Psychological Content Parameters of Professionally Significant Qualities of Future Managers in the Field of Education

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ABSTRACT

Aim. The aim of the research is to study the psychological content parameters of professionally significant qualities of future managers in the field of education.

Methods. The research sample comprised 124 people aged 19 to 35, including males (n = 62; 50.00%) and females (n = 62; 50.00%). At the time of confirmative empirical research, the respondents were pursuing a degree at higher education institutions in Kazakhstan. All the research participants were studying management in the field of education. The following methods were applied: "Questionnaire of the Style of Self-Regulatory Behaviour" Varvara Morosanova (1991), "Motivation of Professional Activity" (Rean et al., 2006), "Diagnostics of the Individual's Motivation Structure" V. Milman (1990), "Diagnostics of Personal Creativity" (Tunik, 2013), "Questionnaire for Diagnosing Personal Symptom Complex of Responsibility" (Kocharyan, 2011), and "Methodology for Studying the Level of Assertiveness" (Kappony & Novak, 1995).

Results. Seventeen statistically significant correlations were established, ten correlations being direct and seven correlations being inverse. It was found that planning is the most dependent and essential style of self-regulatory behaviour. It was established that assessing outcomes has the highest level of autonomy. There was a caveat that high autonomy of the style "assessing outcomes" poses a latent danger. The Student's t-test allowed us to find out that the parameters of cognitive, motivational, operational, personal, and communicative components have a statistical superiority in the levels of the styles of self-regulatory behaviour. It was substantiated that the motivational component is important in planning and modelling. It was established that the parameter self-affirmation has the largest number of superiorities in the styles of future managers' self-regulatory behaviour.

Conclusions. Future managers prefer planning, modelling and assessing outcomes styles of self-regulatory behaviour. The obtained results should be implemented in training future managers in the field of education.

Keywords: management, manager's motivation, decision-making, planning, modelling, programming, assessing outcomes, psychological content parameter

Introduction

Changes sweeping the education system require new approaches to educating professionals in all academic areas, including educational management. Developing the professionally significant qualities of future managers in the field of education will be essential for their growth as professionals and competitive managers in the context of their professional activities. Today's realities show that it is not enough to master the educational programs offered by universities. Managers must fulfil their responsibilities at the workplace. Moreover, it is extremely important for them to learn how to delegate tasks and efficiently

solve the delegated problems, set priorities predicting likely scenarios, successfully launch startups taking into account risks and opportunities for development, and constantly develop and improve themselves. Therefore, the research into the psychological content parameters of professionally significant qualities of future managers in the field of education is relevant, and the established scientific facts can help future professionals orient themselves in the diversity of current events and efficiently adapt to the changed conditions of social reality and job requirements.

Researcher Aizhana Kurmangalieva (2012) argues that the transition to a new model of management in the education system of Kazakhstan has had a considerable impact on the requirements for the professional competence of modern managers, shifting the focus from rationalistic and narrow professional skillsets to the holistic professional competence of the manager. In turn, it allows managers to manage flexibly under conditions of uncertainty, risks, information stress, globalization, and internationalization, maintaining individuality and national-cultural authenticity. The essential professionally significant qualities include predictability, multivariate managerial thinking, the ability to improve oneself, delegation skills, team-building skills, holistic vision of business processes, leadership skills, professional intuition, the ability to manage changes, a high level of information competence, cross-cultural ability to cope with growing stresses, social responsibility, and ethics, reorientation from typical rationalistic ways of decision-making to flexible and adequate ways that are specific for each situation. Therefore, the traditional understanding of professional education as a particular functional training of an individual for the field of management "as the impersonal process of adaptation" is the least appropriate (Kurmangalieva, 2012). Similarly, Shalkyma Kurmanalina et al. (2023) believe that it is necessary to pay attention to such qualities as strategic thinking, teamwork, result orientation, subordinates' development, leadership, problem analysis, and problem-solving when developing managerial competencies. University graduates should master the following key functions of the managerial competencies: systemic thinking, interdisciplinary communication, project and process management, working with It systems, teamwork, and working under uncertainty. Researchers Yernazar Ishanov and Akmaral Magauova (2021) focus on developing information management competence. The authors regard information management competence as a multicomponent ability of the individual that is characterised by a certain level of theoretical knowledge and practical skills, which are necessary for the management activities of a modern university. It is notable that the formation of managerial competencies for management in the field of education implies the ability to make informed decisions and work for future generations (Dymsza, 1982). This requires the integrity of the management cycle, which involves using planning skills, organisation of workflow, staff motivation, coordination of each component of the process and control of the management cycle.

Merl Baker (1993) highlights the importance of working with stakeholders. Fundamental educational needs require constructive interaction between education managers and employers, which will allow for alleviating concerns of universities about the future

