Measuring Empathy in Future Preschool Teachers: Implications for Study Program Modification

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Abstract   High empathic abilities in teachers who work with preschool children are more than desirable, since they have positive influence on teachers-child relationship and they encourage development of empathy in children. The present research was made in order to examine empathy as a multidimensional construct that consists of four dimensions: fantasy, perspective taking, empathic concern and personal distress among future kindergarten teachers and their relationship with students' age and academic year. For the purpose of this study the Interpersonal Reactivity Index (Davis, 1980) was used on a sample of 100 students of Early and Preschool Care and Education at Faculty of Teacher Education in Rijeka. The results showed higher levels of all empathy dimensions among future preschool teachers in comparison to other students. Besides, statistically significant negative correlations between year of studying and empathic concern (r = -0.22, p = 0.01) and fantasy (r = -0.28, p = 0.01) have been determined. These last findings were not expected, and they were discussed within the frame of possible study program modifications.

Keywords   Age, Empathy, Preschool teachers, Students, Study program

1. Introduction

"It is impossible to communicate with a man, if we do not transpose ourselves in his situation."
[[1]Adler, 1996, p. 86].

"Empathy is an emotional reaction that is the result of recognizing others' emotional states, which is very similar or equal to what the other person thinks (s) he feels"[2]. It is based on the awareness of their personality or greater openness to their own emotions what improves the recognition and reading other people's feelings[3]. Empathy is crucial in different areas of life - romantic relationships, leaderships, political actions etc. Empathy is not just a concept; empathy is a factor that is required for each person to be able for better understanding of another person's behavior[4].

Empathy for preschool teachers is particularly important because they represent the important ones who directly affect all aspects of development in children and accompany the development phase. In the work with preschool children, empathy presents a factor that is essential, so it should be an integral part of every individual teacher's personality. Generally, most of the studies which have a central theme the teacher's psycho-pedagogical profile, also use the

detailed analysis of his/her empathic capacities[5].

2. Multidimensional Approach to Individual Differences in Empathy

The construct of empathy is complex and it has a long history of various definitions. First, it has been defined as an aspect of social connection or center of what it means to be fully human[6], then in cognitive[7,8,9,10] and emotional terms[11]. Today it was seen as a multidimensional concept. The two aspects of empathy, emotional and cognitive, undoubtedly interact, since the ability to respond vicariously may depend on the extent to which one can cognitively infer another's affective state, and conversely[12,13,14,15]. Therefore, on this basis, empathy can best be considered as a multidimensional concept that presents a set of four related constructs. All of them have common characteristic of being able to responsive react to others, but are also clearly discriminable from each other. These constructs are:

1) the tendency to spontaneously adopt the psychological point of view of others or perspective-taking tendency;

2) the tendency to transpose themselves imaginatively into the feelings and actions of fictional characters in books, movies, and plays;

3) the tendency to feel sympathy and concern for unfortunate others; and

4) the tendency to feel personal anxiety and unease in tense interpersonal settings.

In addition, there are a great number of models that are aimed to describe and explain development of empathy the

best they can. Most of them emphasize biological determination of empathy, which lies on arguments of natural selection, and possible neural basis of empathy[11], and one of them is the most comprehensive M. Hoffman's model of empathy. He defines empathy simply in terms of the arousal of affect in the observer that is not a reaction to his or her own situation but a vicarious response to another person and the focus of the definition is on the process of vicarious affect arousal. Accordingly, empathy has three components: an affective, a cognitive, and a motivational component. Based on six explained modes of empathic arousal and developmental levels of cognitive sense of others, he concluded there are four levels of empathy that are developmentally connected. He emphasizes that empathic arousal which he equalized with empathic (personal) distress, has an affective nature and that its shape and transformational level are determined by the level of cognitive development of an individual[10,16,17]. The basis of operationalization of empathy by Davis[12] is lying in the frame of Hoffman's developmental model of each dimension pointed out.

