENÍ A (decision-making, evaluation and)	303
1378	POPÍŠE A ZHODNOTÍ (describes and assesses)	286
1395	A ZHODNOTÍ VÝZNAM (and assesses the significance)	283
1448	POSTOJE A HODNOTY (attitudes and values)	276
1504	A DUCHOVNÍCH HODNOT (and spiritual values)	274
1800	HODNOT A POSTOJŮ (values and attitudes)	269
1821	SEBEPOZNÁNÍ A SEBEHODNOCENÍ (self-knowledge and self-assessment)	269
1872	PREFEROVAT DEMOKRATICKÉ HODNOTY (prefer democratic values)	268

ORDER	CLUSTER	ABSOLUTE FREQUENCY (n)
2004	POSTOJE, HODNOTY A (attitudes, values and)	268
2124	VYTVÁŘENÍ HODNOT (creating values)	268
2467	NA VYTVÁŘENÍ HODNOT (in value creation)	268
2717	CHÁPÁNÍ A HODNOCENÍ (understanding and assessment)	268
2735	DOVEDNOSTI A HODNOTY (skills and values)	268
2812	HODNOTOVÉ ORIENTACE, KTERÉ (value orientation which)	268
2817	HODNOTY A PŘÍSTUPY (values and approaches)	268
2819	HODNOTOVÉ ORIENTACE ŽÁKŮ (value orientation of students)	268
2825	HODNOT DOBRÉHO ŽIVOTNÍHO (the value of good environment)	268
3694	TRADICE A HODNOTY (traditions and values)	234
3790	PODPOROVALI HODNOTY NÁRODNÍ (support values of national)	233
4253	HODNOTY SVÉHO NÁRODA (the values of their nation)	233

Apparently, the results can be divided into those that fall easily within the scope of pedagogy or natural sciences (evaluation/assessment, measurement, mathematical meanings<sup>1</sup> of ‘value’ etc.) and those that have a more philosophical, axiological or ethical skew. As the latter are the most relevant for our inquiry, they are further commented upon in a more detailed manner. Results produced in WordStat Concord were ordered by frequency and classified according to their fit into two categories – instrumental (mostly

1 Mathematical meaning of ‘value’ is only referred to in order to complete the overall picture of the instances of this lexeme in context. They are not part of the axiological analysis.



Donabedian's process and structure (Donabedian, 2003)) and teleological (mostly learning outcomes and curricular content). Similarly to isolated lexemes, the overview of top frequency clusters based on originally calculated trigrams (3-tuples) of words in the WordSmith software package as presented in Tables IV and V is indicative of the thematic and value focus of the corpus along with the relevance-driven selection of explicit value expressions as appearing in descending order.

Despite some formalism of the extraction procedure based on n-tuples, the choice of autosemantic expressions enables a first-glance conceptualization of prominent textual topics and of the position of explicit value-related formulas. Notwithstanding the fact that values and valuing phrases show medium-range frequencies, they are recurring across and within the national curricula and, therefore, the lump sums of their occurrences are relatively high, laying the foundation for an axiological orientation of the curricular content. Moreover, the non-explicit expressions of value preferences, such as rich inclusion of some topics/lexemes and omission of others, co-inform the overall picture of the value orientation of current schooling. The recurring mention of information processing and information technology, for instance, is indicative of a clear emphasis placed on technical skills, while humanistic, health-related, life-related and environmental issues counterbalance the natural science content with a social accent.

The most frequently recurring collocational patterns as identified by WordSmith Concord were as follows (in descending frequency order): informační a komunikační technologie, člověk a životní prostředí, technologie a zdroje informací, práva a povinnosti, člověk a svět, vzdělávací potřeby, svět práce, digitální technologie, účelně využívá, ochrana zdraví, vědomosti a dovednosti, příroda, obsahové okruhy, obsah vzdělávání, speciální vzdělávací potřeby, žáků nadaných, v běžném životě, řeší úlohy, výsledky vzdělávání, znalosti a dovednosti, v odborné praxi. Due to an overlap with WordStat software results, the areas are jointly discussed in further contextual analysis.

Based on absolute frequencies, an apparent accentuation of the following areas as learning content values, reflected in the binding national curricula (RVP's), can be identified: technology, human, environment and nature, health, and, of course, particular subject areas with their specific lexical sets are represented as knowledge domains (e.g. mathematics) or skills domains (e.g. physical training). The aforementioned broad areas encompass key

priorities of the learning content that pupils/students are expected to acquire, corresponding to the areas explicitly stated as headings of the national curricula and to values promoted hereby.

Keyword-in-context scrutiny of ‘hodnota’ and ‘hodnotit’ and its cognates identified at first-pass analysis (hodnocen, hodnoceny, hodnota, hodnotou, hodnotu, hodnot, hodnocení, hodnoty, hodnotami, hodnotám, hodnotili, hodnotit, hodnotí, hodnotné, hodnotný, hodnotovou, hodnotová, hodnotové, hodnotovými, zhodnotit, zhodnotí, vyhodnocení, vyhodnocovali, vyhodnocovat, vyhodnocuje, vyhodnotit, vyhodnotí, vyhodnocování), respectively, was performed in QDAMiner/WordStat to cast light on the usage of words related to value, evaluation, assessment and related areas.