of graduates and contribute to solving staffing issues regarding the quality of training future professionals. In this context, the opinion of Damien Page (2011), who believes that managerial positions should be designed, arouses scientific interest. The researcher emphasises that traditional approaches to organising work activities cause "job crafting". The author considers "idiosyncratic deals" (or "i-deals") to be more appropriate since they are positioned as joint negotiations that have the potential to satisfy the needs of the organisation and the employee (Page, 2011). The study by Jacqueline Baxter (2021) focuses on the importance of a constructive relationship between the past, present, and future in educational management. Researcher Charlotte Sortedahl et al. (2017) argue for the importance of inter-professional training for the future. They underscore that developing high-quality case-management can ensure a relevant approach to training managerial staff. In summary, the permanent focus on the future is appropriate and evident since it justifies itself. Our future is hardly predictable and is characterised by high temporal uncertainty. The changes made to the educational process by the pandemic effects (Kobylarek, Alaverdov et al., 2021), military conflicts, and other sociogenic challenges (Hipona, 2024) have affected the geopolitical contours of society and led to the development of the digital educational space (Odunlami, 2023; Reveszova, 2016). Ihor Popovych et al. (2024) maintain that the self-fulfilment of future professionals in the digital educational space is a dominant psycho-complex of internalized individual and typological characteristics of future teachers' professional activities. Actual types of self-fulfilment are based on creative thinking, flexible behaviour, independence in decision-making, value orientations, and time competence. Some studies demonstrate that the development of the creative component, which is accompanied by a high level of readiness to take risks to achieve success (Kariyev, Baydjanov et al., 2024; Kariyev, Orazbayeva et al. 2024), should imply a high level of responsibility (Zarichanskyi et al., 2023). Nowadays, these qualities in future managers are gaining particular importance.

Using the results of the retrospective analysis of scientific literature and taking into account the latest scientific studies, we identified five components of the professionally significant qualities of future managers in the field of education, namely the cognitive component, including such elements as the style of self-regulatory behaviour, professional awareness, the type of thinking, and the features of mental activity; the motivational component including success orientation, risk-taking, and attitudes towards one's profession; the operational component including creativity and organisational skills; the personal component including reflexivity, responsibility, and change readiness; and the communicative component including communication skills, assertiveness, and strategies for resolving conflicts.

The aim of the study is to delve into the psychological content parameters of professionally significant qualities of future managers in the field of education.

We hypothesize that: a) the psychological content parameters of professionally significant qualities of respondents will have direct and inverse bivariate correlations; b)

the levels of the styles of self-regulatory behaviour will have a significant statistical superiority in several examined parameters.

Methods

Methodology

The methodological foundation of the research comprises tenets of the activity and systemic approaches in psychological studies and the principles of professional development and personal growth, which have been confirmed in several modern empirical studies in the following spheres of personality: managerial (Kobylarek et al., 2022; Popovych, Lymarenko et al., 2020; Popovych, Zhigarenko et al., 2020), pedagogical (Havryliuk, 2022; Kobylarek, Plavčan et al., 2021), sports (Halian, Popovych, Hulias et al., 2023; Halian, Popovych, Vovk et al., 2023; Wanless & Naraine, 2021), and under changed conditions of social reality (Soroka et al., 2021).

Participants

The respondents participating in the empirical research were 124 people aged 19 to 35, including males (n = 62; 50.00%) and females (n = 62; 50.00%). At the time of the survey, the research participants were pursuing a degree in higher education institutions in Kazakhstan. All the respondents were majoring in education management. The descriptive characteristics of the age-related component of the sample are as follows: M = 24.88; SD = 4.15; Me = 25.00; min = 19.00; max = 35.00). It is notable that the research involved only those respondents who pursued a degree in the academic areas related to educational management.

Organisation of Research

The confirmative research strategy implied the collection of homogenous empirical data, correlation analysis, comparison of the examined parameters, and determination of the level of the key dimensions in the professionally significant qualities of the respondents. The theoretical-empirical research is included in the planned studies of the research work approved by the Scientific-Methodological Councils of Abai Kazakh National Pedagogical University (Almaty, Kazakhstan). The statements were prepared on standardized questionnaire forms. All the respondents filled out the questionnaire forms in the classroom (offline). The research participants were informed about the research aim and the possibility of ceasing their participation at any stage. The respondents' participation in the research was voluntary.

Procedures and Instruments

We selected a set of valid and reliable psycho-diagnostic tools that have been tested in numerous experimental studies. The use of Stapel's and Likert's direct and bipolar scales allowed us to objectively reflect the respondents' professionally significant qualities. The "Questionnaire of the Style of Self-Regulatory Behaviour" (QSSRB) by Varvara Morosanova (1991) was used to identify the formation of four individual styles of future managers' self-regulation. The methodology contained forty-six statements. The empirical data homogeneity according to Cronbach's alpha corresponding to a high level (Table 1). The questionnaire "Motivation of Professional Activity" (MPA) (Rean et al., 2006) was used to find the optimal motivational complex, which combined extrinsic and intrinsic motives on the three scales. The methodology contained seven statements. The empirical data homogeneity according to Cronbach's alpha corresponding to a high level (Table 1). The questionnaire "Diagnostics of the Individual's Motivation Structure" (DIMS) V. Milman (1990) allowed us to identify the respondents' stable trends. The methodology contained fourteen statements with seven answers for each. The empirical data homogeneity according to Cronbach's alpha corresponding to a medium level (Table 1). The methodology "Diagnostics of Personal Creativity" (DPC) (Tunik, 2013) allowed us to identify four features of the respondents' creativity. The methodology contained fifty statements. The empirical data homogeneity according to Cronbach's alpha corresponding to a medium level (Table 1). The methodology "Questionnaire for Diagnosing the Personal Symptom Complex of Responsibility" (QDPSCR) (Kocharyan, 2011) was applied to determine the indicators on the following scales. The methodology included sixty-seven statements. The empirical data homogeneity according to Cronbach's alpha corresponding to a high level (Table 1). The "Methodology for Examining the Level of Assertiveness" (MELA) (Kappony & Novak, 1995) allowed us to identify such dimensions of assertiveness as self-sufficiency and decisiveness. The methodology combined twenty-four statements. The empirical data homogeneity according to Cronbach's alpha corresponding to a medium level (Table 1).

