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## Generational Differences in Teachers' Professional Competencies

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**Abstract:** The study focused on generational differences in teachers' professional competencies (interaction styles, teaching styles and didactic competencies) and motivation for the teaching profession. A total of 462 teachers (20 students with at least a bachelor's degree; age:  $M = 43.36$ ,  $SD = 11.05$ ) participated in the study. The Questionnaire on Teacher Interaction (Slovak version), the Slovak Teaching Style Questionnaire, the Didactic Competencies Questionnaire and the Scale of Motivations for Choosing Teaching as a Career were administered. Teachers were divided into generations (Baby Boomers, born up through 1964; Generation X, born 1965 – 1980; Generation Y, born 1981 – 1996; Generation Z, born 1997 and later). The main finding of the study was that there were significant generational differences in professional competencies but no differences in motivation for the teaching profession. On the other hand, there were strong preferences for the leadership, helpful, student-teacher responsibility, understanding interaction styles and the supporting teaching style. Baby Boomers were also knowledge-oriented, Generations X and Y also goal-oriented, and Generation Z also preferred a managerial style. From didactic competencies, Baby Boomers were best in self-reflection and the realization of teaching; Generations X and Y were best in self-reflection and maintaining a positive classroom climate, and Generation Z was good in the realization of teaching.

**Keywords:** *Cognitive ability, didactic competencies, interaction style, motivation for the teaching profession, teaching style.*

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### Introduction

Recent years have brought crucial social challenges and highlighted the differences in how people are coping with these changes. Many of these challenges relate to education and the teaching profession. The way teachers deal with such societal changes is influenced by several types of factors: personality, emotional, cognitive, cultural, etc. (Ballová Mikušková & Verešová, 2020; Frenzel et al., 2009; Göncz, 2017; Hofstede, 1986; Kokkinos, 2007; Makhwathana et al., 2017). Other factors may also play a role – age and the time period in which people were born and grew up. Belonging to a particular generation makes a difference in individual characteristics, coping strategies, motivation, attitudes toward work, and self-development, as well as competencies (Moreno-Walton et al., 2009; Romanes & Veniegas, 2018). Moreover, knowing generational specifics is important for understanding generational differences between teachers and students, as they may bring different attitudes and expectations (Van Damme, 2014).

#### *Generation Differences in Education*

Generations differ according to which world events and advances have influenced their individual development (Lissitsa & Laor, 2021; Zemke et al., 2013). Research on generational differences has been conducted particularly in the workplace and marketing (Kraus, 2017; Zemke et al., 2013). However, these findings have only general applicability. The present study focused on the currently economically active generations: the Baby Boomers and Generations X, Y and Z. Due to different historical development, this classical distinction is not valid for all countries. Slovakia was part of the Eastern Bloc, so the Baby Boomer generation and Generation X, in particular, have their own peculiarities in these countries.

Baby boomers comprise people born after the Second World War (before and including 1964), in a time of economic prosperity and growth in the Western part of the world. In general, this generation grew up in turbulent times and espoused new and traditional values; they typically lacked technological knowledge (Venter, 2017). Moreover, this generation-built socialism in the then Czechoslovakia, so they did not experience and learn about capitalism until after the revolution in 1989 (Smolka, 2019): they typically focus on traditions, prefer their own experience and remain loyal to what has been tried and tested for years, as well as being thrifty and refusing to invest in new things.

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Generation X are those born from 1965 through 1980; they grew up with uncertainty (financial, family and social), social change and diversity (Jurkiewicz & Brown, 1998; Kraus, 2017; Smola & Sutton, 2002). These individuals tend to be independent and skeptical (Glass, 2007; Venter, 2017).

People from Generation Y, born 1981 – 1996, are also called Millennials. They were raised by protective parents and received support from loved ones. Now, they seek to connect with family and friends (often through digital devices) but usually start a family later compared to previous generations (Kraus, 2017; Zemke et al., 2013). They are also familiar with new, innovative, digital technologies: they are digital natives (Prensky, 2001) or the Net/Web/Google generation. Millennials are often dissatisfied, try to drive change and demand benefits from their employer (more vacation, flexible working hours or a home office). In Slovakia, the people of this generation lived under socialism for only a few years, so their differences from other Millennials in the world are minimal (Smolka, 2019).

