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## ARTICLES

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*Review*

# Teaching students with intellectual disabilities: Constructivism or behaviorism?

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**Many teaching strategies have been postulated over the past years by various scholars in an effort to enhance the education system among students with intellectual disabilities. There is much debate on the application of constructivist and behaviorist perspectives for teaching students with intellectual disabilities as addressed in this paper. Many scholars have advocated for exclusivity with regards to the use of the two approaches. However, this work recommends a combination of principles from the two approaches to best structure instructions and teaching. This paper includes a brief explanation of intellectual disabilities, a summative brief of major constructivist and behaviorist perspectives, and their implication in students with intellectual disabilities. Finally, the paper offers summary of the approaches and provides a number of recommendations for teaching intellectually challenged children in a school setting.**

**Key words:** Constructivist, behaviorist, students, intellectual disabilities, teaching strategies.

## INTRODUCTION

With regards to special education, a plethora of controversies exist on the two main perspectives of teaching: constructivism and behaviorism. While some scholars propose the use of one specific approach to teaching, effective ways of give instructions in the classroom setting integrate concepts from different perspectives (Alnahdi, 2015). It is normal in the education field to challenge a position, dismiss it, and embrace the latest trend as though there were no important ideas in the original point of view. In most cases, however, effective strategies in the field of education integrate ideas from different perspectives. It is important to use

ideas from both the constructivism and behaviorism approach to attain the best results in the teaching and learning process. Still, it is advisable to structure the curriculum and instructional methods according to the individual learner, the activities, and the learning environment as opposed to exclusively relying on one approach. As such, incorporating elements from both the constructivism and behaviorism perspectives could assist special education instructors to teach learners with intellectual disability (Benitez and Domeniconi, 2016). Correspondingly, this paper focuses on intellectual disabilities and some of the learning challenges

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associated with students who fall under this category. The paper's objective is to determine whether constructivism or behaviorism is the best approach to teaching intellectually challenged students. It also seeks to understand the implication of intellectual disability and the characteristics associated with intellectually disabled students through classical research. The paper concludes by summarizing both constructivism and behaviorism and outlines the various techniques a teacher can engage to include all students with intellectual disabilities in the learning process.

## INTELLECTUAL DISABILITIES

Intellectual disabilities, previously referred to as "mental retardations," cannot be intrinsically attached to any person. However, they are associated with a group of disorders in the psychological functioning and adaptive characteristics. The levels of severity of intellectual disabilities depend on the differences between people's abilities to learn and the expectations of the society within a social setting. People who are perceived to suffer from intellectual disabilities have an IQ that ranges from 50 to 70. Scholars argue that there is no particular known cause of delay development in people with intellectual disabilities (Gibbons et al., 2015). It is widely agreed that all people with intellectual disabilities have deficits in intellectual functioning and face challenges in adaptive behavior.

When it comes to challenges in intellectual functioning, learning is a slow process because these people find it hard to recall, generalize activities and skills, and they are less motivated. On the other hand, adaptive problems include challenges with social skills, conceptual skills and practical skills. Therefore, in the learning setting, people with intellectual disability find it hard to socialize and master concepts. Moreover, people with intellectual disabilities often show discrepancies in self-determination skills and problems in skill areas like decision-making, setting goals and solving problems (Haegele and Park, 2016).

As established in classical theories by Baker et al. (2015), learners in a classroom setup, with intellectual disabilities can attain a high quality of life in diverse aspects of life with an appropriate support provided. The curriculum and instructional methods for such students should be modified to help them attain their potential in academic and functional areas of life like independent living. The classical research further established that although such learners exhibit adaptive characteristics, the shortcomings exist alongside various strengths in other areas of life. Therefore, the instructional strategies for students with intellectual disabilities should focus on improving independence and self-reliability. Since

learning for intellectually disabled students is challenged because of their difficulties in generalizing concepts, making decisions, solving problems and setting goals, teachers should provide information on small bits. This will help the students internalize the concept easily before moving to another.

## Constructivist theory and practice

Constructivism is a teaching technique as opposed to a theory. The model combines new ideas by interpreting new experiences in line with previous knowledge so that learners can make sense of new concepts. The advantage of the constructivist model is in the method of constructing knowledge and the implication to both teachers and students. The role of the teacher in the classroom situation is critical considering the fact that knowledge is not transferable from one person to another like a commodity. Recent research by Akpan and Beard (2016) demonstrated that it is important for educators to structure their instructions to be student-oriented, particularly when it comes to students with intellectual disabilities. The authors argue that apart from ensuring that the learning process is established in the social context, collaboration and student-to-student interactions are inevitable. Through such interactions, every learner makes meaning at individual level to connect with existing knowledge.

Instructions that are in line with the constructionist perspective are recommended for general education classes in most educational institutions around the world. The most important aspect about constructivism is that learning should make sense and contextual to the problems of life (Parker et al., 2015). For instance, as opposed to compelling learners to master problems in economics like making change for the dollar, the constructivist model advocates that students are given actual money to use in class or at the school store. Students with intellectual disabilities have a problem when it comes to memorizing ideas. Taking an example of social studies, constructivist theorists recommend that teachers have their students to play role as judges, lawyers and the jury for a simulated court case. They can also carry out elections for their classroom leaders as opposed to memorizing information on the process of carrying out elections. Therefore, students with intellectual disabilities will benefit from the strategy because they have a challenge when it comes to generalizing concepts in the classroom setting. Through realistic examples integrated in the instructional methods, the students with intellectual disabilities will have specific practice with the generalization. The strategy will help them in developing practical skills, which have been known to be a challenging area of learning.

The constructivist theory encourages teachers to give instructions from the known to the unknown. Before introducing a new concept, the teacher should discuss related concepts first so that students learn new information based on what is already familiar to them. It is recommended that teachers use techniques like mapping and brainstorming to improve the learning experience for students with intellectual disabilities. For instance, when introducing a topic American Literature, the teacher can ask students to brainstorm some of the renowned writers in America. Students can make a map of the American literature writers according to the years they first published their work. Students with intellectual disabilities will benefit from such an approach whereby teachers move from the known to the unknown so that they can master concept stepwise. It is suggested that students with intellectual disabilities have low self-esteem and take long to master concepts. Moving from the known to the unknown will improve their self-confidence, especially after repeated learning and realizing that they can make sense out of the curriculum content (Räty et al., 2016).

The constructivist theory as well emphasizes on active learning when teachers give instructions. Active participation by students in the lesson helps them to learn and retain information. Most subjects like languages, social studies and sciences involve a high level of student engagement. Teachers, for example in languages, can use literature-related themes to keep students focused on their areas of interest. When students with intellectual disabilities are provided with materials that interest them during the learning process, there are high chances that they will master the content (Saad et al., 2015). Teachers should consider teaching students with disabilities the techniques of summarizing, paraphrasing, predicting and using visual images. All these skills involve active learning that is essential when it comes to mastery and remembrance of ideas. Therefore, besides active participation of students in the class, it is advisable for teachers to focus on areas of interest for students.

Available information also indicates that students with intellectual disabilities have challenges in areas of problem solving and evaluation. However, these areas are important in the constructivist-oriented curriculum. With extra guidance and preparedness, students with intellectual disabilities can acquire and benefit from these skills in their practical life (Spooner, 2015). For this reason, teachers can take an active role in engaging students with intellectual disabilities in complex writing assignments, study tasks and research projects among other assignments.

## BEHAVIORIST THEORY AND PRACTICE

It is evident that Watson (1913) on The Behavioral

Learning Theory, engineered the movement inclined towards behaviorism and a drift away from functionalism. Using findings from Pavlov on animal response to stimuli, Watson was able to establish a relationship between animals and their environment. It was deducted that if animals like the dogs could be conditioned and trained to respond to stimuli then human beings equally had the capacity to be conditioned to respond to similar behaviors (Overskeid, 2008). Although, conditioning is quite limited with regards to shaping behavior since a response must exist, use of a reward can be effective. This is termed positive operant conditioning where a reward is provided when an individual behaves in a certain way. In the case of a student, for example, to ensure they do their homework, the teacher can use rewards such as giving sweets.