The passive participle ‘hodnocen’ in the corpus texts typically manifested itself in close connection with pedagogical assessment (“může být uvolněn... nebo nemusí být hodnocen...z provádění některých činností”). The 233 occurrences of this cluster that were identified conveyed the idea of concessions for students with disabilities and can, therefore, be deemed ‘value-laden’ in the implicit sense of support and respect for learners who suffer from health impairments. This case illustrates how ubiquitous axiological variables are even in passages where they are not explicitly mentioned. The cognate ‘hodnoceny’ appears solely in clusters connected to the assessment of self-paced study (34 occurrences).

The nominative singular noun form ‘hodnota’ carried multiple meanings in sentential contexts, including mathematical and statistical meanings. Nevertheless, “hodnota a podpora zdraví” was one of the topics mentioned that relate more closely to philosophical axiology. The phrase “žáci docházejí k poznání, že zdraví je důležitá hodnota v životě člověka” followed suit, although it appears somewhat unsettling that mathematical usage outnumbered that of social sciences markedly. The instrumental case of ‘hodnota’, i.e. ‘hodnotou’, however, compensated for the deficit to a certain degree, occurring in clusters like “uznávat, že lidský život je vysokou hodnotou, a proto je třeba si ho vážit a chránit ho” (a total of 268 instances). Another grammatical form of ‘hodnota’, the accusative ‘hodnotu’, is generally featured in mathematical contexts, yet some occurrences refer to cultural values, e.g. “posoudí význam a hodnotu kulturních památek”. Favourable axiological connotations of ‘hodnotu’ are implied in the 265 instances of the phrase “aby žáci respektovali lidský život a jeho trvání jako vysokou hodnotu” and in the 229 instances of the phrase “uznávat hodnotu

života, uvědomovat si odpovědnost za vlastní život a spoluodpovědnost při zabezpečování ochrany života a zdraví ostatních". Specifically, this phrase was used to pinpoint the interpersonal nature of certain values, indicating that many values are embedded in the relational world extending beyond the individual and their needs. Altogether, life and responsibility were among the most frequent axiological collocates of 'hodnotu'. Over 80 instances of phrases presenting health as a paramount value necessary for the quality of life, including its emotional component, were also documented, indicating awareness by the authors of the national curricula of the importance of fostering humanistic sentiments in learners.

'Hodnot' (genitive of 'hodnoty', i.e. 'values') was conceptually linked to a wide variety of axiological entities, most frequently to adjectival 'duchovní' ('spiritual'), 'cultural', and nominal 'health', 'life', 'attitudes', 'preferences', 'democracy', 'love', or 'friendship'. There was a non-negligible percentage of the mathematical usage of 'hodnota', which, however, lies out of the scope of our analysis. The plural genitive nominal form 'hodnot' was most typically found in relation to cultural values, the value of democracy and formative influences expected to incite positive attitudes and values concerning environmental issues and the environment we live in. The same term is used to urge learners to highly esteem both spiritual and material values and a favourable living milieu ("Žáci jsou vedeni k tomu, aby [si] vážili... materiálních a duchovních hodnot, dobrého životního prostředí a snažili se je chránit a zachovat pro budoucí generace." – a total of 165 occurrences. Similarly, learners are stimulated to cherish human work and economic values ("vážit si hodnot lidské práce, jednat hospodárně, neničit hodnoty, ale pečovat o ně" – a total of 141 occurrences with an additional total of 123 of a synonymous phrase. Moreover, the pupil/student is incited to esteem cultural values and traditions of their own nation and other nations. 109 occurrences of 'hodnot' induce the idea of health protection ("vážit si zdraví jako jedné z prvořadých hodnot potřebné ke kvalitnímu prožívání života"). Rightly enough, health appears to play an important part in the axiology of the national curricula. Many times, the form 'hodnot' is employed as a prerequisite for being competent in occupational/professional settings, with the national curricula stating that professional competences come as a complex of knowledge, skills, attitudes and values ("soubor odborných vědomostí, dovedností, postojů a hodnot potřebných pro výkon pracovních činností daného povolání" – a total of 259 occurrences). The civic aspect of

learning and its outcomes is repeatedly accentuated under the heading “Vzdělávání v občanském základu usiluje o formování a posilování těchto pozitivních citů, postojů, preferencí a hodnot:”, listing a number of qualities that are deemed desirable at the societal level: to be honest, to act in a prosocial manner, to be ethically (morally) mature, to oppose crime, to comply with humanity and virtues, to show respect for human rights, to act in a responsible and solidary manner. Love and friendship are associated with the word form ‘hodnot’ over 120 times. Learners are also mentioned as ‘co-producers’ and ‘protectors’ of cultural and spiritual values (2 instances).