Table 1
Statistical Data of the Psychodiagnostic Research Instruments

Scale	Measurement range	Statistical reliability (Cronbach's alpha), α
"QSSRB" by V. Morosanova (1991)		
Planning (PL)	.00 – 9.00	.933
Modelling (MD)	.00 – 9.00	
Programming (PR)	.00 – 9.00	
Assessing outcomes (AO)	.00 – 9.00	

Scale	Measurement range	Statistical reliability (Cronbach's alpha), α
Flexibility (F)	.00 – 9.00	
Independence (IN)	.00 – 9.00	
"MPA" (Rean et al., 2006)		
Intrinsic motivation (IM)	.00 – 5.00	. 972
External positive motivation (EPM)	.00 – 5.00	
External negative motivation (ENM)	.00 – 5.00	
"DIMS" (Milman, 1990)		
Life sustenance (LS)	.00 – 10.00	.786
Comfort (C)	.00 – 8.00	
Social status (SS)	.00 – 8.00	
Communication (CO)	.00 – 11.00	
General activeness (GA)	.00 – 8.00	
Creative activeness (CA)	.00 – 11.00	
Social usefulness (SUS)	.00 – 11.00	
"DPC" (Tunik, 2013)		
Curiosity (CR)	.00 – 24.00	.745
Imagination (I)	.00 – 24.00	
Complexity (CM)	.00 – 26.00	
Risk propensity (RP)	.00 – 26.00	
"QDPSCR" (Kocharyan, 2011)		
Adherence to principles (AP)	.00 – 12.00	.865
Self-affirmation (SA)	.00 – 12.00	
Normativity (NM)	.00 – 21.00	
Ethicalness (E)	.00 – 10.00	
Self-sacrifice (SSC)	.00 – 12.00	
"MELA" (Kappony & Novak, 1995)		
Self-sufficiency (SSF)	.00 – 8.00	.769
Decisiveness (D)	.00 – 8.00	

Source. Own research.

Statistical Analysis

The matrix of empirical data was prepared in the computer application "MS Excel". The statistical package "IBM SPSS Statistics" version 29.0.0.0 (241) was used for performing statistical operations. To establish statistically significant correlations, differences and superiorities, the following coefficients were used: Cronbach's (α),

the Kolmogorov-Smirnov (*Z*), Pearson (*R*), and the Student's t-test. The levels of significance at $p \leq .050$; $p \leq .010$ and $p < .001$ were considered in statistical calculations.

Results

According to the identified five components of the professionally significant qualities of future managers in the field of education, namely cognitive, motivational, operational, personal, and communicative, a set of psycho-diagnostic tools, which relevantly reflected the research subject, was selected. The cognitive component was examined using the "Questionnaire of the Style of Self-Regulatory Behaviour" (QSSRB) (Morosanova, 1991). The dimensions of the motivational component were identified using the questionnaires "Motivation of Professional Activity" (MPA) (Rean et al., 2006) and "Diagnostics of the Individual's Motivation Structure" (DIMS) (Milman, 1990). The content parameters of the operational component were found using the "Diagnostics of Personal Creativity" (DPC) (Tunik, 2013). The personal component was examined using the psycho-diagnostic tool "Questionnaire for Diagnosing the Personal Symptom Complex of Responsibility" (QDPSCR) (Kocharyan, 2011), and the operational component was studied by applying the "Methodology for Examining the Level of Assertiveness" (MELA) (Kappony & Novak, 1995). The "QSSRB" (Morosanova, 1991) allowed us to identify the prevalent styles of the respondents' self-regulatory behaviour and their characteristics. The styles of self-regulatory behaviour are the basis for studying the psychological content parameters of professionally significant qualities of future managers in the field of education. The main descriptive frequency characteristics of the examined parameters are given in Table 2.

Table 2
Parameters of the Descriptive Statistics of the Styles of Self-Regulatory Behaviour and their Characteristics (n = 124)

Scale	M	SD
Planning (PL)	6.21	±1.48
Modelling (MD)	4.97	±1.92
Programming (PR)	5.00	±2.13
Assessing outcomes (AO)	4.44	±1.96
Flexibility (F)	4.77	±1.91
Independence (IN)	5.21	±2.15

Note. M – the mean; SD – the standard deviation.

Source. Own research.

Since the measurement range of the scales of this methodology is the same, we argue that planning as a style of self-regulatory behaviour prevails in the research sample (*M*

= 6.21; *SD* = ±1.48). A slight superiority was recorded in the independence in decision-making (*M* = 5.21; *SD* = ±2.15) compared to flexibility. The above-average values on the scale "PL" indicate the formation of the need for conscious planning of activity. These research subjects can make realistic, detailed, hierarchical, and sufficiently stable plans. Future managers can formulate the goals and objectives of their activity independently. The below-average value of "F" can testify to a lack of experience and a strong desire to achieve the planned result. Table 3 shows the main descriptive frequency characteristics of the rest of the examined parameters.