Finally, Generation Z (born 1997 – 2010) consists of young people who grew up “in clover” and have been exposed to digital technologies and the Internet since their earliest youth. They seem to be a generation of rebels for whom nothing is good enough, who are not satisfied with anything and who like to criticize everything. However, these are generally characteristics of all young people, so it is difficult to consider this generation as profiled (Smolka, 2019).

### *Professional competencies of teachers and generational differences*

Professional standards for teachers in Slovakia are based on the competency model of Kasáčová and Kosová (Kasáčová, 2006; Kasáčová et al., 2006), which includes student-centered competencies, competencies focused on educational processes and the self-development competencies of teachers (the ability to adapt educational content to the needs of teaching, the ability to create conditions for education). In the present study, professional competencies were defined as didactic competencies, interaction and teaching styles. Didactic competencies refer to professional knowledge, processes of designing teaching as well as assessment (Šuťáková, 2017; Šuťáková & Ferencová, 2017), and they are key competencies for implementing the teaching process (Rovňanová, 2015). The way teachers approach their teaching is referred to as the preferred teaching style and has implications for managing processes and socializations in classes, as well as student satisfaction and achievement (Ford II et al., 2016; Grasha, 2002; Mohanna et al., 2008). Finally, professional competencies include student-teacher interactions that influence the classroom climate and student relationships (Fenyvesiová, 2006; Fenyvesiová & Tirpáková, 2005; Gavora et al., 2005). The interaction styles in the present study are based on Leary’s model of personality (Leary, 1957) and the model of teachers’ interaction behavior (Wubbels et al., 1987), and they locate teachers’ styles in the dimensions of cooperation and control of communication.

Becoming a teacher requires a special motivation. The most common motives are intrinsic, extrinsic, altruistic and teaching as an alternative career choice (Alexander et al., 1994; Giersch et al., 2021; Şahin, 2014; Tomšík & Verešová, 2016). Intrinsic motives include intrinsic interest in the profession, positive prior experiences with teaching and self-perception of one’s prerequisites to become a teacher; on the other hand, external motives include benefits and salary, perceived social status of teachers and the influence of others. When the teaching profession is understood as a mission, it is usually referred to as an altruistic motivation: such teachers want to work with children or young people and have a motivation for prosocial behavior. A special type of motivation is the teaching profession as an alternative choice when the primary career choice could not be realized.

There is a lack of studies on generational differences among teachers, and the few that have been conducted are focused, for example, on teachers’ skills (e.g. Moreno-Walton et al., 2009), professionalism (Borrero et al., 2008) or emotional responses (Hargreaves, 2005). Romanes and Veniegas (2018) and found the older generation (boomers) to be lacking in 21st century skills but with the expertise to utilize these skills. Most of the literature deals with the generation gap between teachers and students (Hart, 2017) or between students (Garcia & Qin, 2007). Thus, the present study focused on the possible effects of generational differences on teachers’ professional competencies (including motivation for the teaching profession), whether teachers from different generations differ in their didactic competencies, interaction and teaching styles and motivations for the teaching profession.

## **Methodology**

### *Research Design*

Data were collected in the fall of 2021 via an online form (in-service teachers) and a paper form (pre-service teachers) and were fully anonymous. Participants were entered into a drawing for vouchers (valued at € 30, €20, and €15 for the purchase of books) and book sets (produced by the department). The study was conducted in compliance with the ethical principles introduced by the American Psychological Association. After consenting to participate in the study, each participant completed a battery of instruments measuring professional competencies: a Slovak version of the Questionnaire on Teacher Interaction – Self-assessment, the Slovak Teaching Style Questionnaire, the Didactic Competencies Questionnaire and the Scale of Motivations for Choosing Teaching as a Career.

### *Sample and Data Collection*

A total of 1,055 pre-service and in-service teachers participated in the study, though only 442 in-service teachers (88.7% women; aged 21 – 70 years,  $M = 44.29$ ;  $SD = 10.38$ ) and 20 pre-service teachers with at least a bachelor's degree (95% women; aged 22 – 24 years,  $M = 22.80$ ;  $SD = 0.70$ ) were included in the analysis. In-service teachers were invited to take part in the study through email – all preschool, elementary and high schools in Slovakia were contacted. Pre-service teachers were asked for participation during courses in the winter semester.