The majority of occurrences of the nominal form ‘hodnocení’ were identified in the context of learner assessment by self, other learners or educators. Besides, phrases such as “uplatňování adekvátních metod a forem výuky, hodnocení...” in reference to learners with specific needs and gifted learners, and phrases implying the evaluation of various information resources or phrases emphasizing adequate reaction to evaluations or criticisms expressed by others reappeared in different places of the national curricula. The application of formative assessment had a total of 233 occurrences. Knowledge and skill assessment in information technology tended to recur, too, with a total of 268 occurrences. Still, a number of instances of ‘hodnocení’ were related to the ethical, axiological and generally philosophical concept of ‘values’. Epistemological aspects were embodied in the phrase “odlišuje... fakta od názorů a hodnocení”. “Pozitivní hodnocení druhých” a “projevování pozornosti a laskavosti” appeared in an interpersonal relationship context, as did “filozoficko-etické rozhodování, hodnocení a jednání” (140 instances) in a context alluding to practical implementation of knowledge acquired in social sciences. Political and civic decision-making was mentioned repeatedly in the context of valuing and made a total of 123 occurrences.

Next, the plural ‘hodnoty’ was closely associated with ‘democratic’, ‘cultural’, ‘attitudes’, ‘preferences’, but also ‘morals’, ‘tradition’, ‘nation’, ‘past’, ‘present’, ‘life’, ‘individual development’, ‘national’, ‘European’ and ‘world’, and even ‘physical fitness’. The mathematical sense of ‘hodnoty’ was, similarly to some singular forms, used fairly frequently, yet did not eclipse the philosophical meaning of other instances of the form.

The instrumental plural form ‘hodnotami’ most typically co-occurred with ‘morals’, ‘judgment’, ‘responsibility’, and ‘humanity’. The dative plural form ‘hodnotám’ was most frequently found in the context of spirituality, historical values, cultural values, human products, nations, respect for other people

and animate/inanimate nature. Aesthetic cultivation is mentioned 226 times as a co-factor in cultural education and in shaping positive attitudes toward spiritual and material values (“Estetické vzdělávání významně přispívá ke kultivaci člověka...má nadpředmětový charakter... Obecným cílem estetického vzdělávání je utvářet kladný vztah k materiálním a duchovním hodnotám, snažit se přispívat k jejich tvorbě i ochraně. Vytvořený systém kulturních hodnot pomáhá formovat postoje žáka...”).

The verbal past form ‘hodnotili’ was typically used in collocation with quality of information and quality of work, i.e. in the practical evaluative process. Only four occurrences, however, were related to pedagogical assessment procedures for student performance, namely in the phrase “objektivně hodnotili výkony žáků”. The determiner ‘objectively’, is clearly a value expression, too, indicating that teachers should keep to a standard of unbiased assessment toward learners.

The infinitive ‘hodnotit’ was commonly contextualized with critical evaluation of media contents (265 instances), and progress in achieving the learning outcomes (261 instances), yet, acquisition and critical evaluation of information were also incorporated fairly often. The infinitive was also associated with discussion and analysis of learning content, and with interpretation and comprehension of texts.

The present tense durative ‘hodnotí’ appeared to match with a multifarious stock of concepts, including the quality of the crop, risk assessment, sensory qualities of objects, etc. Nevertheless, the most frequent context was that of evaluation of the impact of various activities on humans in relation to environmental issues (189 instances). Also, critical evaluation of beauty representation in the media was relatively common (99 instances).

The adjectival expression ‘hodnotné’ (‘valuable’), which per se implies desirable, socially acceptable entities, was almost exclusively (267 instances) used as the plural in relation to an aspect of humanity, namely, deeming other people equally valuable as self and honouring their personal identity. Three instances were identified highlighting the inherent value of discovering the principles of nature (“Odkrývání přírodních zákonitostí je hodnotné... samo o sobě”). The masculine singular adjectival form ‘hodnotný’ (‘valuable’) is closely associated with communication skills for life (265 cases).

The adjectival feminine singular accusative form ‘hodnotovou’ (‘value-related’) adhered to ‘value orientation’ in all instances (a total of 40). The same rule could be applied to its first-case form ‘hodnotová’, where all

but three instances were adjuncts of ‘orientace’ (110 cases). The cluster ‘hodnotová orientace’ is commonly applied in pedagogy (Horák, 1996), psychology, axiology and related disciplines, and its use in the national curricula underscores the importance of value-pattern formation as one of the learning outcomes shared by the educational system and families alike. As English ‘education’ comprises both learning-content-related and moral/forming elements, i.e. what is traditionally distinctly treated in Czech as ‘vzdělávání’ and ‘výchova’, it should be stressed that while value orientation and value patterns fit well in the English ‘education’, they accord better with ‘výchova’ in Czech due to its ethical connotations.

The adjectival expression ‘hodnotové’, which may materialize in multiple grammatical cases, was most typically represented in the context of pupils’ value orientation (in a democratic setting) – 225 cases. In a similar vein, the expression was placed in the context of skills and attitudes necessary for certain professional careers (“dovednosti, postoje a hodnotové orientace, které jsou předpokladem pro výkon žáka/absolventa ve vymezené činnosti”) – 259 cases. Further, the former expression was utilized in context with the formative processes taking place in educational settings, namely, in the saying “k pozitivnímu ovlivňování hodnotové orientace žáků, aby byli slušnými lidmi a odpovědnými občany” (268 cases). Although in real-life classroom settings, the latter ‘decency’ and character qualities of pupils may be somewhat overshadowed by theoretical knowledge as a prominent part of many current curricular contents, it is apparent that the national curricula (RVP’s) do not neglect the ‘humanistic’ and moral attributes of schooling that are axiological *par excellence*.