The behaviorist theory also focuses on giving explicit and direct instruction in the classroom situation. This approach has faced a lot of criticism in the general education field, but it is promising when used with students with intellectual disabilities. Instead of looking at the negative aspects of the approach as indicated in the general education setting, it is important to consider the positive part of the behaviorist theory so that it can be used to improve the learning experiences of students with intellectual disabilities (McMahon et al., 2016).

An approach associated with the behaviorist theory is breaking down activities into smaller tasks that can be managed by students with intellectual disabilities (Aykut et al., 2014). As opposed to teaching a general topic in science about sound, the teacher can divide sections of the lesson to teach smaller parts. For instance, the teacher can introduce a single activity of the scientific method such as the statement of the problem before following up with other steps one at a time. The technique is beneficial for students with intellectual disabilities because they are known to have problems when it comes to mastering complex material. Overwhelming information makes them frustrated and slows down the learning process.

Regarding handling complex assignment like writing, the teacher can use modeling, which is one of the approaches used by behaviorist proponents (Giust and Valle-Riestra, 2017). For example, in the written assignment, the teacher can decide to explain and illustrate every step for the learners to understand the requirements and major concepts. Behaviorists believe that it is not enough for only name and provide few examples of the pre-writing approaches or proofreading. Apart from demonstrating for the entire class, the teacher can go a step further to illustrate each step to individual students. For instance, when writing an essay on "My First Day in School," the teacher can ask students to brainstorm for ideas about what transpired during their first day in school and draw a graphic representation. The

modeling strategy concerns the teacher giving examples of events that are likely to occur on the first day of school and use the same examples in sentences to construct a coherent paragraph. Students with intellectual disabilities will use such illustrations to think about their own experiences and write connected ideas about experiences on the first day of attending school.

Explicit instructional methods require a great deal of practice and assessment of new knowledge until students master new concepts. Direct instructional methods offer extensive drill and practice for learners until they acquire new knowledge. Students with intellectual disabilities have shortcomings when it comes to remembering things and processing information. Therefore, explicit instruction is the best strategy to ensure that these students remember concepts and process information to make sense of abstract ideas. In addition, the approach requires organization and systematic planning. The teacher-directed and managed lessons are beneficial for students with intellectual disabilities because of their problems with processing information, paying attention and recalling ideas. Most students achieve best results during the learning process when they know what to expect from a lesson or topic. Their focus then shifts to new information conveyed so that they can be related to what is already known.

The integration of constructivism and behaviorism influences the learning experience owing to its holistic nature and teachers can completely address the shortcomings in cognitive functioning and adaptive characteristics. This is achieved through the provision of directive instructions in several skill areas besides the general curriculum (Giangreco, 2017). Although such skills are more functional in nature, they are very important for the prospective independence of students with intellectual disabilities (Epps, 2016). The extra skill areas include knowledge in handling money, time management, independent living, hygiene and self-care, recreational activities, community engagement, and vocational training. Integrating constructivism and behaviorism enables students with intellectual disabilities to master concepts in these areas effectively through a structured setting based on the skill sets being taught. Learners with intellectual disabilities acquire skills effectively in practical areas that can be used in their real-life situation through this learning approach. After the skills are acquired, the teacher can include extra settings to focus on generalization.

## Summary of major concepts for teaching students with intellectual disabilities using constructivist theory

1. Information should be related to real life situations so that it will be more meaningful for the students. For instance, teacher should supervise an enactment of court ruling where different students assume various roles. This will not only improve concentration of the student, but will also involve them in situations related to real life.
2. Teachers should move from the known to the unknown, incorporating examples and illustration. In teaching, for instance literature, the teacher should start with simple stories such as those of 'Shaka Zulu' that almost all students understand. The teacher can even start with a bible story before proceeding to more complex literature like that of Shakespeare. Illustrations such as cartoon magazines of the stories should be provided when possible.
3. Concentration on a few major concepts in each lesson that comprise of various topics and subject areas. Concentrating on a few concepts is appropriate because it will allow students to internalize information easily without complication. Teachers should teach in a 'one step at a time' manner.
4. Structure tasks that trigger active participation of the students. Students, for example, should be given an opportunity to narrate their stories for the whole class. Each student should play a certain role.
5. Incorporate high level thinking capabilities through clear explanations and guidance. For intellectually disabled children, teaching using illustrations is the best way to offer clear explanations. Children love graphical illustrations and presentation and is a sure way to capture and retain their attention.

## Summary of major concepts for teaching students with intellectual disabilities using behaviorist theory

1. Breakdown of activities into small parts. Since students cannot digest a single or complex topic easily, it is appropriate to divide the materials into sections and each taught at a time.
2. Model, illustrat, and explain every step in a process or new activity. This will not only make it clear, but it will allow a student to remember what they learnt a long time ago. Students are more likely to remember a concept taught by use of a model or illustration than when taught without them.
3. Employing reward in order to reinforce appropriate learning behavior by students. This can be in form of sweets, toys and cartoon magazines.
4. Use as much additional practice and assessment as possible to ensure maximum mastery of concepts. If possible, students should be allowed to replicate simple models made by the teacher. This will ensure that as they are learning, they are also practicing various concepts. Modelling also improves art skills and enhances creativity.

5. Integrating organized and predictable activities into the lessons. Organized activities are related to following a concept one step at a time. When this is done starting with the simplest to the most complex, children are likely to follow. Predictable activities are those engagements known to students and whose performance ensures the students' concentration is checked.

6. Providing direct instructions for students. This involves telling a student what to do, when to do it and how to do it. Direct instructions can be very effective when analyzing the intellectual development of a student since a teacher can gauge their ability to follow instructions. It also offers extensive drill and practice for learners until they acquire new knowledge.

## CONCLUSION

Students with intellectual disabilities require teachers to use unique approaches in the teaching process because of their deficiencies in the processing and academic areas. To ensure maximum mastery of concepts, teachers should familiarize themselves with the patterns of strengths and weaknesses of students with intellectual disabilities. Generally, these students have problems with their intellectual functioning and adaptive behavior. Teachers can combine strategies from the constructivism and behaviorism models to meet the needs of students with intellectual disabilities. The two models advocate for teachers to structure the curriculum and instructions based on the needs, subject area, and the setting of the learning process. The most effective way of achieving maximum results is to divide complex parts of the subject into smaller parts to eliminate the difficulty associated with generalization. Students will also benefit more from the learning process when teachers relate the information to real life situation, in addition to moving from the known to the unknown as observed earlier. Because of the limitation of students with intellectual disabilities, it is recommended that teachers should focus on few ideas for lessons that involve complex topics. They should also structure the tasks to be included in the learning process so that they can encourage active participation of the students. For example, this can be by using models or illustrations that are very effective in explaining easy and complex concepts.

## CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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**Educational Research and Reviews**

*Full Length Research Paper*

# Teacher perceptions of professional role and innovative teaching at elementary schools in Taiwan

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**The purpose of the study is to explore the association between primary school teachers' perceptions of professional role and their innovative teaching in Central Taiwan. Quantitative research methods were employed, and data were collected from 554 Central Taiwanese teachers. The results of the present study indicated that elementary school teachers have highly perceived professional services and professional ethics for professional roles, and the teachers performed well in ideal thinking for innovative teaching. Also, the professional role perceptions of teachers, particularly the dimension of professional development, were significantly positively correlated with innovative teaching. Finally, the analysis results showed that the professional role perceptions, specifically the professional development dimension, effectively predicted innovative teaching.**

**Key words:** Professional role, innovative teaching, elementary school teachers, Taiwan.

## INTRODUCTION

Influenced by the globalization, democratization, and diversification of social development, Taiwanese education in the twenty-first century has undergone a series of reform. During the process of social change in Taiwan, compulsory education has transformed from a singular, centralized, campus-based, and conservative system to a diverse, decentralized, community-based, and innovative approach (Ministry of Education [MOE], 2013). The quality of education depends on teachers, who are the essential factors contributing to the educational success of schools. The competency of teachers is imperative since teachers who participate in educational work profoundly influence the future developments of their students (Santoro et al., 2012). The recent low birth rate has substantially affected Taiwanese society. This is in addition to the 12-year compulsory education which emphasizes increasing the educational quality of elementary and middle schools, facilitating the achievement of children, and consolidating national competitiveness. Most people in the society believe that education is an essential indicator for cultivating talented personnel and improving national competitiveness. Therefore, educational opportunity is no longer the focus of topics regarding education reform; instead, improving educational and teaching quality and implementing innovative teaching should be emphasized (MOE, 2013).