In the online version of the instruments (in-service teachers), the items were set as mandatory, so we had data only from those who completed the complete instruments. In the paper version, only those participants (pre-service teachers) who filled in all the instruments were included in the analyses (the maximum limit of unfilled items was 3 for each instrument); 18 students were excluded from the research due to incomplete data. Participants were divided into four generations: Baby Boomers (born before 1964,  $n = 63$ ), Generation X (born 1965 – 1980,  $n = 205$ ), Generation Y (born 1981 – 1996,  $n = 160$ ), Generation Z (born 1997 and later,  $n = 34$  – mostly pre-service teachers).

### *Measurements*

The instrument measuring their motivation for the teaching profession was administrated together with methods measuring professional competencies (interactional style, teaching style and didactic competencies). Participants also completed other instruments measuring their cognitive abilities and personality. To prevent method bias (Kock et al., 2021), the order of the methods was set to alternate self-statement methods (for example, professional competencies questionnaires) with performance methods (for example cognitive abilities tests). Participants were asked to express agreement with statements and were assured that there were no correct answers in the self-rated instruments. Moreover, method bias was checked using Harman's single factor test, and the variance associated with the first component was 16.25%.

The Questionnaire on Teacher Interaction – Self-assessment (QTI-S; Ballová Mikušková, 2022) was used to measure interaction styles. Participants had to rate their behavior as teachers in 40 statements on a 5-point scale (1 = never; 5 = always). The mean score in eight sectors of teacher behavior (based on Leary's personality model) was calculated for: leadership (teaching with enthusiasm), helpful (helping pupils if they do not understand something), understanding (understanding pupils' faults), student-teacher responsibility (allowing pupils to decide about a matter in class), uncertain (being hesitant), dissatisfied (being dissatisfied, whatever the pupils do), objecting (making ironical remarks) and strictness (requiring concentration from pupils).

Teaching styles were measured using the Slovak Teaching Style Questionnaire (STSQ; Ballová Mikušková, 2022). Participants were asked to rate 20 items on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). Mean scores were calculated for four teaching styles: supporting (giving personal support, encouragement and the opportunity to discover how to learn best, working with emotions), goals-oriented (giving clear instructions how to complete tasks, achieving specific teaching goals, sharing knowledge and expertise), knowledge-oriented (preferring a clearly defined curriculum, the organizational structure of education and learning outcomes, valuing facts, concepts and principles as most important, teacher as a "repository of knowledge") and managerial (encouraging students to participate, delegating tasks and responsibilities, own pace of students for completing tasks).

The Didactic Competencies Questionnaire (DCQ; Ballová Mikušková, 2022) was used to measure didactic competencies. Participants had to rate their behavior (57 items) in each of five dimensions of teaching on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). The mean scores for each dimension were calculated, and a higher score indicated how well-developed competencies teachers have in planning and preparing a lesson, realizing the lesson, maintaining a positive classroom climate, diagnostics and evaluation and self-reflection.

The Scale of Motivations for Choosing Teaching as a Career (SMVUP-4-S; Tomšík, 2018) was used to measure individual motivations for choosing the profession. Participants indicated their agreement (1 = strongly disagree; 5 = strongly agree) with 48 items on four basic types of motives: intrinsic motivation (interest, self-perception of teaching skills, work potential and previous experience), extrinsic motivation (benefits, income, social status and significant others), altruistic motivation (prosocial behavior, working with children and working with adolescents) and teaching as an alternative choice. The mean score for each type of motivation was calculated.

### *Data Analysis*

Descriptive statistics were computed as means and standard deviations, and internal consistency was measured as Cronbach's alpha. Since the groups of generations were not equally represented in the sample, the comparison of generations was made using a non-parametric analysis of variance (Kruskal-Wallis Test). Descriptive statistics and Harman's single factor test were computed using IBM SPSS Statistics 29 and analysis of variance (Kruskal-Wallis Test) using jamovi 2.3.21.