Table 3

Parameters of the Descriptive Frequency Characteristics of Motivational, Operational, Personal, and Communicative Components (n = 124)

Scale	M	SD
Intrinsic motivation (IM)	4.13	±.97
External positive motivation (EPM)	2.32	±1.01
External negative motivation (ENM)	3.70	±1.21
Life sustenance (LS)	3.58	±1.64
Comfort (C)	3.95	±1.80
Social status (SS)	3.56	±1.66
Communication (CO)	3.56	±1.60
General activeness (GA)	3.77	±1.79
Creative activeness (CA)	3.89	±1.77
Social usefulness (SUS)	3.37	±1.60
Curiosity (CR)	6.24	±3.62
Imagination (I)	8.35	±4.80
Complexity (CM)	8.29	±4.55
Risk propensity (RP)	7.76	±4.38
Adherence to principles (AP)	3.90	±2.51
Self-affirmation (SA)	4.10	±1.83
Normativity (NM)	3.87	±2.28
Ethicalness (E)	3.76	±1.98
Self-sacrifice (SSC)	3.77	±2.01
Self-sufficiency (SSF)	5.03	±1.89
Decisiveness (D)	4.15	±1.68

Note. M – the mean; Me – the median; SD – the standard deviation.

Source. Own research.

The research sample is characterised by a high level of intrinsic motivation ($M = 4.13$; $SD = \pm.97$), medium values of extrinsic positive motivation and extrinsic negative motivation, and a medium level of the parameters of the individual's motivation, which were determined using the methodology "DIMS" (Milman, 1990). All the parameters of creativity have a below-average level. The only parameter "ethicalness" according to "QDPSCR" (Kocharyan, 2011 has a medium level ($M = 3.76$; $SD = \pm1.98$), the rest of the parameters have low values. The parameters of assertiveness – self-sufficiency (SSF) ($M = 5.03$; $SD = \pm1.89$) and decisiveness (D) ($M = 4.15$; $SD = \pm1.68$) – have medium values.

According to the strategy of confirmative research, we established statistical correlations between the styles of future managers' self-regulatory behaviour and the parameters of the motivational component. Since the empirical data corresponded to the normal distribution established using the Kolmogorov-Smirnov test (Z), Pearson's correlation coefficient (R) was legitimately used. Table 4 gives the matrix of statistically significant correlations established in the research.

Table 4

Matrix of Statistically Significant Correlations (by Pearson) between the styles of Self-Regulatory Behaviour and the Parameters of the Motivational Component (n = 124)

Scale	PL	MD	PR	AO
Intrinsic motivation (IM)	.128	.142	-.122	.013
Extrinsic positive motivation (EPM)	.017	.128	-.143	-.018
Extrinsic negative motivation (ENM)	.112	.184*	.035	.113
Life sustenance (LS)	.231**	.198*	-.177*	-.029
Comfort (C)	.298**	.193*	.072	-.008
Social status (SS)	-.062	.062	.046	-.021
Communication (CO)	.459**	.123	.038	.103
General activeness (GA)	.073	.097	.009	-.074
Creative activeness (CA)	.189*	.028	.064	.019
Social usefulness (SUS)	.070	.147	-.005	.015

Note. * – $p \leq .050$; ** – $p \leq .010$ and $p < .001$; MD – modelling; PR – programming; AO – assessing outcomes.

Source. Own research.

The interdependences of the styles of self-regulatory behaviour as a reflection of the individual's cognitive functions based on the key processes of planning, modelling, programming, and assessing outcomes with motivational intentions demonstrated a moderate number of correlations – eight: six direct correlations and one inverse correlation. It was found that planning is the most loaded style of the respondents' self-regulatory behaviour – four direct significant correlations: "life sustenance" ($R = .231$; $p = .010$); "comfort" ($R = .298$; $p < .001$); CO ($R = .459$; $p < .001$) and "creative

activeness" (R = .189; p = .036), followed by modelling with three direct correlations. It is important that planning has the strongest correlations. It was found that assessing outcomes has no significant correlations with the parameters of motivation.

Statistical correlations between the styles of the respondents' self-regulatory behaviour and the parameters of operational, personal, and communicative components were established. Table 5 gives the matrix of statistically significant correlations established in the research.

Table 5

Matrix of Statistically Significant Correlations (by Pearson) between the Styles of Self-Regulatory Behaviour and the Parameters of Operational, Personal, and Communicative Components (n = 124)

Scale	PL	MD	PR	AO
Curiosity (CR)	.003	.210*	-.204*	-.164
Imagination (I)	.113	-.252**	-.184*	-.143
Complexity (CM)	-.074	.014	-.044	.035
Risk propensity (RP)	.219*	-.030	-.090	-.026
Adherence to principles (AP)	-.122	.047	.079	.168
Self-affirmation (SA)	-.260**	-.152	.250**	.120
Normativity (NM)	-.156	-.124	.047	-.060
Ethicalness (E)	.140	.015	-.027	.019
Self-sacrifice (SSC)	-.017	-.048	.072	.017
Self-sufficiency (SSF)	-.183*	-.327**	-.052	.009
Decisiveness (D)	-.006	-.049	-.050	.015

Note. * – $p \leq .050$; ** – $p \leq .010$ and $p < .001$; PL – planning; MD – modelling; PR – programming; AO – assessing outcomes.

Source. Own research.