In the text under investigation, the adjectival instrumental plural ‘hodnotovými’ associates solely with ‘systémy’. ‘Value systems’, a purely axiological term in itself, are thus represented a total of 35 times in the corpus as indicators of a value-laden learning outcome consisting in the fostering of awareness of the existence of different group values (mostly in respect to religious values).

The prefixed infinitive verbal ‘zhodnotit’, possessing a finite (one-time) meaning in Czech, is, in its major part, used in the corpus in the sense of learner’s self-assessment (“Je schopen zhodnotit své pohybové aktivity”) and assessment of the quality of orientation in outdoor settings. Therefore, the latter verb form is found to focus on educational performance related to physical activities, not abstract notions. Another form of the verb, ‘zhodnotí’

(‘performs an assessment/evaluation’) emerges in numerous contexts with some of the most prevalent links being that of external experts judging gifted pupils’ disposition for the endowment of individual learning plans and other measures (233 times) and that of evaluation of environmental aspects of various human activities (70 times). Evaluation of literary works and motivational tools in management are further examples of the contextualization of ‘zhodnotit’ as represented in our corpus. Some other usages are highly subject-specific or domain-specific (e.g. description and evaluation of the importance of breathing, establishing the usage of chemical compounds, or judging certain aspects of history).

The deverbative nominal ‘vyhodnocení’ (‘act of valuing’, ‘evaluation’) occupies many positions in clusters related to the judging of the quality of information resources. Elsewhere, it is closely related to self-assessment and practical measurement evaluation. The cognate past verbal imperfective form ‘vyhodnocovali’ can most frequently be found in relation to information and measurement as well. The related infinitive ‘vyhodnocovat’ commonly refers to evaluation of information on educational and occupational opportunities (“umět získávat a vyhodnocovat informace o pracovních i vzdělávacích příležitostech”) and evaluation/interpretation of data and findings. Further contextual meanings revolve around the ability to assess the pupil’s/student’s own learning progress and outcome achievement. The cognate form ‘vyhodnocuje’ associates markedly with texts and media, but is also linked to various progress and outcome variables of particular subjects (logical functions, quality of soil etc.) In many instances, the process of evaluation in this sense is tied to decision-making processes, since the results being evaluated entail further practical steps to be taken (e.g., “analyzuje, vyhodnocuje, provádí jejich výběr” in relation to information processing). The infinitive ‘vyhodnotit’ (‘to perform an evaluation’, ‘to make a judgment’) points most commonly to results and information, and it is quite often used in relation to decision-making as a prequel (“navrhnout způsob řešení... zdůvodnit jej...vyhodnotit”). The future tense verbal form ‘vyhodnotí’ (‘will perform an evaluation’) appears in a number of collocational structures in the corpus. Of axiological interest is its occurrence in the phrase “vyhodnotí etické aspekty používání biotechnologií založených na genetických informacích organismů” (5 instances). Evaluation and interpretation of statistical data, personal development and relation of findings to reality are also prominent in the context of ‘vyhodnotí’.

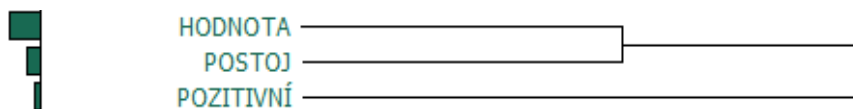
The durative/iterative deverbative noun ‘vyhodnocování’ (‘continuous/repetitive act of valuing/evaluation’) has specific connotations in the present corpus to individual education plans (individuální vzdělávací plány, IVP’s), pedagogical support plans (plány pedagogické podpory, the so-called PLPP’s) and other support measures for learners with specific needs. The IVP’s commonly include outcomes and priorities related to both components of ‘education’ (i.e. vzdělávání and výchova), as well as health-related outcomes, provided the reason for endowing the learner status necessitating an IVP is directly linked to a particular impairment of health. The measures offered as a means of support to learners with specific needs are themselves a reflection of certain societal values and have been more markedly stressed in recent decades hand in hand with the development of other, more general arrangements for persons with disabilities.

The keyword-in-context methodology with further re-reading is one part of the disclosing methodology of the present analysis. Content relations in corpora can further be uncovered by means of proximity plots. Again, the WordStat and QDAMiner environments were employed to generate relations of manually selected words that have a bearing on the topicalization of ‘value’ in the national curricula. Proximity plots represent a sophisticated way of automated processing of large corpora and aid in understanding the relationships and contextualization of selected terms in a slightly different manner compared to the adjacency-driven keyword-in-context procedure.

Due to the large amount of visual data generated during the content analysis, only prototypical proximity plots with the most prominent relation to axiological-philosophical dimensions of value/evaluation are presented below, with mathematically and otherwise specifically ‘tinged’ items and their associations dropped out of the list (the latter are mentioned above in the keyword-in-context section). Unlike keyword-in-context descriptions presented in the preceding paragraphs, proximity plots, as well as dendrograms, are based on (semi-)automated algorithms derived from calculations of association in a broader context (Moisl, 2015). Therefore, the proximity plot reflects more of the semantic association (conceptual fields or arrays) compared to the syntagmatic associations embodied in keyword-in-context analysis.