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Therefore, the relationship between how teachers perceive their professional role and apply innovation to teaching merits further investigation. Moreover, whether their teaching ideology, class and assessment design, and the innovation behavior in seeking resources and teaching methods are positively influenced during the process wherein teachers perceive their professional role and devote to teaching, is also a topic warranting further exploration.

Overall, this study investigated the current situations regarding teachers' perceptions of professional role and their innovative teaching and examined the predictability of these two aspects. Finally, conclusive findings and recommendations are proposed to serve as references for the education administration authority, schools, and teachers.

## LITERATURE REVIEW

### Implications of teacher professional role perception

The concept of professionalism involves the possession of expert knowledge and ability related to a particular occupational field. Professionals can independently and autonomously perform their duties and provide specialized services. Furthermore, they are adept at controlling their own work protocols and procedures and professionally organizing and formulating regulations that maintain morality and discipline. Through continual advanced training and studying, professionals develop a high level of professional identification and a strong sense of purpose regarding their work content, and establish rational and rigorous regulation and certification standards, which ultimately help them gain professional respect and professional authority and enable them to complete their work assignments (Evetts, 2012).

Categorizing educational work as a profession has been debatable, and thus, educational organizations are still attempting to promote teaching occupation as a form of profession. The professional development of teachers involves a process of developing their semi-profession and quasi-profession, to full profession. Consequently, the professional role of teachers is manifested through their professional identification (Gamble, 2010; Ingersoll and Merrill, 2011; Hightower, 2011). Moreover, teachers must constantly adjust their professional role to meet the requirements of the society and to acquire professional self-esteem within the society.

Overall, teachers' perception of professional role is the role perception regarding teaching as a profession; it refers to the behaviors that teachers should demonstrate or their cognitions established from the psychological process of reflecting, determining, integrating, selecting, and organizing the traits and behaviors of their professional role, which is established according to social changes, their professional development, and social expectations (Caires et al., 2012; Cristina-Corina and Valerica, 2012).

According to previous studies, teachers' perception of professional role can be divided into six dimensions of role perception, namely, professional knowledge, services, ethics, autonomy, development, and organization (Hyslop-Margison, 2010; Tyree Jr., 1996).

### Implications of innovative teaching

Innovation involves modifying or introducing new ideas, an approach essential to economic growth. Innovation grants an individual the ability to create wealth by utilizing accessible resources and applying novel ideas and concepts in problem-solving strategies (Amabile, 1996; Craft, 2005; Ritchhart, 2004; Rogers, 2003). Innovation is a process of combining creativity and practicability as well as a purposeful, systematic problem-solving method that facilitates value addition. Through careful deliberation, flexible decisions, and systematic use of novel concepts and technology, innovation can progressively promote and guide education reform and advancement toward a positive and favorable direction. Creativity is the basis of innovation, but when creativity is lacking, innovative ideas cannot be created, let alone the act of innovation. Creativity and innovation are closely related; therefore, their concepts overlap, sharing a commonality (Adams, 2005; DeHaan and Ebert-May, 2009; Levitt, 2002).

According to previous studies, the content of innovative teaching can be categorized into five dimensions, namely ideal thinking, curriculum content, teaching resources, teaching methods, and diverse assessment (Amabile, 1996; Hennessey, 2003).

### Studies related to teacher perceptions of professional role and innovating teaching

To examine the relationship between the professional development and innovative teaching of teachers, Hsieh (2009) and Yang (2010) have conducted a questionnaire survey on elementary school teachers. Hsieh (2008) focused on vocational school teachers, investigating the relationship between the professional development and innovative teaching of teachers and the confounding effects of organizational innovative climate. The results of the Pearson product-moment correlation conducted in these studies have revealed a significantly positive correlation between the professional development and innovative teaching of teachers.

In addition, Hsieh (2009) indicated that the interpersonal communication of professional development and the teaching resource of innovative teaching exhibited the strongest correlation and the results of the multiple regression analysis verified that

interpersonal communication effectively predicted the overall innovative teaching. Yang (2010) performed two-way analysis of variance to investigate the influence of teachers' personal backgrounds and teaching innovation on the professional development of teachers, and the results indicated that these two factors did not significantly affect the professional development of teachers. By using a hierarchical regression model, Hsieh (2008) determined that the encouragement of vocational school administrators moderated the relationship between the professional development and teaching innovation of teachers; indicating that frequent encouragement and approval by school administrators weakens the positive influence that teacher's professional development has on teaching innovation.

To examine the relationship between the professional commitments and innovative teaching of elementary school teachers, Cheng (2008) applied a questionnaire survey and Pearson product-moment correlation analysis. The results revealed that professional commitment and innovative teaching were significantly positively correlated. Specifically, the professional commitment of teachers yielded the highest correlation with the dimension of teaching method improvisation. Chiu (2010) indicated that professional development, a dimension of professional commitment, exhibited the strongest correlation with teaching innovation. Regarding predictability, Cheng (2008) adopted professional commitment and teaching innovation as the predictor variables and teaching effectiveness as the criterion variable. The results showed that the dimension of teaching method improvisation exhibited the highest predictability. By contrast, Chiu (2010) indicated that the teaching evaluation dimension in innovative teaching predicted professional commitments most efficiently.

To investigate the relationship between the professional identification and innovative teaching of teachers, Yeh (2012) conducted a questionnaire survey on arts and humanities teachers in middle schools, showing that professional identification of teachers exerted no moderating effect on the implementation of innovative teaching.

Overall, previous studies have focused on only how the professional development, commitment, or identification of teachers is related to their innovative teaching. The results of these studies showed that professional development and commitment are positively correlated with innovative teaching, whereas professional identification exerted no moderating effect on innovative teaching. In recent years, the social change in Taiwan and the effect of education reform have influenced how teachers redefined their professional role and implement innovative teaching. Therefore, how to objectively investigate the relationship between the professional role perception and innovative teaching of teachers is a critical topic for evaluating the professional development and innovating teaching of teachers.

## METHODOLOGY

### Participants

The participants of this study were teachers (excluding substitute teachers) who worked at public elementary schools in Central Taiwan, Taiwan.

### Pilot test participants

A pilot test was randomly selected and conducted on two schools each from the Central District, Tun Districts, Greater Shanxian, and Greater Haixian of Central Taiwan and 145 questionnaires were distributed. 145 questionnaires were recovered, of which 143 were valid, yielding a valid return rate of 98.62%.

### Formal test participants

Stratified sampling was used from the Taichung City District. Currently, Taichung City has 29 administrative areas and 226 elementary schools. Because of the large population, the schools were divided according to the administrative area. First, Taichung City public elementary schools were divided into a total of four districts: the divisions of Taichung City and Tun Districts, the Mountain and Coastal regions. Second, one-fifth of the schools in each district were selected and sampling proportions were assigned based on the scale of the school. Overall, 575 formal questionnaires were distributed and 563 were retrieved. Nine incomplete questionnaires were eliminated; therefore, 554 valid questionnaires were obtained, yielding a usability rate of 96.52%.

### Research instruments

Questionnaire survey method was adopted. The instrument used in this study was a self-developed questionnaire on the professional role perceptions and innovative teaching of elementary school teachers. A preliminary questionnaire was first created according to a literature review. Subsequently, professional scholars were invited to assess the preliminary questionnaire for establishing the expert validity. Following the pilot test, the collected data was processed and analyzed to verify the reliability and validity of the questionnaire and formulated a formal questionnaire according to the pilot test results.

The formal questionnaire comprised three parts: the demographic information of the participants, questionnaire for the professional role perceptions of teachers, and questionnaire for the innovative teaching of teachers.

The demographic information included the sex, highest educational attainment, years of service, current job position, school size, and school location of the public elementary school teachers.