The interdependencies of the styles of self-regulatory behaviour with the parameters of operational, personal, and communicative components demonstrated a moderate number of correlations – nine: three direct correlations and six inverse correlations. Planning, modelling, and programming have three correlations each. Assessing outcomes has no significant correlation. The matrices of statistically significant correlations (Tables 4 and 5) allowed us to find that planning and modelling are the most dependent and significant styles of self-regulatory behaviour. Programming is the least dependent style of self-regulatory behaviour, and assessing outcomes is the most autonomous style and can pose a latent danger.

The next step was to identify significant superiorities in the examined parameters by the levels of the styles of self-regulatory behaviour. A number of comparative

statistical operations were performed for all the styles of self-regulatory behaviour using the Student's t-test. The parameters were divided into two groups by the median: Group 1 and Group 2. Group 1 – a low level of the examined parameter, and Group 2 – a high level of the examined parameter. Table 6 shows the results of comparing the parameters of future managers' styles of self-regulatory behaviour by grouping variable "Planning".

Table 6

Indicators of the Comparative Analysis of the Variances by Grouping Variable "Planning" between Group 1 and Group 2

Scale	Levene's test		t-test for equality of variances				d Coen's
	F	p	t	p	95 CI Lower	Upper	
F	.034	.855	-.848	.398	-.966	.387	-.156
IN	.450	.504	-1.223	.224	-1.225	.290	-.225
IM	.246	.621	-.724	.470	-.471	.219	-.133
EPM	2.076	.152	-2.359	.020	-.668	-.058	-.433
ENM	1.461	.229	-.462	.645	-.794	.416	-.085
LS	2.020	.158	-.617	.538	-1.49	-.257	-.113
C*	18.646	<.001	-2.960	. 004	-1.460	-.289	-.514
SS	.003	.954	1.133	.260	-1.665	-.637	.208
CO*	43.688	<.001	-4.988	<.001	-1.607	-.693	-.814
GA	1.565	.213	-.032	.975	-1.049	.202	-.006
CA*	7.973	.006	-1.384	.169	.026	-1.028	.182
SUS*	5.280	.023	1.998	.049	.003	1.304	.379
CR	.736	.393	-.215	.830	-2.375	1.182	-.039
I	1.053	.307	-.664	.508	-.056	3.315	-.122
CM	.014	.905	1.914	.058	-3.294	-.142	.352
RP	.086	.770	-2.158	.033	-.833	.823	-.396
AP	.020	.887	-.012	.991	-.185	1.169	-.002
SA	1.262	.264	1.439	.153	-.833	.823	.264
NM	1.241	.268	-.128	.898	-.813	.714	-.024
E	.268	.606	-.826	.410	-1.040	.427	-.152
SSC	.477	.491	-.827	410	-1.026	.422	-.152
SSF	.084	.773	1.200	.232	-.252	1.029	.220
D	.081	.777	-.303	.762	-.767	.563	-.056

Note. * – data are presented using Welch's t-test because of uneven variance; Group 1 – a low level of the grouping variable; Group 2 – a high level of the grouping variable; F – Levene's test for equality of variances (two levels of variance); p – statistical significance; t – Student's t-test; SE – standard error; 95 CI – confidence interval; d Coen's – effect size; F – flexibility, In – independence, IM – intrinsic motivation, EPM – extrinsic positive motivation, ENM – extrinsic negative, LS – life sustenance, C – comfort, SS – social status, CO – communication, GA – general activeness, CA –

creative activeness, SUS – social usefulness, CR – curiosity; I – imagination, CM – complexity, RP – risk propensity, AP – adherence to principles, SA – self-affirmation, NM – normativity, E – ethicalness, SSC – self-sacrifice, SSF – self-sufficiency, D – decisiveness.
Source. Own research.

We argue that Group 2 has five significant superiorities in the style of self-regulatory behaviour "Planning": "extrinsic positive motivation" (t = -2.359, p = .020, d = -.433); "comfort" (t = -2.960, p = .004, d = -.514); "communication" (t = -4.988, p < .001, d = -.814); "social usefulness" (t = 1.998, p = .049, d = .379); "risk propensity" (t = -2.158, p = .033, d = -.396). It is notable that Group 1 has no significant superiorities. Thus, the respondents, who have a tendency for planning as a dominant style of self-regulatory behaviour, are characterised by a reliable advantage in the parameters of "extrinsic positive motivation", "comfort", "communication", "social usefulness" and "risk propensity". Table 7 shows the results of comparing the parameters of future managers' styles of self-regulatory behaviour by grouping variable "Modelling".

Table 7
Indicators of the Comparative Analysis of the Variances by Grouping Variable "Modelling" between Group 1 and Group 2

Scale	Levene's test		t-test for equality of variances				d Coen's
	F	p	t	p	95 CI Lower	Upper	
F	.237	.627	1.853	.033	-.041	1.270	.334
IN	.013	.910	-1.743	.042	-1.388	.088	-.314
IM	2.824	.095	-1.339	.092	-.564	.108	-.312
EPM	.000	.989	-.734	.232	-.418	.191	-.132
ENM*	6.986	.009	-1.691	.094	-.812	.065	-.312
LS	.095	.758	-1.315	.096	-.982	.198	-.237
C	2.967	.087	-2.654	.005	-1.424	-.207	-.478
SS	2.744	.100	.962	.169	-.303	.878	.173
CO	3.012	.085	-1.680	.048	-.992	.081	-.303
GA	.003	.956	-.393	.348	-.762	.509	-.071
CA	.148	.701	-.590	.278	-.801	.433	-.106
SUS	1.832	.178	.331	.371	-.521	.731	.060
CR	.173	.678	-.196	.422	-1.602	1.313	-.035
I	.384	.536	1.019	.155	-.844	2.636	.184
CM	.112	.738	1.073	.143	-.764	2.575	.193
RP	.068	.795	-1.042	.150	-2.393	.742	-.188
AP	1.111	.294	.777	.219	-.492	1.128	.140
SA	1.579	.211	2.135	.017	.051	1.366	.385
NM	2.333	.129	.812	.209	-.440	1.053	.146
E	.044	.835	.436	.332	-.562	.879	.079