Dendrograms are visual representations of the strength of the consociation of lexemes/concepts on a large-scale textual level. For an adjusted 600-item mapping, the dendrogram generated by WordStat shows a single bundle



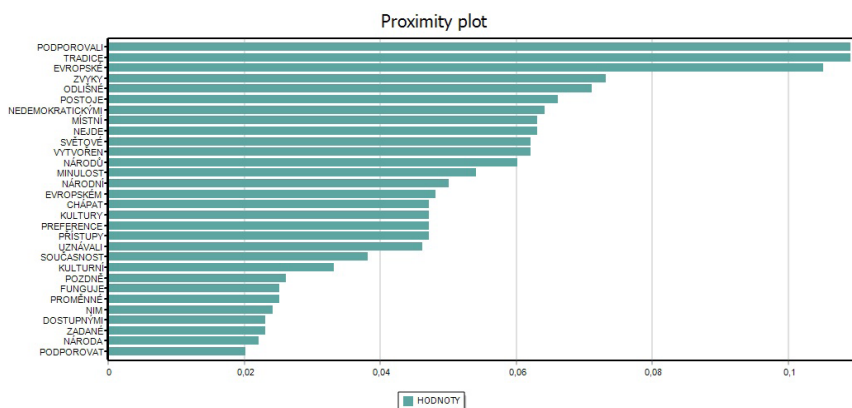


1 Figure: *Dendrogram section related to value – conceptual links to ‘attitude’ and ‘positive’*

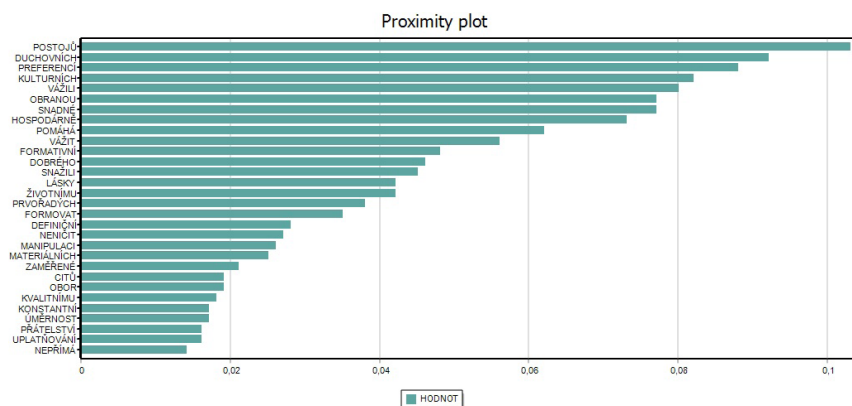
of concepts related to value in the national curricula corpus (see Figure 1). ‘Value’ (‘hodnota’), ‘attitude’ (‘postoj’) and ‘positive’ (‘pozitivní’) constitute a strongly related conceptual structure.

On multiplication of concepts involved in the analysis, we might expect the emergence of additional bundles, yet, with the increasing complexity of the graphic output. Therefore, a more detailed exploration of proximity and conceptual consociations was conducted by means of individual proximity plots (see below).

As indicated in Figure 2, the plural noun ‘values’ is markedly associated with a wide range of concepts, most strongly with ‘fostering’, ‘tradition’, ‘European’, ‘habits’, ‘preferences’ or ‘attitudes’, and verbs, including ‘to support’, ‘to understand’ and ‘to respect’. ‘Democratic/undemocratic’ or ‘cultural’ are some of the adjectives accompanying ‘values’ quite frequently. These findings corroborate the idea that socially established/socially desirable values need to be sought and developed, as they are not inherent ‘naturals’. Moreover, the values learners exhibit when entering schooleducation



2 Figure: *Proximity plot for ‘hodnoty’(‘values’)*

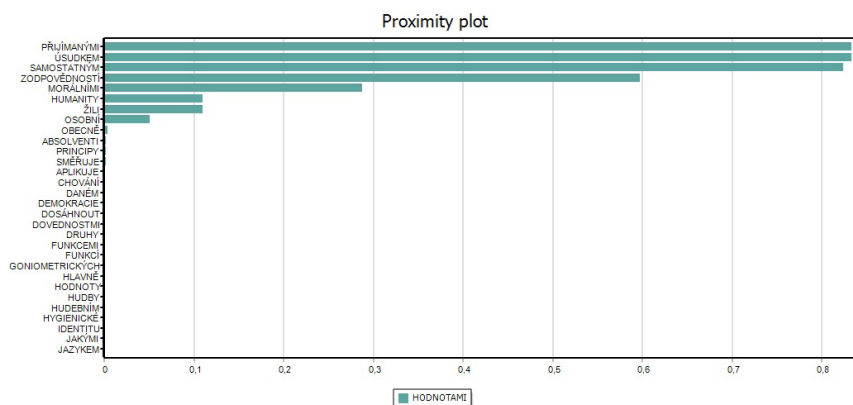


3 Figure: Proximity plot for 'hodnot' ('of values')

need not necessarily match the values expected as learning outcomes and the formative force of schooling is expected to transform them at least partially. Respect for values seems to represent a major challenge in this formative development.