Mark H. Davis[12] and some other researchers thought that the cognitive and affective domain will not be able to fully understand until the research is based on the exclusion of one of them. Affective domain is crucial for the excitement and motivation of the properties of an emotion, and cognitive acts as the emotional experience and transformation. He has constructed the instrument called the Interpersonal Reactivity Index (IRI) that arose from a multidimensional theoretical approach to empathy[12]. IRI was designed in such a way that it is possible to observe differences in cognitive functioning as well as differences in emotional reactions. With this, multi-dimensional approach has the ability to accurately define the types of empathic responses to other people and consequently it is possible to consider how these reactions affect the behavior and spotting similarities and differences between them[4].

2.1. Cognitive Domain of Empathy: Fantasy and Perspective Taking

Cognitive empathy is explained as a cognitive awareness and understanding of the internal states of other people internal states (thoughts, perceptions, intentions, especially feelings)[11,16,18]. The cognitive domain includes fantasy and perspective taking. Perspective taking or roles is related to cognitive processes that have the ability to achieve the individual's ability putting in the other person shoes[16]. In Davis' measuring instrument IRI, two subscales have measured the cognitive domain: Fantasy Scale (FS) which measures the way in which the individual identifies with the characters from books, movies and stories with the help of imagination, and Perspective Taking Scale (PT) which represents the possibility of perception of another person's view.

2.2. Affective Domain of Empathy: Empathic Concern and Personal Distress

Defining empathy from the aspect of affective or emotional domain could be articulated in terms such as "sharing emotions with others who we imitate"[18]. Although there are different views on the definition of emotional empathy, researchers agree that empathy is "primarily a compliant emotional response to the emotional state of another person"[19]. It is believed that when a person becomes aware of others around him as separate beings his/her empathic arousal can be converted into a sense of caring for another person[20]. People feel anxious and have a sense of compassion for another person, what Hoffman[16] called compassionate distress or empathic concern. When noticing other peoples an accident there is the desire to help[4]. In the Davis' questionnaire IRI, the affective domain is measured by empathic concern (EC), which refers to the ability that people can empathize with another person and experience his concern and personal distress (PD) related to the feelings of the individual personal experiences emotions such as anxiety and discomfort in interpersonal situations.

3. Importance of Empathy in Preschool Teachers

In general, emotional intelligence is very important for preschool teachers, since the impact of emotions within working with children play a crucial role. Emotionally intelligent preschool teachers know how to recognize their own feelings and express them as well as the emotions that occur in children. They know how to use emotions appropriately in educational planning goals[21]. Empathy is the most important ability within wide range of emotional intelligence in preschool teachers[22]. I. Neacşu[23] defined empathy as one of the essential substructures of the didactic competences, and one of the inexhaustible resources generating psycho-physical potential in the human being, especially in the one being engaged in an educational process. The empathic behavior presents a very important characteristic of the interpersonal relations teacher-child. Besides, efficient communication in that same relationship implies *"a permanent dialogue between the two educational agents involving all the personality sides and which have as a common factor the empathic capacity"*[24, p. 511]. Preschool teachers' empathy consists of their willingness and ability to understand the children point of view, imagine themselves in their shoes, to see the problem from their perspective, and thus adjust their behavior. Empathic preschool teacher accepts child as a whole person, with all its specifies, and (s)he should be able to enable child to develop properly within appropriate educational policies and activities[25]. They can also be emotionally matched with a child and may feel what the child feels. American psychologist Lawrence Shapiro characterized the teachers' empathy as the ability to recognize and vision problems with children's point of view and in accordance to the time to respond to signs of trouble through adequate reaction[21]. In