Scale	Levene's test		t-test for equality of variances				d Coen's
	F	p	t	p	95 CI Lower	Upper	
SSC	.229	.633	-.256	.399	-.803	.620	-.046
SSF	2.210	.140	1.641	.052	-.106	1.143	.296
D	2.230	.138	-.737	.231	-.893	.408	-.133

Note. * – data are presented using Welch's t-test because of uneven variance; Group 1 – a low level of the grouping variable; Group 2 – a high level of the grouping variable; F – Levene's test for equality of variances (two levels of variance); p – statistical significance; t – Student's t-test; SE – standard error; 95 CI – confidence interval; d Coen's – effect size; F – flexibility, In – independence, IM – intrinsic motivation, EPM – extrinsic positive motivation, ENM – extrinsic negative, LS – life sustenance, C – comfort, SS – social status, CO – communication, GA – general activeness, CA – creative activeness, SUS – social usefulness, CR – curiosity; I – imagination, CM – complexity, RP – risk propensity, AP – adherence to principles, SA – self-affirmation, NM – normativity, E – ethicalness, SSC – self-sacrifice, SSF – self-sufficiency, D – decisiveness.

Source. Own research.

We argue that Group 2 has five significant superiorities in the style of self-regulatory behaviour "Modelling": "flexibility" (t = 1.853, p = .033, d = .334); "independence" (t = -1.743, p = .042, d = -.314); "comfort" (t = -2.654, p = .005, d = -.478); "communication" (t = -1.680, p = .048, d = -.303); "self-affirmation" (t = 2.135, p = .017, d = -.385). It is notable that Group 1 has no significant superiorities. Thus, the respondents, who have a tendency for modelling as a dominant style of self-regulatory behaviour, are characterised by a reliable advantage in the parameters of "flexibility", "independence", "comfort", "communication" and "self-affirmation". Table 8 shows the results of comparing the parameters of future managers' styles of self-regulatory behaviour by grouping variable "Programming".

Table 8
Indicators of the Comparative Analysis of the Variances by Grouping Variable "Programming" between Group 1 and Group 2

Scale	Levene's test		t-test for equality of variances				d Coen's
	F	p	t	p	95 CI Lower	Upper	
F	1.107	.295	.484	.315	-.504	.831	.087
IN*	11.072	.001	-.590	.557	-.951	.515	-.106
IM	2.826	.095	.888	.188	-.186	.489	.160
EPM	.082	.775	.063	.475	-.297	.316	.011
ENM	3.119	.080	.353	.362	-.356	.511	.064

Scale	Levene's test		t-test for equality of variances				d Coen's
	F	p	t	p	95 CI Lower	Upper	
LS*	5.319	.023	1.466	.073	-.154	1.035	.266
C	.152	.698	.683	.248	-.411	.844	.123
SS	.511	.476	-.269	.394	-.676	.514	-.049
CO	.186	.667	-.622	.268	-.713	.372	-.112
GA	.001	.974	-.076	.470	-.663	.614	-.014
CA	.061	.805	-.462	.322	-.754	.468	-.083
SUS	.143	.706	.612	.271	-.434	.822	.110
CR	.817	.368	1.951	.027	-.021	2.852	.352
I	.212	.646	-.023	.491	-1.774	1.733	-.004
CM	.025	.874	-1.269	.103	-2.732	.597	-.229
RP	.311	.578	1.202	.116	-.616	2.521	.217
AP*	3.943	.049	-.345	.365	-.955	.672	-.062
SA*	3.987	.048	-2.728	.007	-1.547	-.245	-.491
NM	.214	.644	.328	.372	-.628	.877	.059
E	.016	.899	.705	.241	-.462	.973	.127
SSC	1.578	.212	1.048	.148	-.297	.967	.143
SSF	.054	.817	-.199	.421	-.712	.581	.189
D	1.107	.295	.484	.315	-.504	.831	-.036

Note. * – data are presented using Welch's t-test because of uneven variance; Group 1 – a low level of the grouping variable; Group 2 – a high level of the grouping variable; F – Levene's test for equality of variances (two levels of variance); p – statistical significance; t – Student's t-test; SE – standard error; 95 CI – confidence interval; d Coen's – effect size; F – flexibility, In – independence, IM – intrinsic motivation, EPM – extrinsic positive motivation, ENM – extrinsic negative, LS – life sustenance, C – comfort, SS – social status, CO – communication, GA – general activeness, CA – creative activeness, SUS – social usefulness, CR – curiosity; I – imagination, CM – complexity, RP – risk propensity, AP – adherence to principles, SA – self-affirmation, NM – normativity, E – ethicalness, SSC – self-sacrifice, SSF – self-sufficiency, D – decisiveness.

Source. Own research.