## Results

Descriptive statistics for Baby Boomers and Generations X, Y, and Z are shown in Table 1. All instruments (their dimensions) had acceptable internal consistency. The most preferred interaction styles were helpful (baby-boomers), responsibility between student and teacher (Generation X), leadership (Generation Y) and understanding (Generation Z). The most preferred teaching style was the supporting style, and the most developed didactic competencies were the abilities of self-reflection (baby-boomers and Generation X) and maintaining a positive classroom climate (Generations Y and Z). Baby-boomers and Generation Z were motivated mostly by altruistic motives and Generations X and Y by intrinsic motives.

Table 1. Descriptive Statistics

	$\alpha$	Baby-Boomers (n=63)		Gen X (n=205)		Gen Y (n=160)		Gen Z (n=34)	
		M	SD	M	SD	M	SD	M	SD
age	-	59.92	3.29	48.43	4.19	34.64	4.58	23.90	1.26
interaction style									
leadership	.74	4.63	0.54	4.05	0.52	4.75	0.49	4.19	0.60
helpful	.75	4.84	0.64	4.59	0.47	4.38	0.48	4.65	0.46
understanding	.69	4.44	0.60	4.10	0.50	4.50	0.55	4.94	0.45
student-teacher responsibility	.57	4.18	0.59	4.66	0.49	4.01	0.57	4.06	0.53
uncertain	.67	1.70	0.76	1.37	0.71	2.02	0.68	2.53	0.71
dissatisfied	.65	1.14	0.68	1.37	0.57	1.13	0.58	1.18	0.63
objecting	.64	1.81	0.56	1.90	0.47	1.85	0.60	1.90	0.46
strict	.68	3.14	0.86	3.01	0.70	3.06	0.69	2.00	0.69
teaching style									
manager	.60	3.44	0.76	3.20	0.57	3.81	0.64	3.97	0.65
knowledge-oriented	.75	3.76	0.88	3.12	0.78	3.06	0.76	2.09	0.81
goals-oriented	.72	3.70	0.73	3.83	0.76	3.84	0.71	3.59	0.82
supporting	.81	4.32	0.72	4.68	0.59	4.07	0.74	4.12	0.62
didactic competencies									
planning and preparation	.80	4.14	0.50	4.17	0.47	3.47	0.54	4.01	0.51
realization	.85	4.25	0.47	4.14	0.46	3.77	0.46	4.04	0.57
climate	.75	4.01	0.47	4.28	0.48	4.73	0.50	4.15	0.51
diagnostics and evaluation	.87	4.17	0.54	4.18	0.50	3.11	0.55	3.50	0.59
self-reflection	.78	4.84	0.73	4.71	0.72	4.09	0.78	3.94	0.95
motivation									
intrinsic motivation	.85	3.34	0.85	3.34	0.73	3.73	0.73	3.16	0.77
extrinsic motivation	.83	2.16	0.67	2.71	0.66	2.30	0.66	2.36	0.60
altruistic motivation	.83	3.59	0.86	3.05	0.69	3.28	0.75	3.47	0.78
alternative choice	.67	1.33	0.82	1.41	0.76	1.53	0.86	1.91	0.78

Note.  $\alpha$  - internal consistency (Cronbach's alpha), M - mean, SD - standard deviation

ANOVA (Table 2) revealed significant differences between generations in didactic competencies (except self-reflection), a preference for the interaction styles leading to responsibility, uncertain, objecting and strict, and teaching styles. Generation X preferred more responsibility between student and teacher and less objecting interaction styles than the younger Generation Y. Generation Z preferred more uncertain and less strict interaction styles than the older Generation X. Finally, a strict interaction style was preferred more with each older generation (Generation X and Generation Y preferred this style at a similar level).

The managerial teaching style was significantly more preferred by the Baby Boomers than Generation X and less than Generations Y and Z. In comparison to Generation Z, Baby Boomers preferred a more goal-oriented teaching style, and in comparison, to Generation Y they preferred a more supporting teaching style (and Generation Y preferred a supporting teaching style more than Generation Z). Didactic competence planning and preparation was significantly better developed in Generation X than in Generation Y, and Generation Y had significantly worse developed competence realization than the Baby Boomers and Generation X. The competence to maintain a positive classroom climate was worse developed in the Baby Boomers than in Generations Y and Z, and better in Generation X than Z and in Generation Y than in X. And finally, the competence diagnostics and evaluation were better developed in Generation X than in Generations Y and Z.