communicating with children, empathetic preschool teachers will respect each child's feelings and help the child in expressing their own emotions and impulses, and in mastering social skills that they need in everyday situations [25]. What is even more important, preschool teacher's empathy directly influence on the empathy development in children. This development will appear through the influence of preschool teachers who will help the child to independently gain sensitivity to the environment around them through their own experience and through various everyday situations in kindergarten. Therefore, it is expected from the preschool teacher to have the ability of selecting appropriate educational methods that will suite every child individually[26]. Finally, Ivon & Sindik[25] established significant correlation between empathy level in preschool teachers and level of prosocial/aggressive behavior in children. In other words, they determined that educator's empathy and imagination were connected with prosocial and aggressive behaviour of children, and with certain aspects of children's spontaneous game. More concrete, children from groupings led by more emphatic and more imaginative teachers were more prosocial, while the children from groupings led by less emphatic and less imaginative educators were found to be more aggressive. Moreover, it is very important to analyse empathy among future preschool teachers, with the aim of determining at which level study programs support this individual characteristic and at which level they not.

4. Research Aim, Problems and Hypothesis

Taking into account the importance of all subjects' characteristics involved in the learning process, it is extremely important to examine the empathy of future preschool teachers. Therefore, the problems of this study are:

1) To examine the four dimensions of empathy: fantasy (F), perspective taking (PT), empathic concern (EC) and personal distress (PD) among future preschool teachers;

2) To examine the relationship between different dimensions of empathy, academic year and age of future preschool teachers.

It is assumed that enrolled students already have a certain individual characteristics that are desirable for their future profession, and one of them is empathy. In addition, it is assumed that current study programs encourage and tend empathy during studying. Therefore, based on previous research findings and the relevant literature, it was expected to determine higher levels of all dimensions of empathy in future preschool teachers in difference to other students' groups. In addition, considering the multi-dimensional theoretical model of empathy and previous research[4,18,20], significant positive correlations between empathic concern, perspective taking, age and academic year were expected.

5. Method

5.1. Subjects

The study was conducted on a sample of 100 students from Faculty of Teacher Education, University of Rijeka. The sample structure was consisted of 37 students at the 1st academic year, 29 students at the 2nd year of study, and 34 of them at the 3rd academic year. According to gender, 98 of them were schoolgirls, and two of them were schoolboys. The average age of students was M = 20.14 years with a standard deviation of SD = 1.41. The youngest student was 18 years old and the oldest one was 25 years old.

5.2. Measuring Instrument

All subjects completed Croatian translation of the 28-item self-report questionnaire Interpersonal Reactivity Index (IRI) assigned to assess individual differences in empathy of adults[12,13,14,15]. Originally, it consists of four 7-item subscales, each of which assesses a specific aspect of empathy. Therefore, it provides with four different subscales' results. First result is derived from Perspective Taking Scale (PT), which measures the spontaneous tendency or ability of the respondent to adopt the psychological perspective or point of view of other in everyday life. Second subscale is Fantasy Scale (FS), which taps the respondents' tendencies to imagine themselves in the place of characters in books, movies, and plays. Empathic Concern Scale (EC) measures the respondents' reported tendency to experience feelings of warmth, compassion, and concern for others. Finally, Personal Distress Scale (PD) taps one's own feelings of personal unease, anxiety, distress, and discomfort in tense or crisis situations of others. Students were instructed to rate themselves on the 5-point Likert-scale depending on the degree to which they agree or disagree with the statement (1 = strongly disagree, 2 = partially disagree, 3 = neither agree nor disagree, 4 = partially agree, 5 = strongly agree). Davis[12] reported the psychometric properties of the IRI. All four scales have satisfactory coefficients of internal reliability (Cronbach alpha) coefficients ranged from .71 to .77; and test-retest reliability coefficients ranged from .62 to .71. In addition, all four subscales showed a satisfactory level of reliability in previous research[20,27], and in this study too: r_{FS}=0.83, r_{EC}=0.66, r_{PT}=0.69 and r_{PD}=0.75.