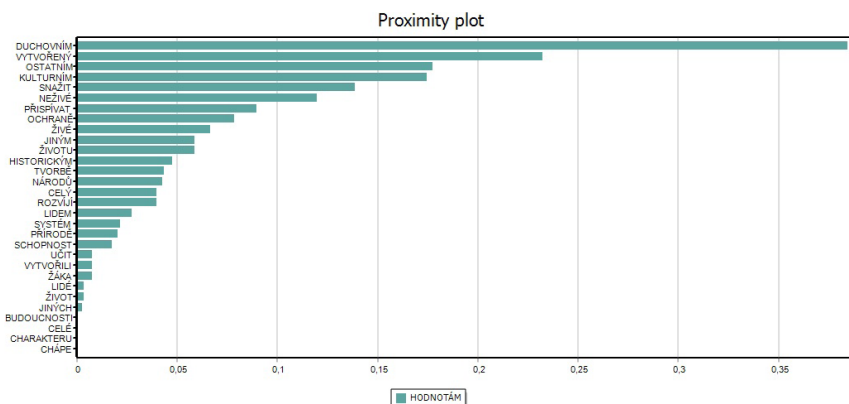
In Figure 3, the genitive plural 'hodnot' closely associates with attitudes, spirituality, preferences, culture, love, environment, frugality, material values and non-destruction. Respect for the pertinent values is, again, emphasized ('vážili', 'vážit') and the formative role of schooling is accentuated ('formativní'). The emphasis on spiritual values is of special interest since the area of spiritual axiology seems somewhat sidelined in the everyday workings of most educational institutions.

Figure 4 enlists proximity items for the instrumental plural 'hodnotami'. In this case, the number of strong associations is apparently more limited compared to the word forms discussed in the preceding proximity plots. Noticeable interconnections can only be identified with 'accepted', 'judgment', 'independent', 'responsibility', 'moral', 'humanity', 'to live (by)' and 'personal'. The presence of judgment in the latter subset connotes decision-making by discernment, indicating both the intimate link between values, reasoning and decisions, and the fact that cognitive and attitudinal variables are axiologically inseparable. Lived values and humanity appear to be foregrounded as 'ideal types' of values, indicating the limited worth of purely theoretical (proclaimed) value.

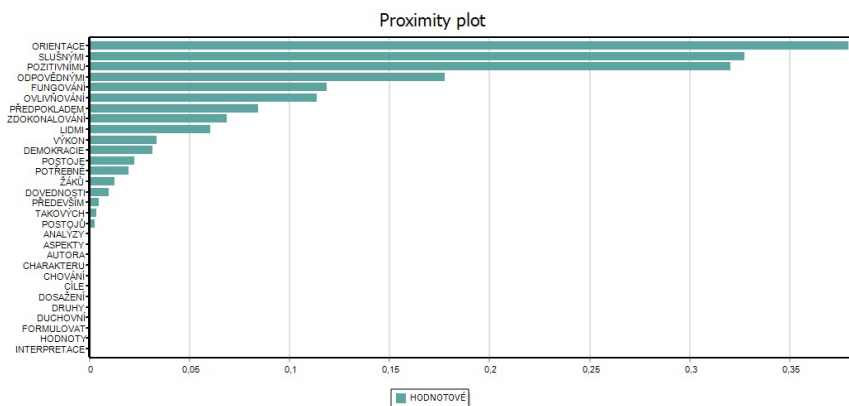


4 Figure: Proximity plot for 'hodnotami' ('by/with values')

In Figure 5, the plural dative 'hodnotám' maintains a number of varied associations, including 'spiritual', 'formed', 'others', 'cultural' or 'effort'. Life, humans, human products/history (including culture) and inanimate nature are mentioned as the target objects of respect and value. The verb 'to learn' is also slightly consorted to the dative, suggesting the role of educational processes in achieving a desirable value pattern in learners' personalities, leading to an outcome dimension of the Donabedian triad.



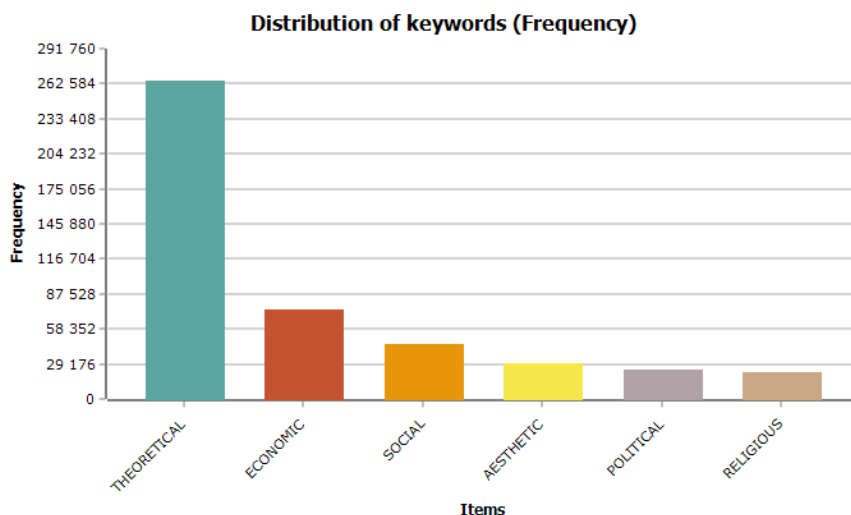
5 Figure: Proximity plot for 'hodnotám' ('for/to values')



6 Figure: Proximity plot for 'hodnotové' ('value-related')

Figure 6 visualizes associates for the adjective 'value-related'. 'Orientation' and 'decency' exhibit the strongest bond to the adjective. Other nouns and adjectives follow suit, including 'positive', 'responsible', 'functioning', 'influencing', 'improvement' or 'humans'. In sum, the concept of 'value orientation' and, hence, the system of values, seem to occupy the most prominent place in the latter comparison. The concept of 'orientation' implies the presence of direction and purpose, two philosophically significant notions that establish the foundations of teleology.