The questionnaire for the professional role perceptions comprised six dimensions, including professional ethics, professional knowledge, professional services, professional development, professional organizations, and professional autonomy. The preliminary questionnaire contained 30 questions, which were evaluated using a 5-point Likert-type scale with scores ranging from 5 to 1, which respectively denotes "strongly agree," "moderately agree," "agree," "moderately disagree," and "strongly disagree." The participating teachers who received high scores demonstrated favorable role perceptions in these dimensions.

The questionnaire for innovative teaching contained five dimensions, including ideal thinking, curriculum content, teaching resources, teaching methods, and diverse assessment. The

**Table 1.** Pearson product-moment correlation  for study variables (***p<0.001).

| Correlation | Professional knowledge | Professional services | Professional ethics | Professional autonomy | Professional development | Professional organizations | Total |
|---|---|---|---|---|---|---|---|
| Ideal thinking | 0.43*** | 0.55*** | 0.56*** | 0.52*** | 0.57*** | 0.40*** | 0.64*** |
| Curriculum content | 0.48*** | 0.48*** | 0.57*** | 0.56*** | 0.68*** | 0.43*** | 0.69*** |
| Teaching resources | 0.41*** | 0.27*** | 0.41*** | 0.39*** | 0.60*** | 0.50*** | 0.59*** |
| Teaching methods | 0.50*** | 0.44*** | 0.52*** | 0.55*** | 0.65*** | 0.39*** | 0.66*** |
| Diverse assessment | 0.52*** | 0.37*** | 0.47*** | 0.51*** | 0.61*** | 0.41*** | 0.63*** |
| Total | 0.56*** | 0.49*** | 0.60*** | 0.60*** | 0.74*** | 0.51*** | 0.76*** |

**Table 2.** Canonical Correlation analysis.

| Control variable | | Canonical factor | | | Criterion variable | | Canonical factor | | |
|---|---|---|---|---|---|---|---|---|---|
| Variable X | $\chi_1$ | $\chi_2$ | $\chi_3$ | $\chi_4$ | Variable Y | $\eta_1$ | $\eta_2$ | $\eta_3$ | $\eta_4$ |
| professional knowledge | -0.692 | -0.058 | 0.463 | 0.505 | ideal thinking | -0.824 | 0.409 | -0.308 | 0.234 |
| professional services | -0.670 | 0.586 | -0.246 | 0.170 | Curriculum content | -0.904 | 0.061 | 0.076 | -0.286 |
| professional ethics | -0.786 | 0.270 | -0.106 | 0.012 | teaching resources | -0.754 | -0.628 | -0.151 | -0.038 |
| professional autonomy | -0.770 | 0.240 | 0.254 | 0.069 | teaching methods | -0.862 | 0.014 | 0.343 | -0.149 |
| professional development | -0.939 | -0.166 | 0.071 | -0.284 | Diverse assessment | -0.808 | -0.203 | 0.431 | 0.329 |
| professional organizations | -0.640 | -0.436 | -0.470 | 0.306 | | | | | |
| Extract variance (%) | 57.171 | 11.582 | 9.611 | 7.714 | Extract variance (%) | 69.176 | 12.136 | 8.546 | 5.366 |
| Overlap (%) | 35.987 | 1.652 | 0.565 | 0.192 | Overlap (%) | 43.544 | 1.731 | 0.503 | 0.134 |
| | | | | | $\rho^2$ | 0.629 | 0.143 | 0.059 | 0.025 |
| | | | | | $\rho$ | 0.793*** | 0.378*** | 0.243*** | 0.158* |

*$p<$0.05. *** $p<$0.001.

preliminary questionnaire contained 23 questions, which were evaluated using a 5-point Likert-type scale with scores ranging from 5 to 1.

**Implementation and analysis of pretest questionnaires**

The revised items were formulated into the pretest questionnaire. Item, factor, and reliability analyses were conducted on the returned questionnaires to test for validity and reliability. Details are shown as follows.

***Validity analysis***

A t-test was conducted on the highest scoring group (the top 27%) and the lowest scoring group (the bottom 27%), and the critical value (CR; t-value) of each item was derived. Items with a CR of less than 3.0 and with a correlation coefficient (r-value) of less than 0.30 were deleted. Moreover, a Kaiser-Meyer-Olkin (KMO) value of greater than 0.70 was used to test whether or not the factors were suitable. The KMO value of the profession role perceptions after these items were eliminated was 0.84; the chi-square value in the Bartlett's test of sphericity was 2113.03 and the degree of freedom was 406, which reached a level of significance (p < 0.001). The cumulative explained variance was 64.32%. The KMO value of innovative teaching after elimination was 0.89. The chi-square value in the Bartlett's test of sphericity was 1680.28. The degree of freedom was 253, which reached a

level of significance (p < 0.001). The cumulative explained variance was 65.22% (as shown in Tables 1 and 2).

***Reliability analysis***

The α coefficients of various dimensions in the profession role perception questionnaire and the overall scale were above 0.71 and 0.92, respectively. The α coefficients of various dimensions in innovative teaching questionnaire and the overall scale were above 0.72 and 0.85, respectively. This indicated that the dimensions and the overall scale had superior internal consistency and reliability (as shown in Tables 1and 2).

**RESULTS AND DISCUSSION**

**Teachers' perceptions of professional role and innovative teaching**

A 5-point Likert scale with an average score of 3 points was used to evaluate the results of the questionnaires for professional role perceptions and innovative teaching. The participants who scored more than 3 points in a certain dimension demonstrated a favorable perception or performance in that dimension. A score of

2 points or less, 2-3 points, 3-4 points, 4 points or more, respectively indicated a low, moderate, moderately high, and high degree of perception or performance. Descriptive statistics was employed to analyze the scores obtained by the participants.

**Teachers' perceptions of their professional role**

According to the results, the score for each dimension, in overall, ranged from 3.93 to 4.43, indicating that the teachers exhibited a moderately high and high levels of perception regarding their professional role. For the overall perceptions of professional role, an average score of 4.20 was achieved, representing a high level of perception; which indicates that the teachers favorably perceived their professional role. In terms of each dimension, the participants received the highest average score for professional services ($M$ = 4.43), followed by professional ethics ($M$ = 4.42), professional autonomy ($M$ = 4.25), professional knowledge ($M$ = 4.23), professional development ($M$ = 4.11), and professional organizations ($M$ = 3.93). Specifically, the relatively high scores for professional services and ethics indicated that the elementary school teachers perceived these two dimensions of professional role most favorably. In addition, the participants demonstrated high levels of perceptions on professional knowledge, autonomy, and development. However, the perceptions of professional organizations had the lowest score and a large standard deviation (*SD*) of 0.72, suggesting that the elementary school teachers perceived professional organizations, such as teachers' associations or unions, unfavorably compared with the other dimensions of professional role.

Baggini (2005) indicated that, although teaching occupation has long been accepted as a profession, teachers do not tolerate criticism and questioning of their professionalism. Based on interviews and empirical research, previous studies have found that teachers have high regards for their professionalism and high role standards and expectations of themselves and other teachers (Tichenor and Tichenor, 2005, 2009).

In addition, the reason that teachers perceive professional organizations unfavorably might be related to the various unresolved disputes between teachers and the teacher union, which prompt teachers to have reservations about the functions of professional organizations.

**Innovative teaching**

The results indicated that the score for each dimension, in overall, ranged from 3.70 to 4.40, indicating that the teachers exhibited moderately high and high levels of performance in innovative teaching. Regarding the overall innovative teaching, an average score of 4.11

was obtained, representing a high level of performance in innovative teaching among elementary school teachers. Among the dimensions of innovative teaching, the participants achieved the highest average score for ideal thinking ($M$ = 4.40), followed by curriculum content ($M$ = 4.25), teaching methods ($M$ = 4.18), diverse assessment ($M$ = 4.05), and teaching resources ($M$ = 3.70). The score for ideal thinking was the highest, which indicated that the teachers performed favorably in this dimension. The scores for curriculum content, teaching methods, and diverse assessment also indicated a favorable performance. By contrast, the participants achieved the lowest score for teaching resources (*SD*=0.70), classified in the moderately high score range. This result suggests that the elementary school teachers could not effectively use teaching resources to implement innovative teaching.