5.3. Procedure

This research was conducted as the part of final undergraduate paper at the third year at Early and Preschool care and Education study program. The questionnaire was applied during summer semester, with previous agreement and permission of the professors at Faculty of Teacher Education. Students were introduced with the aim of the research and all of them voluntarily agree to participate. Their anonymity was guaranteed and they were promised to get a feedback on the research results. The results were analyzed on a group basis. Filling out the questionnaire took about 10-15 minutes. For statistical analyses, computer

program Statistica has been used. For the analysis of future preschool teachers' empathy the descriptive statistics was performed. For the analysis of the relationship between future preschool teachers' empathy, academic year, and the age of students, correlation analysis was used.

6. Results and Discussion

6.1. Empathy of Future Preschool Teachers

Table 1 shows the basic statistical parameters of four empathy dimensions in future preschool teachers: means, standard deviations, minimum and maximum (range) for all four dimensions of empathy: fantasy, perspective taking, empathic concern and personal distress. Results of the mean values obtained in this research were compared with results from other studies that have used the same instrument. In the study of Pokrajac[27], who at first run research on the sample of 176 students from the Faculty of Engineering Rijeka, following results on all four subscales were determined: M_{FS}=13.92, M_{EC}=16.18, M_{PT}=14.44, M_{PD}=10.38; and then on adults: M_{FS}=12.03, M_{EC}=16.66, M_{PT}=12.49, M_{PD}=13.78. In the research of Tatalović[4] in which empathy of (N=276) high school pupils and students of Faculty of Humanities and Social Sciences were analyzed, following results were obtained: M_{FS}=8.44, M_{EC}=13.86, M_{PT}=21.74, M_{PD}=13.47.

In addition, Ivon and Sindik[25] only used FS subscale on 20 preschool teachers from 12 kindergartens in Splitsko-Dalmatinska county and they have determined the average fantasy level in the group of high empathic educators of M=22,4 and in the group of low empathy educators M=12,3. For the purposes of the comparison, it could be summarized that results of mean values from all four parameters including fantasy, empathic concern, personal distress, and taking the perspective in this research were higher compared to results in other studies. An explanation can be found in the fact that no above researches have been conducted research on a sample of preschool teachers or students who are being educated to become preschool teachers. This finding has been expected, according to desirable individual characteristics that have been described and analyzed previously. It is expected for future preschool teachers to be highly empathetic within their work with preschool children.

Table 1. Descriptive statistical parameters of four empathy dimensions: Fantasy, Perspective taking, Empathic concern and Personal distress in future preschool teachers (N=100)

Empathy Dimensions	M	SD	RANGE
Fantasy	24.45	5.41	12-35
Perspective Taking	24.84	3.86	16-35
Empathic Concern	20.11	2.80	10-90
Personal Distress	16.66	3.47	8-25

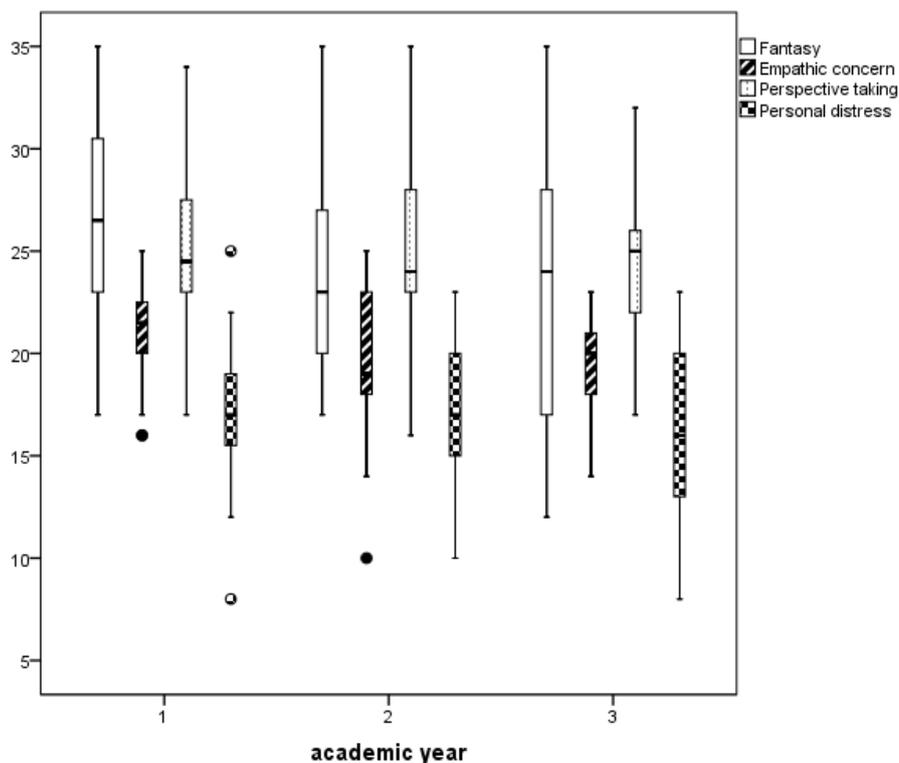## 6.2. The Relationship between Future Preschool Teachers Empathy and Their Academic Year and Age