Finally, within Objective 3 of the present study, a tentative categorization analysis based on the Allport-Vernon-Lindzey classification of values was carried out in order to map the distribution of keywords related to particular value areas. The limitation of this procedure lies in that there always appears a subjective skew in selecting the categorial keywords pertinent to particular hyperonyms. To curb this limitation, we primarily included cognates of the value referents (theoretical, economic, social, aesthetic, political and religious) and the keywords that correspond to these categories in the fourth version of the Allport-Vernon questionnaire (Kopelman, Rovenpor & Guan, 2003). The QDAMiner environment was used for this purpose with appropriate keyword and text inputs, and a computed analysis was commenced. The results are shown in Figure 7, disclosing a possible bias toward the theoretical semantic field and theoretical values,



7 Figure: *Value categories according to Allport, Vernon & Lindzey as reflected in the national curricula corpus*  
(Allport, Vernon & Lindzey, 1960; Kopelman, Rovenpor & Guan, 2003)<sup>2</sup>.

incorporating keywords like *esteti\**, *hudb\**, *krás\**, *harmonie* (aesthetic domain), *poznán\**, *zkoum\**, *rozum\**, *vědeck\** (theoretical domain), *ekonom\**, *finan\**, *peněž\** (economic domain), *lásk\**, *dobrovolnic\**, *empati\**, *pomoc\** (social domain), *manaže\**, *mocn\**, *organiz\**, *politick\** (political domain), *duchovn\**, *etic\**, *morál\**, *nábož\** (religious domain). A total of 168 pre-set keywords with balanced distribution among the six domains were embedded in the categorisation grid.

Apparently, the theoretical domain prevails in terms of its representation in the national curricula. Economic and social values exhibit medium frequencies of occurrence, while aesthetic, political and religious domains constitute a minority. This distribution appears to corroborate the commonly accepted idea that contemporary schooling is orientated toward academic/theoretical values, contents and competences, yet, as has already been mentioned, this method of determining value distribution may be subject to

2 Based on WordStat categorisation analysis.

bias. Therefore, further study is warranted in this area. As an approximation, however, the overrepresentation of theoretical and underrepresentation of other values suggests that national curricula, whose content is definitely not free from values (as shown earlier) might need further adjustments in the future to comply with a balanced, multifaceted and harmonic development of the learner as a complex personality with a wide range of value dispositions, competences and other assets, including the ability to perform well-grounded value-driven decisions in a wide range of real-life settings and situations.

### **3. DISCUSSION**

Theoretical and empirical analyses by other authors indicate that education is imbued with values of various types, explicit or implicit (Göbelová, 2006; Pelcová, 2013). Axiological underpinnings in education exhibit geographical, as well as historical, changes and are informed by societal variables, and institutional rulings (including the national curricula), and, on the contrary, they inform the society's young generation and its preferences. Sometimes, various streams and skews can be identified in educational frameworks, as attested by the categorization analysis performed in our study and as documented by other authors. For instance, in reference to Robert J. Sternberg, the former president of the American Psychological Association, we find the following claim in Shealy (2016, p. c): "Educating our children, we as a society put great emphasis on knowledge and abstract analytical thinking... But if you look at what moves a society and changes it, you don't find knowledge and abstract analytical thinking having much to do with it. Rather, you find that societies move forward, and too often, backward, on the basis of the beliefs and values of their citizens and their leaders." National curricula in some countries have overtly professed their relation to value foundations for decades (e.g. the statement in the Department for Education and Employment, 1999, p. 10: "Education influences and reflects the values of society"), referring to cultural, moral and other value-laden aspects of the educational process.

Summarizing the results of our analysis, we may note the following: values and value judgment are present in the national curricula, the stepping stones of school curricula and further implementations in classroom settings, in both an explicit and an implicit manner. The explicit

embodiment of values, evaluation and, of course, pedagogical assessment is reflected in the lexical, collocational and textual structure of national curricula, referring to concepts of 'hodnota', 'hodnocení', 'hodnotný' and a number of others. Frequency analysis shows that explicit value concepts are present across the national curricula corpus in various contexts yet in frequencies and categorial distributions that might be indicative of the need for further strengthening and balancing the value scaffolding of primary and secondary education.

Contextual analysis based on keyword-in-context, dendrogram extraction, proximity plots and related hermeneutics suggests that value expressions are contextualized in a number of manners related to humanity, culture, national traditions, socially desirable behaviour and other variables that may be classed as philosophical-axiological in the narrow sense. Besides, implicit value positions are inherently present in the topicalization of the national curricula, as shown by categorization analysis and topic extraction procedures. Both types of values contained in the national curricula can be deemed the result (product) of some and the stepping stone (foundation) of other choices and decision-making procedures in a concomitant perspective.