Innovation and changes in teaching activities are inevitable, because teachers often encounter challenges derived from the rapid social change in Taiwan. Rinkevich (2011) proposed that the benefits of innovative teaching to teachers and students are unquestionable. Therefore, it was inferred that the reason teachers are concerned about innovative teaching is related to the recent trends of domestic education policies such concern facilitates establishing a solid foundation in teachers' beliefs and intrinsic motivations to apply innovative teaching.

By contrast, Wu (2007) stated that the possibility of information technology hindering interpersonal interaction and abstract thinking during innovative teaching should be avoided. Moreover, Jan emphasized that teachers should reflect on the effect of technology on teaching activities. Therefore, it was inferred that this phenomenon might be the reason teachers have reservations on the use of teaching resources in innovative teaching. Nevertheless, the results, in overall and for each dimension of innovative teaching, all imply that teachers exhibit an active and positive attitude when implementing innovative teaching.

**Relationship between teacher perceptions of professional role and innovative teaching**

*Analysis of product-moment correlation*

The analysis of Pearson product-moment correlation was used to investigate the relationship between the teachers' perceptions of professional role and innovative teaching. Table 3 shows that the professional role perception and innovative teaching were positively and significantly correlated overall ($r$ = 0.76, $p$ < 0.001), indicating a strong correlation between them. Regarding the correlations between the dimensions of the professional role perceptions (that is, professional knowledge, services, ethics, autonomy, development, and organizations) and

**Table 3.** Multiple regression analysis.

| Variable | $R$ | $R^2$ | $\Delta R^2$ | $F$ | β | TOL | VIF |
|---|---|---|---|---|---|---|---|
| professional services | 0.741 | 0.549 | 0.549 | 672.247*** | 0.467 | 0.434 | 2.304 |
| professional knowledge | 0.763 | 0.582 | 0.033 | 383.922*** | 0.168 | 0.647 | 1.546 |
| professional ethics | 0.772 | 0.597 | 0.014 | 271.052** | 0.115 | 0.496 | 2.017 |
| professional organizations | 0.779 | 0.606 | 0.010 | 211.194*** | 0.119 | 0.682 | 1.465 |
| professional services | 0.782 | 0.611 | 0.005 | 172.040* | 0.086 | 0.643 | 1.556 |

*$p < 0.05$; **$p < 0.001$; *** $p < 0.001$.

innovative teaching (that is, ideal thinking, curriculum content, teaching resources, teaching methods, and diverse assessment), the results indicated that all correlations of the dimensions were positive and significant ($r$ = 0.27-0.68, $p < 0.05$). On an overall level and for each dimension, a high level of perception regarding professional role indicates a high level of performance in innovative teaching.

Overall and for each dimension, the professional role perceptions and teaching innovation were moderately positively correlated. Among the dimensions of the professional role perceptions, professional development had the strongest correlation with all dimensions of innovative teaching ($r$ = 0.74, $p < 0.001$). In addition, among the dimensions of teaching innovation, curriculum content exhibited the strongest correlation with all the dimensions of the professional role perceptions ($r$ = 0.69, $p < 0.001$).

### Canonical correlation analysis

Table 4 indicates that the first, second, third, and fourth canonical correlations were statistically significant and that their $p$ values were 0.793 ($p < 0.001$), 0.378 ($p < 0.001$), 0.243 ($p < 0.001$), and 0.158 ($p < 0.05$), respectively. Through the first four canonical factors, the six control variables ($X$ variables) of the professional role perceptions explained 45.912% of the total variance in the five criterion variables ($Y$ variables) of innovative teaching. The results showed that the teachers' perception of professional role is significantly related to their innovative teaching.

The first canonical factor ($\chi_1$) of the $X$ variables explained 62.9% ($\rho^2$ = 0.629) of the total variance in the first canonical factor ($\eta_1$) of the $Y$ variables, whereas $\eta_1$ explained 69.176% of the total variance in the $Y$ variables. Regarding the first canonical factors, the overlapping portion of the $X$ and $Y$ variables was 43.544%, indicating that, through $\chi_1$ and $\eta_1$ professional role perceptions explained 43.544% of the total variance in innovative teaching. Regarding the first canonical correlation, all of the $X$ variables showed a high correlation with $\chi_1$ (> 0.6). Specifically, the structural coefficients of professional knowledge, services, ethics, autonomy, development, and organizations in the first

canonical correlation were -0.692, -0.670, -0.786, -0.770, -0.939, and -0.640, respectively. In addition, all of the $Y$ variables showed a high correlation with $\eta_1$. Specifically, the structural coefficients of ideal thinking, curriculum content, teaching resources, teaching methods, and diverse assessment in the first canonical correlation were -0.824, -0.904, -0.754, -0.862, and -0.808. Therefore, through the first canonical factors, dimensions of professional role perceptions affected the dimensions of innovative teaching. Furthermore, $\eta_1$ explained 62.9% ($\rho^2$ = 0.629) of the total variance in $\chi_1$, which explained 57.171% of the total variance in the $X$ variables. The overlapping portion of the $Y$ and $X$ variables for the first canonical factor was 35.987%, indicating that, through $\chi_1$ and $\eta_1$, innovative teaching explained 35.987% of the total variance in professional role perceptions. Consequently, the dimensions of innovative teaching influenced the dimensions of professional role perceptions through the first canonical factors.

The second canonical factor ($\chi_2$) of the $X$ variables explained 14.3% ($\rho^2$ = 0.143) of the total variance in the second canonical factor ($\eta_2$) of $Y$ variables and $\eta_2$ explained 12.136% of the total variance in the $Y$ variables. The overlapping portion of the $X$ and $Y$ variables for the second canonical factor was 1.731%, indicating that, through $\chi_2$ and $\eta_2$, professional role perceptions explained 1.731% of the total variance in innovative teaching. Specifically, only professional services (0.586), professional organizations (-0.436), ideal thinking (0.409), and teaching resources (-0.628) yielded relatively high structural coefficients compared with the other variables. Therefore, the second canonical correlation predominantly verified the perception on the professional services and organizations influenced the ideal thinking and teaching resource dimensions of innovative teaching through the second canonical factor.

The third canonical factor ($\chi_3$) of the $X$ variables explained 5.9% ($\rho^2$ = 0.059) of the total variance in the third canonical factor ($\eta_3$) of the $Y$ variables, and $\eta_3$ explained 8.546% of the total variance in the $Y$ variables. The overlapping portion of the $X$ and $Y$ variables for the third canonical factor was 0.503%, indicating that, through $\chi_3$ and $\eta_3$, professional role perceptions explained 0.503% of the total variance in innovative teaching. Specifically, professional knowledge (0.463), professional organizations (0.470), ideal thinking (-0.308),

teaching methods (0.343), and diverse assessment (0.431) exhibited relatively high structural coefficients compared with the other variables. Consequently, the third canonical correlation primarily verified the effect of professional services and organizations on the ideal thinking, teaching methods, and diverse assessment dimensions of innovative teaching through the third canonical factor.

The fourth canonical factor ($\chi_4$) of the $X$ variables explained 2.5% ($\rho^2 = 0.025$) of the total variance in the fourth canonical factor ($\eta_3$) of the $Y$ variables, and $\eta_4$ explained 5.366% of the total variance in the $Y$ variables. The overlapping portion of the $X$ and $Y$ variables for the fourth canonical factor was 0.134%, indicating that, through $\chi_4$ and $\eta_4$, professional role perceptions explained 0.134% of the total variance in innovative teaching. Specifically, the dimensions of professional knowledge (0.505), professional organizations (0.306), and diverse assessment (0.329) exhibited relatively high structural coefficients compared with the other variables. Consequently, the third canonical correlation mainly verified the effect of professional knowledge and organizations on the diverse assessment dimension of innovative teaching through the fourth canonical factor.

## Comprehensive discussions of the analyses

According to the results of the product-moment correlation analysis, the overall dimension of the professional role perceptions was moderately correlated with that of innovative teaching. Specifically, among all the dimensions of the professional role perceptions, professional development showed the highest correlation with innovative teaching.