Figure 1. Results on all IRI-subscales presented in relation to the academic year: 1st, 2nd, 3rd year

Using correlation analysis, which results were shown in the Table 2, the relationship between different dimensions of empathy, age and students' academic year could be observed. Considering the correlation results it could be seen that significant negative correlation has been determined between academic year and empathic concern ($r = -0.22$, $p = 0.01$) and fantasy ($r = -0.28$, $p = 0.01$). In other words, empathic concern and fantasy decline with the students' higher year of studying, as shown in Figure 1. In addition, students' age was significantly inversely correlated only with empathic concern ($r = -0.20$, $p = 0.05$), what means that empathic care is significantly lower in older students.

Table 2. Correlation matrix of Empathy dimensions: Fantasy, Perspective taking, Empathic concern and Personal distress with student's age and academic year

Empathy Dimensions	Academic year	Students' age
Fantasy	-0.28**	-0.19
Perspective Taking	-0.08	-0.13
Empathic Concern	-0.22*	-0.20*
Personal Distress	-0.7	-0.11

*p<0.05; **p<0.01

These findings concerning the decline in empathic concern and fantasy according to age and/or academic year were not expected and rather surprising. Since, no other variables had been controlled or measured in this study, about possible reasons only could be speculated for these findings. Nevertheless, some serious implications concerning current study program could be drawn. Therefore, the main question is – does this decline in empathic concern and fantasy have direct impact on their future work with preschool children?

Determined decline in empathic concern with academic year could be discussed in the frame of prior similar studies. Nunes and her colleagues[28] determined the significant empathy decline in students from five health disciplines during their first year of training. This research was conducted on a sample of N=437 first year students enrolled at five health science disciplines: pharmacy, dentistry, veterinary medicine, nursing and medicine. First, significant difference in empathy between 27 years old and 21 years old was obtained. Authors said that older students felt more able to identify with the patient's perspective because of additional life experience. Second, a decline in the mean empathy scores was determined among all health disciplines after completion of the first academic year. Authors suggested that this decline in empathy is in part due to a "settling in" effect with a change from idealism to realism. Also, students may be displaying an adaptive response to their new responsibilities and an increasing workload. Nevertheless, empathy is very important skill to be developed by all disciplines, so authors concluded that health educators need to consider addressing those factors that may check empathy's further decline.

Furthermore, the reason for reduced empathic concern in relation to age can be found in some sociological factors, such as today's society, which directly affects the formation of thoughts and feelings in people. At a time when in the country is the state of unemployment, poverty, the struggle for jobs and a better future people are forced to think about the survival of their own families. People are doomed to survive, leading to reduced concern for other people and their needs. This way of life, is focusing people on the independent functioning in the world without the help or expectations of others assistance. Gradually disappears care, people lose compassion for others and think only of themselves. The lack of concern is not made up of decisions then on the way of life in which we survive and in which people just cannot manage to find ways to care for others despite all the problems we are surrounded. Therefore, the way of living at today society could have a great impact on determined decline in students empathy what could be analyzed in future studies.