Table 2. Analysis of Variance (Kruskal-Wallis Test)

	Kruskal-Wallis Test			Post Hoc Tests					
	$\chi^2$	p	$\epsilon^2$	BB - X	BB - Y	BB - Z	X - Y	X - Z	Y - Z
Interaction Style									
Leadership	7.72	.052	0.02	-	-	-	-	-	-
Helpful	1.00	.802	0.00	-	-	-	-	-	-
Understanding	4.34	.227	0.01	-	-	-	-	-	-
Student-Teacher Responsibility	12.82	<b>.005</b>	0.03	-0.05	-3.01	-2.11	<b>-4.68**</b>	-2.41	0.33
Uncertain	10.27	<b>.016</b>	0.02	0.58	2.39	3.57	2.51	<b>3.71*</b>	2.57
Dissatisfied	4.24	.236	0.01	-	-	-	-	-	-
Objecting	12.42	<b>.006</b>	0.03	0.32	3.5	2.32	<b>4.31*</b>	2.93	0.35
Strict	13.83	<b>.003</b>	0.03	-2.07	-1.58	<b>-4.61**</b>	0.51	<b>-4.41**</b>	<b>-4.69**</b>
Teaching Style									
Manager	21.83	<b>&lt;.001</b>	0.05	<b>-4.03*</b>	<b>-5.48***</b>	<b>-4.95**</b>	-3.10	-3.40	-1.57
Knowledge-Oriented	8.85	<b>.031</b>	0.02	-2.19	-3.03	-3.63	-1.43	-2.85	-2.13
Goals-Oriented	9.62	<b>.022</b>	0.02	-1.75	-3.28	<b>-3.73*</b>	-1.90	-2.99	-2.11
Supporting	15.6	<b>.002</b>	0.03	-1.96	<b>-4.13*</b>	0.72	-3.58	2.39	<b>3.92*</b>
Didactic Competencies									
Planning A Preparation	10.15	<b>.017</b>	0.02	0.35	-2.62	-1.69	<b>-4.13*</b>	-2.32	0.15
Realization	15.53	<b>.001</b>	0.03	-1.20	<b>-4.52**</b>	-1.67	<b>-4.80**</b>	-1.10	1.47
Climate	18.15	<b>&lt;.001</b>	0.04	-1.63	<b>-4.19*</b>	<b>-4.41**</b>	<b>-3.87*</b>	<b>-4.10*</b>	-1.97
Diagnostics And Evaluation	15.65	<b>.001</b>	0.03	-0.11	-3.19	-3.22	<b>-4.52**</b>	<b>-3.77*</b>	-1.25
Self-Reflection	6.39	.094	0.01	-	-	-	-	-	-
Motivation									
Intrinsic Motivation	6.20	.102	0.01	-	-	-	-	-	-
Extrinsic Motivation	4.14	.247	0.01	-	-	-	-	-	-
Altruistic Motivation	4.15	.246	0.01	-	-	-	-	-	-
Alternative Choice	1.13	.770	0.00	-	-	-	-	-	-

Note.  $\chi^2$  – chi-square test,  $\epsilon^2$  – effect size, \*p<.05, \*\*p<.01, \*\*\*p<.001; BB – Baby-Boomers, X – generation X, Y – generation Y, Z – generation Z

## Discussion

The aim of the study was to examine generational differences in teachers' professional competencies. The main finding of the study was that there were significant generational differences in professional competencies and no differences in motivation for the teaching profession. However, no meaningful pattern could be observed in these differences; rather, they appear to be random. On the other hand, from descriptive statistics, one can see dominant competencies in each generation. From the desired interaction style, Baby Boomers preferred mostly the helpful style; Generation X preferred the student-teacher responsibility style; Generation Y preferred the leadership style, and Generation Z the understanding style. From the undesired style, all generations preferred the strict style, except Generation Z, which was strong in the uncertain style. With respect to teaching styles, all generations were strong in supporting, and Baby Boomers were also knowledge-oriented; Generations X and Y were also goal-oriented, and Generation Z also preferred the managerial style. From didactic competencies, Baby Boomers were best in self-reflection and realization of teaching, Generations X and Y in self-reflection and maintaining a positive classroom climate, and Generation Z was good in the realization of teaching.