The results of canonical correlation analysis revealed that four significant canonical correlations were observed among the dimensions of both professional role perception and innovative thinking. Through the first canonical correlation, the dimensions of professional role perceptions explained 43.544% of the total variance in the dimensions of innovative teaching, whereas the dimensions of innovative teaching explained 35.987% of the total variance in the dimensions of professional role perceptions. Although the other three canonical correlations exhibited statistical significance, each of them accounted for only 5% or less of the total variance. Specifically, $\chi_1$ exhibited the highest and lowest correlation with professional development and organizations, respectively, whereas $\eta_1$ displayed the highest and lowest correlation with curriculum content and teaching resources, respectively. Consequently, these three correlations contributed little to explaining the relationship between the professional role perceptions and innovative teaching of the teachers.

In summary, the first canonical correlation showed that the professional role perceptions of the teachers displayed substantial explanatory power for explaining teachers' innovative teaching. The results of the product-moment correlation and canonical correlation analysis both suggested that the teachers who perceived their professional development more favorably demonstrated a high performance of innovative teaching. Furthermore, teachers who effectively apply innovative curriculum content demonstrate satisfactory performance in their perception and behavior of innovative teaching. Chen and Fan (2007) asserted that because professional knowledge in education is constantly being updated, teachers should regularly assess their own professional ability and participate in in-service training to overcome subsequent challenges and apply innovation to their teaching. Teachers must play the roles of the developer, innovator, and learner. Through diversified professional development, teachers can periodically enhance their educational knowledge and capabilities to acquire the latest knowledge, thereby enabling them to readily overcome the challenges derived from a knowledge-based economy.

## The predictability of teacher perceptions of professional role on innovative teaching

A collinearity test was conducted before performing multiple regression analysis. Hair et al. (2010) indicated that a multiple regression model can generate invalid results when collinearity exists in the data. A tolerance (TOL) of less than 0.10 and a variance inflation factor (VIF) of 10 or higher suggest a collinearity concern within the data. Table 5 shows that the TOL values of the predicator variables ranged from 0.434 to 0.682, whereas the VIF values ranged from 1.465 to 2.304, indicating that the presence of collinearity among the independent variables was not severe.

## Predictability analysis

Table 5 indicates that all of the dimensions of professional role perceptions, including professional development ($F = 672.247$, $p < 0.001$), professional knowledge ($F = 383.922$, $p < 0.001$), professional ethics ($F = 271.052$, $p < 0.01$), professional organizations ($F = 211.194$, $p < 0.001$), and professional services ($F = 172.040$, $p < 0.05$), demonstrated statistically significant predictability for innovative teaching. The multiple correlation coefficient (R) was 0.782, suggesting that the dimensions of the professional role perceptions significantly predicted the dimensions of innovative teaching on an overall basis.

The total variance in innovative teaching explained by the predictor variables was 0.611, indicating that the dimensions of the professional role perceptions predicted 61.1% of the total explained variance in innovative teaching. Specifically, professional development showed the highest predictability and explained 54.9% of the total variance, followed by professional knowledge (3.3%),

ethics (1.4%), organizations (1.0%), and services (0.5%). The equation for the multiple regression model is presented as follows:

Innovative Teaching = 0.467 × professional development + 0.168 × professional knowledge + 0.115 × professional ethics + 0.119 × professional organizations + 0.086 × professional services

The standardized coefficients (ß) for the five predictor variables in the regression model were positive, indicating that their influence on innovative teaching is positive. High ß values denote a high level of importance, meaning a high degree of influence. Table 5 show that the ß values of professional development, knowledge, ethics, organizations, and services were 0.467, 0.168, 0.155, 0.119, and 0.086, respectively. Among these dimensions, professional development had the highest explanatory power for innovative teaching.

### Comprehensive discussions of the predictability analysis

The multiple regression model shows that the five dimensions (professional development, knowledge, ethics, organizations, and services) of the professional role perceptions positively predicted innovative teaching and explained 61.1% of the total variance in innovative teaching. Specifically, the professional development exhibited the highest predictability. The results are consistent with those of Hsieh (2009), who indicated that the professional development of teachers predicted innovative teaching, and those of Hsieh (2008), who reported that the professional development of teachers positively affects teaching innovation.

In recent years, the Taiwanese government has endeavored to promote teacher professional development and policies regarding teacher evaluation; therefore, the professional development of teachers is deemed as the core value of teacher evaluations (Mercer, 2005). Chen and Fan (2007) proposed that the professional development of teachers is related to how teachers apply and share their knowledge, which enables them to formulate an innovative curriculum design, teaching strategies, and class management and subsequently formulate teaching methods, solve teaching problems, and improve the learning effectiveness of their students.

Therefore, professional development is an essential factor that shapes the professional role of teachers. By regularly participating in various advanced studies, teachers can increase their academic and educational knowledge to remain updated on the most recent information and motivate themselves to actively learn new materials and teaching methods. Through independent learning and peer interaction, teachers can create a learning environment and atmosphere suitable for innovative teaching. In other words, teachers could continuously pursue professional development, actively further their education, and cultivate their professional knowledge to help define their professional role and improve their performance in implementing innovative teaching.

## Conclusion

After the Teachers' Act and the Act of Governing the Appointment of Educators were introduced in 2012 in Taiwan, legal basis was provided for mandating elementary school teachers to renew their licenses through an evaluation and for implementing the teacher career ladder system. This law will serve as the gatekeeper for evaluating the competency of elementary school teachers in curriculum design, class management, research development, and professionalism to improve educational quality and ensure the professional development of the teachers.

Therefore, the purpose of the study was to explore the association between primary school teachers' perceptions of professional role and their innovative teaching in Central Taiwan.

The results gained in this study indicate that the elementary school teachers in Central Taiwan exhibited favorable perceptions of their professional role. Specifically, the teachers highly perceived professional services and professional ethics, whereas their level of perception for professional organizations was the lowest. That is, teachers have high regards for their professionalism and high role standards and expectations of themselves and other teachers.

Furthermore, the innovative teaching performance among teachers was favorable. Specifically, the teachers performed well in ideal thinking, but showed the lowest level of performance in utilizing teaching resources. That is, teachers exhibit an active and positive attitude when implementing innovative teaching.

On the other hand, the professional role perceptions of teachers, particularly the dimension of professional development, were significantly positively correlated with innovative teaching. The professional role perceptions, specifically the professional development dimension, effectively predicted innovative teaching.

Currently, the Taiwanese government has endeavored to promote teacher professional development and innovative teaching performance; therefore, the professional development and innovative teaching performance of teachers is deemed as the core value of teacher evaluations.

## RECOMMENDATIONS

To enhance teachers' professionalism, the negative effects of professional organizations should be avoided

when promoting teacher professional development. According to the results of this study, the teachers perceived most of the dimensions of professional role favorably, except for professional organizations, which yielded a low mean value and high standard deviation. Although the education administration authority has continued to promote policies for evaluating teacher professional development, which substantially enhanced teachers' perception of their professional role, the teachers perceived the dimension of professional organizations differently. This indicates that the teachers and teacher organizations have yet to reach a consensus on various educational topics. Therefore, education administration authorities should continually promote professional evaluation through rational institutionalization, endeavor to cooperate with teacher professional organizations to reach a consensus, and engage in in-depth communications with teachers in Taiwan to resolve disputes. During this process, however, the authorities should avoid the negative effects that teacher professional organizations have about teachers' perception on their professions, in order to enhance the professionalism of teachers.