Furthermore, research results show a decrease of fantasy with the academic year, what mean that student's fantasy is reducing at their higher academic years. This finding is rather surprising and much unexpected since the pedagogical profile of future preschool teachers consists, among all, creative and imaginative competencies. Great number of study programs, and one of them is the study program at Faculty of Teacher Education in Rijeka too, have implemented such competencies. Furthermore, previously described study of authors Ivon and Sindik[25] showed significant impact of higher levels of preschool teachers' empathy, imagination and flexibility on prosocial behavior of children and on the children's games type. In detail, children in the group with more imaginative preschool teachers showed significantly more imaginative games, especially symbolic games with doll and practical-working activities, in small groups or in pairs. This experimental research design clearly determined that preschool teacher's fantasy directly affected children's game. The research also indicated that the fantasy and emotional empathy are important determinants for the establishment of educational communication quality[29]. We can conclude that imagination/fantasy has a beneficial effect on the educational practice and is crucial in working with children.

6.2.1. Differences in Four Empathy Dimensions According to Academic Year

Table 3 presents the descriptives of four empathy dimensions and ANOVA results compared to three years of study. As it can be seen (Figure 2), there were no statistically significant differences in the dimensions of empathic concern, perspective taking and personal distress related to academic year. The only one significant difference was determined in fantasy level according to academic year. Even though fantasy decline is consistent through all three years, this difference in fantasy reached its significance only between the first and the third academic year.
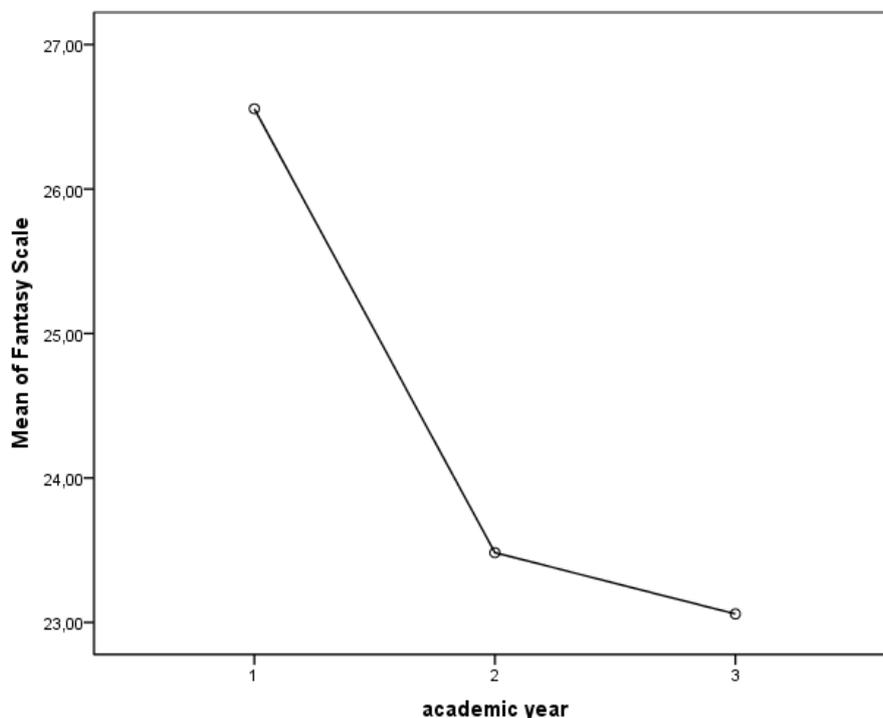
Figure 2. Means of fantasy according to three academic years

Table 3. Descriptive indicators of four empathy dimensions and ANOVA results compared to three academic years