The presented results indicate that professional competencies of teachers were not an outcome of specific characteristics of generations (described for example in Glass, 2007; Jurkiewicz & Brown, 1998; Kraus, 2017; Lissitsa & Laor, 2021; Prensky, 2001; Smola & Sutton, 2002; Venter, 2017; Zemke et al., 2013). One possible explanation is that professional competencies are associated with age and/or practice rather than generational specifics. A brief analysis of the relationship between professional competencies, age and practice supported this assumption (Appendix A). Higher age (but not practice) also related to the strict interaction style and orientation of the teacher on knowledge and the goal of teaching. With growing age and more practice, the interaction styles leadership and student-teacher responsibility are more preferred, as well as managerial teaching style, and all the didactic competencies were improved (only the uncertain and objecting interaction styles weakened). A similar effect of practice on the development of professional competences was also demonstrated in study of (Caires & Almeida, 2005).

Next, although there were no generational differences in motivation for the teaching profession, Baby Boomers and Generation Z were motivated mostly by altruistic motives and Generations X and Y by intrinsic motives. An altruistic and intrinsic motivation for the teaching profession turns out to be an important factor in entering the teaching profession (for a review, see Chiong et al., 2017) and gets stronger with age (Chiong et al., 2017). Because intrinsic motivation has an impact on professional competence (e.g., Tang et al., 2020), it is encouraging that these motives also persist across generations in the present study.

### Conclusion

Teachers' professional competencies (their didactic competencies, interaction style and teaching style) are influenced by cognitive abilities, personality traits and emotions, but also by laws and culture (REF). Intuitively, one can assume that age or generational affiliation also might have an effect on professional competencies (better competencies with increasing age). Since very few studies have been carried out on the generational differences in teachers, and even those that have were focused more on generational differences between teachers and pupils (Garcia & Qin, 2007; Hart, 2017), the present findings represent an original contribution to the theory. Unidentified systematic generational differences direct the attention of research and the creators of educational programs to the role of age and practice in the development and improvement of professional competencies.

### Recommendations

Professional competencies were measured with self-reported instruments. Therefore, it would be desirable to investigate how students perceive their teachers from different generations in terms of professional competencies. Such research would also provide an opportunity to study the differences between students' and teachers' assessments of the professional competencies of teachers.

Since Slovakia is historically special in terms of the characteristics of some generations (especially those who grew up before 1989), it would be interesting to conduct comparative studies in other cultures that are geographically close to Slovakia (those that were in the Eastern Bloc together with Slovakia, as well as those that were behind the Iron Curtain).

The effect of age and practice on professional competencies should also be studied in mediation models: whether, for example, personality and cognitive abilities mediate the relationship between age and practice as independent variables and professional competencies as dependent variables. Finally, whereas it appears that longer practice provides benefits to professional competencies of teacher, educators and educational programs creators should support systematic practice already during pre-gradual training of teachers.

### Limitations

The study had its limitations, most notably the use of self-report measures to measure teachers' professional competencies. Another limitation of the study was its local focus.

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**Appendix***Table A1. Correlation analysis (Spearman's rho) of relationships between professional competencies, age and practice*

	<b>Age</b>	<b>Practice</b>
Interaction Styles		
Leadership	.106*	.119*
Helpful	.034	.049
Understanding	-.052	-.055
Student-Teacher Responsibility	.139**	.154**
Uncertain	-.101*	-.105*
Dissatisfied	-.061	-.044
Objecting	-.144**	-.094*
Strict	.101*	.091
Teaching Styles		
Manager	.165**	.169**
Knowledge-Oriented	.101*	.071
Goals-Oriented	.143**	.076
Supporting	.066	.105*
Didactic Competencies		
Planning And Preparation	.108*	.159**
Realization	.108*	.176**
Climate	.190**	.160**
Diagnostics A Evaluation	.139**	.163**
Self-Reflection	.108*	.120*

Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$