We argue that Group 2 has five significant superiorities in the style of self-regulatory behaviour "Programming": "curiosity" (t = 1.951, p = .027, d = .351) and "self-affirmation" (t = -2.728, p = .007, d = -.491). It is notable that Group 1 has no significant superiorities. Thus, the respondents, who have a tendency for programming as a dominant style of self-regulatory behaviour, are characterised by a reliable advantage in the parameter of "self-affirmation". Table 9 shows the results of comparing the parameters of future managers' styles of self-regulatory behaviour by grouping variable "Assessing outcomes".

Table 9
Indicators of the Comparative Analysis of the Variances by Grouping Variable "Assessing outcomes" between Group 1 and Group 2

Scale	Levene's test		t-test for equality of variances				d Coen's
	F	p	t	p	95 CI Lower	Upper	
F*	4.222	.042	-2.094	.038	-1.296	-.035	-.360
IN	1.127	.291	2.063	.021	.032	1.529	.379
IM	.913	.341	-.822	.206	-.487	.201	-.151
EPM	1.173	.281	.483	.315	-.235	.387	.089
ENM	.467	.496	-.919	.180	-.644	.235	-.169
LS	2.797	.097	.045	.482	-.592	.619	.008
C	.451	.503	.321	.374	-.534	.741	.059
SS	.235	.629	.022	.491	-.597	.611	.004
CO	.704	.403	-.738	.231	-.758	.346	-.136
GA	.057	.811	-.754	.226	-.893	.400	-.139
CA	.017	.897	-.376	.354	-.749	.510	-.069
SUS	.233	.630	.354	.362	-.524	.752	.065
CR	.006	.940	1.094	.138	-.662	2.296	.201
I	.883	.349	-.025	.490	-1.804	1.759	-.005
CM	.249	.619	-.496	.310	-2.137	1.280	-.091
RP	1.879	.173	.378	.353	-1.298	1.911	.069
AP*	4.254	.041	-2.183	.031	-1.618	-.078	-.379
SA	.272	.603	-2.032	.022	-1.360	-.017	-.373
NM	.270	.604	1.101	.136	-.337	1.182	.202
E	1.036	.311	.813	.209	-.432	1.034	.149
SSC*	6.334	.013	-.961	.169	-1.028	.356	-.169
SSF	.650	.422	-1.303	.098	-1.061	.218	-.239
D*	8.142	.005	-.379	.353	-.845	.574	-.074

Note. * – data are presented using Welch's t-test because of uneven variance; Group 1 – a low level of the grouping variable; Group 2 – a high level of the grouping variable; F – Levene's test for equality of variances (two levels of variance); p – statistical significance; t – Student's t-test; SE – standard error; 95 CI – confidence interval; d Coen's – effect size; F – flexibility, In – independence, IM – intrinsic motivation, EPM – extrinsic positive motivation, ENM – extrinsic negative, LS – life sustenance, C – comfort, SS – social status, CO – communication, GA – general activeness, CA – creative activeness, SUS – social usefulness, CR – curiosity; I – imagination, CM – complexity, RP – risk propensity, AP – adherence to principles, SA – self-affirmation, NM – normativity, E – ethicalness, SSC – self-sacrifice, SSF – self-sufficiency, D – decisiveness.

Source. Own research.

We argue that Group 2 has five significant superiorities in the style of self-regulatory behaviour "Assessing outcomes": "flexibility" (t = -2.094, p = .038, d = -.360); "in-

dependence" (t = 2.063, p = .021, d = .379); "adherence to principles" (t = -2.183, p = .031, d = -.379) and "self-affirmation" (t = -2.032, p = .022, d = -.373). It is notable that Group 1 has no significant superiorities. Thus, the respondents, who have a tendency for assessing outcomes as a dominant style of self-regulatory behaviour, are characterised by a reliable advantage in the parameters of "flexibility", "independence", "adherence to principles" and "self-affirmation".

Discussions

The problem of psychological content parameters of the professionally significant qualities of future managers in the field of education or any other field of activity is not new. In the scientific literature, there are fundamental and applied studies which reveal important facts about the art of management (Watson, 1993; Wolstencroft & Lloyd, 2019). The education of future professionals who take Bachelor's and Master's degree courses should be delivered considering the prognostic component and changes in social reality that will be relevant at the time of professionals' graduation (Mackenzie, 1989; Marchant, 2021). Well-trained future managers should have a sufficient level of self-regulation readiness for entering the management space of a social community. The rapid changes sweeping our society have significantly affected the value orientations of young people (Duisenbayeva et al., 2024; Moldakhanova et al., 2024) and made them search for effective and reliable methods for solving urgent problems. Accordingly, in this context, the development of time competence and the ability to predict and create the future can be included in the list of those competencies that will allow managers to make constructive decisions and respond to today's requests on time. Social transformations permanently cause new challenges and offer new opportunities for people. The development of cases for management, which will be focused on the problem-solving model rather than the ready-made situational solutions, prompted us to pay attention to one of the key psychological content parameters – the style of self-regulatory behaviour of the future manager. Identifying the styles allowed us to position the obtained results efficiently, systematize them and not dwell on another list of significant qualities, though this is also important. We consider this approach to be an efficient theoretical-empirical search for systematized relevant psychological content parameters of the research subject.