Empathy dimensions	Academic year	N	Mean	Standard deviation	ANOVA
Fantasy	1st	36	26.56	4.51	$F_{(2.98)}$=**4.63** **p=0.01**
	2nd	29	23.48	4.72	
	3rd	34	23.06	6.24	
Empathic Concern	1st	37	20.92	2.37	$F_{(2.99)}$=2.67 p=0.08
	2nd	29	19.83	3.50	
	3rd	34	19.47	2.40	
Perspective Taking	1st	37	25.05	3.94	$F_{(2.99)}$=0.47 p=0.63
	2nd	29	25.17	4.72	
	3rd	34	24.32	2.87	
Personal Distress	1st	37	16.86	3.10	$F_{(2.98)}$=0.35 p=0.71
	2nd	29	16.86	3.54	
	3rd	33	16.24	3.84	

Taking into account previously described data on empathic concern decline, this finding about fantasy decline from the first to the third year of study present a sufficient indication that something crucial needs to be changed in preschool teacher's undergraduate education. Results of evaluation research conducted in Australia have shown that educating teacher's in empathy brought better results in their empathic abilities[30], same as have shown results from Romanian research[5]. Therefore, preschool teachers within their study program perhaps should have one course, which would deal with empathy and its importance in working with children. Students are probably not sufficiently familiar with the importance of empathy, especially the importance of empathy in working with preschool children and its benefits for children development and well-being[5,24,31]. Although various courses within university study programs include practice in kindergarten that is tested in the form of

various performances, none of them explicitly includes empathy training and testing.

Decline of fantasy score from the first to the third year of study could be considered as a serious problem for future preschool teachers, with a strong impact on possible study program modifications. The study of Ivon and Sindik[25] clearly demonstrated the importance and influence of preschool teacher's imagination on children's prosocial behavior, communications skills and imagination level regarding their games.

Ajduković and Pećnik[32] described similar data. They have showed that more empathetic and imaginative teachers are more focused on: a) achieving better communication skills in children, b) encouraging and nurturing children to resolve conflict through non-violent way, and c) supporting their friendships. Therefore, the future preschool teachers' ability to be able to imagine different situations or positions,

or to be able to accustom in the feelings of a novel character, should be developed by study program courses.

Maybe, it is possible that art courses (from the fields of musical and visual arts) within current undergraduate study program Early and Preschool Care and Education at Faculty of Teacher Education in Rijeka, are structured in the way that is not supportive for fantasy increase in students. However, to initiate study program changes due to the fantasy and empathic care decline in future preschool teachers, similar studies with larger sample and possible longitudinal design should be conducted. At this point, determined results could serve as a solid ground for rethinking of current study program and for creating further similar studies. Besides, it could serve as an indication for improving the educational programs in order to gain adequate future competencies in preschool teachers.

7. Conclusions

The main goal of conducting the research was to examine the empathy as a multidimensional construct consisted of four dimensions: fantasy, perspective taking, empathic concern and personal distress, in future preschool teachers. Besides, article deals with the relationship between four empathy dimensions, students' age and academic year.

Results showed higher levels of all empathy dimensions in future preschool teachers in difference to other students, what was expected due to desirable psycho-pedagogical profile of a preschool teacher. On the other side, reducing effects of fantasy and empathic concern from the first to the third academic year were not expected. So, these findings directed attention to rethinking about current undergraduate study program. Even though similar studies should be conducted in the future, using larger samples, different empathy measures and longitudinal design, some guidelines about study program modifications could be drawn. First, current visual and music art courses should be structured in the way that is supportive for imagination increase. Moreover, second new courses with the aim of improvement of empathic concern should be implemented within undergraduate study program.

Preschool teachers present significant role models for children. Their behavior as well as their attitudes towards children directly affects children, children development, and the child-educator interaction. Therefore, it is very important that university study programs are able to create quality and competent preschool teachers who will be example for children and the person they can look up to.

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