Teachers could join professional groups and attempt innovative teaching. In this study, the professional development of teachers effectively predicted innovative teaching. However, among the dimensions of professional role perceptions, professional organization achieved the lowest score, and professional development also obtained a score lower than that of other dimensions. Of the dimensions of innovative teaching, teaching resources also yielded the lowest score. Therefore, teachers should acknowledge how teaching methods and learning patterns are rapidly evolving in the current era wherein globalization, Internet usage, and information explosion are a common phenomenon. Instead of working alone, teachers could cooperate with others to apply innovation to teaching. Instead of confining themselves to a classroom, teachers could actively participate in professional educational groups, employ new resources and interact with people around them through activities such as curriculum design discussions, teaching demonstrations, reviews, and reflection. Thus, teachers can acquire novel concepts and ideas by sharing and exchanging their experience with others. Moreover, through repeated cycles of activities such as meetings, observations, self-reflection, and teaching revision, which enable teachers to feel less pressured about making progress and handling tedious affairs, teachers could focus on pursuing innovation in teaching, thus becoming innovative and excellent educators who are willing to attempt overcoming challenges ahead of them.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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*Full Length Research Paper*

# Relationship level of individual value perceptions and competence beliefs of classroom teachers

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The main aim of this study is to reveal classroom teachers' personal value perceptions and the level of their efficiencies. The quantitative research method was used in the research. The target population of the research consisted of 335 classroom teachers in Kars. Multi stage sampling model was selected in order to determine the sampling in the research. First, Kars City Center and its boroughs were accepted as a layer respectively, and then layered sampling was used as a random sampling model. For the sampling, Kars City center and its boroughs in which the schools' and teachers' scale were applied was defined using random sampling model. The tools used for the data collection in the research include Teacher Personal Value Scale and Teacher Efficiency Scale. To determine personal information, personal value perception and the efficiency levels of the teachers, the percent, frequency, and arithmetic average values were defined. Also, to determine whether personal value perception and efficiency levels differed according to the personal characteristic for unrelated sampling, t-test and one-way ANOVA analysis techniques were used. Post hoc test was applied to find the differences in the result of one-way ANOVA test. The Pearson moments correlation coefficient test was done to determine the teachers' personal values and efficiency levels.

**Key words:** Classroom teacher, value, teacher efficiency.

## INTRODUCTION

The concept of value is derived from the Latin word *valerie*, which means valuable or to be strong (Bilgin, 1995). It was first introduced to social science literature by Znaniacki in 1918 (Zavalloni, 1980; Taşdelen, 1998: 8). The concept of value has various meanings. It can be argued that the fundamental difference in the definition and disclosure of values arises from their definition at the local or universal level. The complexity of defining the concept of value is a reality that is caused by subjective and objective perspectives.

In this context, the concept of value is defined in the Turkish Dictionary of Turkish Language Association (www.ttk.gov.tr) as, "the abstract measure, the provision of a thing", and "the complete moral and material elements that include all the social, cultural, economic and scientific aspects of a nation". In general, the concept of value, which can also be defined as the tendency of an individual to prefer certain situations in relation to other individuals (Hofstede, 1991), is, as Schein (1985) explains, the assessment of events, situations and behaviors of social members; and the criteria that they adopt in the trial. Since education can be defined as a

process of raising individuals in line with certain determined aims, it is inevitable that the values, as well as the skills and attitudes acquired in this process, differentiate the individuals' character. Individuals that have developed characters and are equipped with knowledge and skills will inevitably bring positive changes to the social structure (Yazıcı, 2010). Halstead and Taylor (2000: 176-177) express that as teachers comprise the core of value education, they may either want to see the values as a part of their own roles or not; however, the students are certainly aware of the values of their teachers and it is probable that they are influenced by those values. Topics selected by the teachers, methods that they apply, their style of addressing students are the factors that reflect their individual values (Yazıcı, 2010). This makes it easier for the students to grasp the value judgments of the teacher.

If the theory of action-reaction is to be taken, the teachers, who are considered to be one of the most important elements of the education system, will undoubtedly be appreciated with the rate of their effectiveness. This is because the teachers, described as the element that is present in every level of education and teaching, are especially effective and important during the level of the primary school period, because the students in general who are at that level are directed only to their classroom teachers as adult counterparts. This is worthy of note in that it shows the sensitivity of the subject and the importance of teachers' effectiveness. Despite the fact that teachers' effectiveness is so sensitive, the general research on the subject since the first quarter of the 20th century has shown that it is inadequate to determine the general characteristics of an effective teacher. Although, the general research on the subject has increased with time, it has also brought confusion to the field. As Tatar (2010) points out, although there is no consensus on the subject, there are many known features of an effective teacher. It may not be possible to have all of these skills at once; but it must be known that the more a teacher has such skills, the more s/he will be influential.

As researchers consider that there is a connection between individual values and teacher effectiveness, a related research seems to be preferred. With such a research, as explained above, it is anticipated that a contribution will be made to the elucidation of effective teachers' characteristics which have been on the agenda of the researchers for many years. In other words, this study was found to be meaningful for researchers in order to emphasize that one of the reasons behind teacher effectiveness is individual values.

The main purpose of this study is to determine the relationship between individual perception of values and the levels of efficacy by revealing perception of the individual values of classroom teachers and levels of personal and professional competence beliefs. In accordance with the main purpose of the research, the

following questions are asked according to the perceptions of class teachers:

1. What are the individual values of classroom teachers? Do the individual values of the teachers differ according to their personal characteristics?
2. What are the perceptions of classroom teachers regarding their individual and professional competence beliefs? Do the perceptions of classroom teachers regarding their individual competence beliefs differ according to the personal characteristics of the teachers?
3. What is the relationship between perceptions of individual values of classroom teachers and their individual and professional competence beliefs?

## METHODOLOGY

This research used a screening (descriptive) model. Screening models are research approaches that aim to describe past or present situations as they exist. In the screening model studies, the individual, the event, or the object that is subject to the research is defined as they exist within their own circumstances (Karasar, 1998; Büyüköztürk et al., 2014:14). The quantitative research method was employed in the research.

### Population and sampling

The sample of this research consists of 335 classroom teachers who work in Kars. A multi-stage sampling technique was used to determine the sample of the study. First of all, the province center of Kars and its districts are considered as separate layers; and a method of stratified sampling, which is a type of random sampling technique, is preferred. Considering the proportions of each province and province center in the sample, the number of teachers who should be scaled in the province center and the districts was determined. In accordance with the determined sample size, the random sampling technique was employed to determine which school and teacher will be scaled in the province center of Kars and its districts.

### Data collection tools

The data collection tools of the research are "The Value Scale" which was developed by Taşdan (2008) and the "The Teacher Competency Beliefs Scale" which was developed by Yılmaz and Çokluk-Bökeoğlu (2008). The Value Scale was used to determine the individual values of the teachers in the study. The suitability of the preliminary data to explanatory factor analysis was examined through Kaiser-Meyer-Olkin (KMO) coefficient and Batlett Sphericity test. Büyüköztürk (2002) and Özçelik (2010) stated that if the KMO coefficient is higher than 0.60 and the Barlett test is significant, the data are suitable for factor analysis. In Table 5, the KMO coefficient of the Value Scale was found to be 0.95, and the Barlett test result was significant ($p < .05$). Based on these results, it was decided that the data collected were suitable for factor analysis.

In the factor analysis conducted within the scope of the validity study of the "Value Scale", it was identified that the factor loading values of the 32 items in the scale ranged from "0.30" to "0.71", and the matter total correlations of these items ranged from "0.41" to "0.94". It was shown that the scale explained 70.57% of the total variance. The Cronbah Alpha internal consistency coefficient of the scale was determined to be 0.98, and the scale was determined to

**Table 1.** Descriptive statistics of the most and least adopted personal variables of the teachers

| Values | Value | N | X | S |
|---|---|---|---|---|
| | Justice | 304 | 4.84 | 0.52 |
| | Honesty | 304 | 4.84 | 0.56 |
| First five values | Trust | 304 | 4.81 | 0.56 |
| | People-orientedness | 304 | 4.74 | 0.58 |
| | Equality | 304 | 4.73 | 0.64 |
| | | | | |
| | Flexibility | 304 | 4.09 | 1.00 |
| | Result-orientedness | 304 | 3,88 | 1.08 |
| Last five values | Formality | 304 | 3.70 | 1.18 |
| | Respect for seniority | 304 | 3.69 | 1.23 |
| | Obedience | 304 | 3.38 | 1.32 |

be a valid and reliable measure.

**Teacher competency beliefs scale**

The Teacher Competency Beliefs Scale, developed by Yılmaz and Çokluk (2008), was used to measure the teachers' competency beliefs in the research. Yılmaz and Çokluk (2008) first examined the results of the Kaiser-Meyer-Olkin (KMO) value and the Barlett Sphericity Test in order to determine the sufficiency of the sample size. In this analysis, the KMO value was found to be 0.80. This can be described as "very good" (Kalaycı, 2005). Again, the result of the Barlett Sphericity test for the same purpose was also determined to be significant [$X^2$ = 1305.715; $p$ <.01]. Based on these findings, it was decided that the data set are suitable for factor analysis (Kalaycı, 2005; Şencan, 2005; Sönmez and Alacapınar, 2016; Çilan, 2009).