Studies by other contributors to educational axiology underscore the complex nature of values embedded in schooling and corroborate some of our findings. A number of educational content analysis studies have recently been performed in various countries, yielding data from textbooks, national curricula, mission statements and other documents (Marquez, 2016 – a signalling-theory-based study; Akşan & Baki, 2017; Imada, 2012 – individual vs collective values in American and Japanese textbooks, respectively; Eltinge & Roberts, 1993). Incultation (in the positive sense) of values is considered an integral part of educational processes by the majority of researchers. Connolly & Penn-Edwards (2005), who also identified a body of nine values underscored in Australian educational frameworks, namely, compassion, doing one's best, common good/fairness, freedom, honesty, integrity, respect, responsibility and understanding, note that 'value incultation' is part of the teacher's pedagogical mission. Axiological calls for responsibility, compassion, respect, and freedom have also been attested in our national curricula analysis and may be expected to be present in curricular frameworks of the majority of school systems, representing value universals and core ethical principles.

Even though Hawkes (2010, p. 226), who is well aware of the emphasis the (British) National Curriculum places on general enduring values, moral development and integrity, succumbs to a somewhat pessimistic sentiment that the curriculum “offers little help to schools about how they might implement its spiritual, moral, social and cultural aim”, there is always enough space for the teacher to implant desirable, positive values into the subject content, being a role model or presenting examples of virtue- and value-based behaviour, possibly through historical or living examples and scenarios. In our view, the presence of value concepts, explicit or implicit, is strong enough in the Czech national curricula, yet, the real-life implementation of these is in the hands of respective educators and decision-makers at the school level and classroom level. Of course, there is still enough room to reinforce the value scaffolding with further values, to refine national curricular and school curricular content or to encompass a wider range of topics that would instil socially desirable preferences in the learners, capacitating them for responsible decisions in both the school setting and extramural life.

## **CONCLUSION**

Personal, professional, institutional and national values all play a part in education at all levels and forms, underlying the activity of students, teachers and policy-makers, who actually produce axiological clues at the macro level, setting a framework for schooling via the national curricula. In other words, value patterns constitute a crucial substratum of decision-making in education and elsewhere. As Lovat, Toomey & Clement (2010) confirm, values are closely linked to effective pedagogy, character formation and even student well-being, establishing a nexus between individual and societal dimensions. This premise justifies the exploration of values underlying educational structures, processes and outcomes on a systematic and regular basis.

Two pivotal questions need to be asked in terms of educational axiology – firstly: ‘What are the current value frameworks governing the decision-making processes of existing educational systems?’ (which may vary across the systems, of course), and, secondly: ‘Is there any space for improvement in the value frameworks to create a ‘better’ educational system?’ (If so, it is legitimate to ask what ‘improvement’ and ‘better’ mean, and what measures should be taken to accomplish this goal).



As shown by Wulf (Šedová, Švaříček & Wulf, 2012), cognitive, emotional, rational and economic aspects do not fully express what contemporary education should strive for. Wulf (*ibid.*, p. 4) states that “good school does not only focus on subject matter-oriented learning but also realizes other dimensions of human development” and supports his argument by adding that attitudes, values, norms and social patterns are part of the functioning of educational institutions. Values, learning outcomes/objectives, decisions and educational methods are closely intertwined. As Spielberg comments, “people are assumed to make their decisions depending on their preferences for the potential consequences (i.e. states or events) of the given options. Implicitly or explicitly, people evaluate these consequences, and the subjective values, called utilities, determine their decisions” (Spielberg, 2004, p. 571).

We have attempted to highlight some of the value priorities implemented in the current primary and secondary educational systems above. As shown in the content analysis performed via automated and person-driven methodologies, values that are firmly embedded in the educational framework in the Czech Republic include humanity, health, life, environmental protection, and various personality traits (e.g. responsibility, respect, compassion). With the evolution of knowledge, interpretation, values, technology and society as a whole, further changes and adaptations in the educational framework, its structure, content and functioning may be expected. Striving for quality outcomes and competent graduates, particular schools and the complexity of the whole educational system need to reflect upon the values they held in the past (or hold now) and the results they have yielded to date. If any of these are identified as suboptimal by detailed analysis, a shift, rearrangement or replacement of priorities and values should take place. The latter process of valuing and prioritizing clearly necessitates sound decision-making, and reversely, the values adopted at a given period will inform prospective decisions. This reciprocal interaction of values and decisions indicates that looking for a fit-for-purpose educational system is not only a cognitive feat but rather a combination of rational and value-laden choices that further impact each particular step in the educational process. Thus, properly reflected macro- and micro-level value-driven decisions, from the ministry to a particular classroom or teacher, may bring benefit to both the educator and the learner and enhance the society’s potential at large.

Natural language processing with interpretative content analysis combining quantitative and qualitative methodology appears a promising instrument to illuminate the value orientation of textbooks, school curricula, national curricula and other textual documents used in educational settings. This approach may produce a number of insights and new outlooks that may serve as useful feedback for educational policy and value-based formation of educational documents (including curricular design). Further research is warranted in this area.

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