The retrospective analysis prompted us to focus on the five-component structure of the professionally significant qualities of future managers in the field of education. The selected psycho-diagnostic tools, which combined twenty-seven parameters, allowed us (Tables 2 and 3) to represent each component of the randomly organised research sample qualitatively. At the stage of identifying descriptive frequency characteristics (Tables 2 and 3), the values of the parameters "planning", "independence", "intrinsic motivation", "ethicalness", and "self-sufficiency" outlined the trends

of the probable profile of the professionally significant qualities of future managers in the field of education and indicated the real state of the examined problem. The empirical data homogeneity (Cronbach's alpha), the normal distribution (the Kolmogorov-Smirnov test (*Z*)), and statistical manipulations with empirical measurements (Pearson's correlation coefficient (*R*)) allowed us to reveal reliable scientific facts. The established correlations confirmed that planning is important as a style of self-regulatory behaviour and demonstrated relationships with all the parameters (Tables 4 and 5). It was found that modelling is the second most important style of self-regulatory behaviour after planning, since it has significant correlations with the examined parameters. It was established that programming is a low-dependent style whereas assessing outcomes has the highest level of autonomy. There is a caveat that high autonomy of "assessing outcomes" may pose a latent danger. This danger can be explained by the respondents' permanent workloads and low efficacy. Routine, a lack of delegation, and the desire to perform tasks independently because it is more reliable than organising or training subordinates are those factors that cause managers' low efficacy. The procedural component of education usually leads to maximum workloads of teachers and management staff and weakens the connection with the assessment of outcomes. The first hypothesis is confirmed since the psychological content parameters of the respondents' professionally significant qualities have direct and inverse bivariate correlations (Tables 4 and 5). Planning and communication have the strongest direct correlation ($R = .459$; $p < .001$). Planning through effective interaction and constructive information channels can ensure its quality implementation. Communication plays a key role in these processes and performs an operational function. Modelling has the strongest inverse correlation with the parameter of assertiveness "self-sufficiency" ($R = -.327$; $p < .001$). Obviously, the desire for autonomy in making managerial decisions does not contribute to creating new models that will be focused on effective managerial decisions. On the contrary, it can actualise the defence mechanisms and destructive coping strategies – confrontation and distancing (Popovych et al., 2023).

The next legitimate and logical stage of the research design involved identifying significant superiorities in the examined parameters by the levels of the styles of self-regulatory behaviour. The recorded significant superiorities of the parameters (Table 6–9) in each style of self-regulatory behaviour demonstrated not only their formedness but also focused attention on the components represented by them. It was found that the value of the motivational component in planning and modelling is the highest – two parameters: "communication" and "comfort". It is noteworthy that the operational component has the largest number of superiorities (six) at a level of $p \leq .010$ and $p < .001$ in the three styles of self-regulatory behaviour (Table 6–8): planning, modelling, and programming. Obviously, the parameters of personal creativity are important for implementing management activities of future managers. The second hypothesis is confirmed since the levels of the styles of self-regulatory behaviour will have significant statistical superiorities in a number of examined parameters. The proposed

structure of the components, styles of self-regulatory behaviour, and characteristics are those psychological content parameters which reflect the professionally significant qualities of future managers in the field of education.

Conclusions

It was substantiated that the five components, namely cognitive, motivational, operational, personal, and communicative, make up a five-component structure of the professionally significant qualities of future managers in the field of education. Seventeen statistically significant correlations were established, ten of them being direct and seven being inverse. It was found that planning is the most dependent and important style of the respondents' self-regulatory behaviour. Modelling is the second important style after planning. It was established that programming is a low-dependent style, and assessing outcomes has the highest level of autonomy. There is a caveat that high autonomy of the style "assessing outcomes" poses a latent danger. It was substantiated that the respondents' permanent workloads can be accompanied by low efficacy. It was emphasised that the procedural component of the field of education usually causes the maximum workloads of teachers and management staff and weakens the connection with the assessment of outcomes. It was underscored that communication plays an operational role in planning managerial activities. The significant superiorities of the examined parameters in the levels of the styles of self-regulatory behaviour demonstrated the importance of the motivational component in planning and modelling. It was found that the parameter self-affirmation has the largest number of superiorities in the styles of future managers' self-regulatory behaviour.

The aim was achieved and the hypotheses were confirmed. The obtained results should be considered by universities that educate future managers in the field of education.

Research Restrictions

The proposed research presents theoretical substantiation, empirical measurement, and statistical operations performed on a representative sample of the respondents' psychological content parameters. Five components of the professionally significant qualities of future managers in the field of education were identified as a result of retrospective analysis. The proposed model was not statistically tested but created as a hypothetical construct. Accordingly, the selection of psycho-diagnostic tools, though meeting all the requirements for the proposed level of research, can have a wide range of variability that will change the content. These aspects constitute the main limitations of the proposed study. The obtained results allowed us to establish interesting scientific facts, which should be further examined and verified using alternative psycho-diagnostic and statistical research methods.

Cognitive Value

It was established that planning is the most dependent and essential style of future managers' self-regulatory behaviour, whereas modelling is the second important style after planning. It was found that programming is a less dependent style than the previous ones, and assessing outcomes has the highest level of autonomy. The operational role of communication in planning and modelling managerial activities was underscored. It was found that communication contributes to effective interaction and constructive work of informational channels in planning, and self-sufficiency has an inverse effect on modelling, which can actualise defence mechanisms and destructive coping strategies such as confrontation and distancing. It was statistically proved that the parameter self-affirmation has the largest number of superiorities in the styles of the respondents' self-regulatory behaviour.

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