In the factor of Teaching Competency, which is the first factor of the Teacher Competency Scale, there are 14 items, and the factor load values of the items, which are obtained by Vrimax vertical rotation method, vary between 0.38 and 0.75. When the item-total correlations of the items in this factor are examined, it is seen that it changes between 0.32 and 0.65. The common factor variances of the items range from 0.172 to 0.567. The variance explained by this factor alone is 22.30% and the Cronbach-Alpha reliability coefficient is .76.

In the *Personal Qualification* factor, which is the second factor of the *Teacher Competency Scale*, there are 8 items and the factor load values of the items obtained by Varimax vertical rotation method vary between 0.41 and 0.73. The item-total correlations of the items in this factor vary between 0.21 and 0.58, while the common factor variances of the items range from 0.208 to 0.526. The variance explained by this factor alone is 11.55% and the Cronbach-Alpha reliability coefficient is 0.64.

**Analysis of data**

Percentage, frequency and arithmetic mean values of the personal information, individual value perception and personal and professional competence beliefs were used in the research. In addition, *t*-test and one-way ANOVA analysis techniques were applied for unrelated samples in order to determine whether personal values and teacher personal-professional competence belief levels differ according to personal characteristics of the teachers. The Pearson Moments Multiplication Correlation test

was used to determine the personal values of the teachers and the levels of personal and professional competence beliefs.

**RESULTS AND DISCUSSION**

What are the individual values of classroom teachers? Do the individual values of the teachers differ according to their personal characteristics?

As seen in Table 1, the most adopted values of teachers participating in the research are justice, honesty, trust, people-orientedness, and equality. Teachers' least adopted values are the values of obedience, respect for seniority, formality, result-orientedness and flexibility, respectively.

According to Table 2, the most common values of female teachers are justice, honesty, trust, people-orientedness and equality. The most common values of male teachers are honesty, justice, trust, accountability and loyalty. Again, as shown in Table 2, the least adopted values of female teachers are as follows: obedience, formality, result-orientedness, respect for seniority and flexibility. The least adopted values of male teachers are respect for seniority, obedience, formality and result-orientedness. It is noteworthy that in the research, regarding the first five adopted values, male teachers give more importance to accountability and loyalty than female teachers; while female teachers give importance to people-orientedness and equality values than male teachers.

In Table 3, the value perceptions of primary school/secondary school teachers are significantly different in terms of sexuality [t(302)=2.95;p<0.01]. The average scores of the female teachers' value set (145.02) are higher than the male teachers (140.08) as shown in the table.

As shown in Table 4, the most common values of class teachers are justice, honesty, trust, equality and people-orientedness. The most common values of branch

**Table 2.** Descriptive statistics of the most and least adopted variables of female and male teachers.

| Values | Female teachers | | | | Male teachers | | | |
|---|---|---|---|---|---|---|---|---|
| | Value | N | X | S | Value | N | X | S |
| First five values | Justice | 157 | 4.91 | 0.31 | Honesty | 147 | 4.78 | 0.64 |
| | Honesty | 157 | 4.89 | 0.48 | Justice | 147 | 4.77 | 0.66 |
| | Trust | 157 | 4.88 | 0.37 | Trust | 147 | 4.73 | 0.71 |
| | People-orientedness | 157 | 4.85 | 0.32 | Accountability | 147 | 4.69 | 4.29 |
| | Equality | 157 | 4.84 | 0.41 | Loyalty | 147 | 4.64 | 0.72 |
| | | | | | | | | |
| Last five values | Flexibility | 157 | 4.23 | 0.91 | Flexibility | 147 | 3.95 | 1.08 |
| | Respect for seniority | 157 | 3.99 | 1.05 | Result-orientedness | 147 | 3.81 | 1.13 |
| | Result-orientedness | 157 | 3.94 | 1.03 | Loyalty | 147 | 3.47 | 1.29 |
| | Formality | 157 | 3.92 | 1.03 | Obedience | 147 | 3.40 | 1.39 |
| | Obedience | 157 | 3.37 | 1.26 | Respect for seniority | 147 | 3.37 | 1.32 |

**Table 3.** t-Test for differences between value perceptions of female and male teachers.

| Sexuality | N | $\overline{X}$ | S | t | sd | p |
|---|---|---|---|---|---|---|
| Female | 157 | 145.02 | 11.11 | 2.95 | 302 | 0.003 |
| Male | 147 | 140.08 | 17.55 | | | |

**Table 4.** Descriptive statistics on the most and least adopted individual variables of the class and branch teachers

| Values | | Class teachers | | | | Branch teachers | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Value | N | $\overline{X}$ | S | Value | N | $\overline{X}$ | S |
| First values | five | Justice | 249 | 4.86 | 0.52 | Honesty | 55 | 4.81 | 0.51 |
| | | Honesty | 249 | 4.84 | 0.58 | Trust | 55 | 4.81 | 0.51 |
| | | Trust | 249 | 4.81 | 0.58 | Justice | 55 | 4,78 | 0.49 |
| | | Equality | 249 | 4.74 | 0.61 | People-orientedness | 55 | 4.76 | 0.57 |
| | | People-orientedness | 249 | 4.73 | 0.59 | Independence | 55 | 4.69 | 0.60 |
| | | | | | | | | | |
| Last values | five | Flexibility | 249 | 4.10 | 0.97 | Flexibility | 55 | 4.07 | 1.13 |
| | | Result-orientedness | 249 | 3.92 | 1.05 | Result-orientedness | 55 | 3.70 | 1.24 |
| | | Formality | 249 | 3.7 | 1.19 | Formality | 55 | 3.69 | 1.19 |
| | | Respect for seniority | 249 | 3.68 | 1.23 | Respect for Seniority | 55 | 3.69 | 1.21 |
| | | Obedience | 249 | 3.40 | 1.30 | Obedience | 55 | 3.30 | 1.41 |

teachers are honesty, trust, justice, people-orientedness and freedom. As shown in Table 2, the least adopted values of the class teachers are as follows: obedience, respect for seniority, formality, result-orientedness and flexibility. The least adopted values of the branch teachers are obedience, respect for seniority, formality, result-orientedness and flexibility. When the most and least adopted values of class and branch teachers are examined; it is seen that branch teachers, unlike class teachers, give more importance to "freedom" value; while class teachers give more importance to "equity" value

than branch teachers. According to Table 5, there is no difference between total value perceptions of the class teachers and the total value perceptions of the branch teachers [U = 6247,500; p> 0.05].

As shown in Table 6, the most common values appreciated by the teachers who oppose the European Union are justice, trust, honesty, loyalty and determination; for those who support the European Union, the values preferred are justice, honesty, trust, equality and accountability; while for those who say that it does not make any difference, the values preferred are

**Table 5.** Mann-Whitney U test results of teachers' value perceptions according to teaching field.

| Teaching field | N | Mean rank | Sum of ranks | Mann-Whitney U | p |
|---|---|---|---|---|---|
| Class | 249 | 154.91 | 38572.50 | 6247.500 | |
| Branch | 55 | 141.59 | 7787.50 | | 0.30 |

**Table 6.** Descriptive statistics of the most and the least adopted individual variables of teachers who think, "I am against Turkey entering the EU", "It is better to enter the EU" and "It does not make any difference".

| Values | I am against Turkey entering the EU | | | It is better to enter the EU | | | It does not make any difference | | |
|---|---|---|---|---|---|---|---|---|---|
| | Value | $\overline{X}$ | S | Value | $\overline{X}$ | S | Value | $\overline{X}$ | S |
| First five values | Justice | 4.79 | 0.66 | Justice | 4.88 | 0.45 | Justice | 4.91 | 0.34 |
| | Trust | 4.78 | 0.67 | Honesty | 4.85 | 0.50 | Honesty | 4.86 | 0.40 |
| | Honesty | 4.77 | 0.73 | Trust | 4.81 | 0.54 | Trust | 4.84 | 0.37 |
| | Loyalty | 4.69 | 0.65 | Equality | 4.80 | 0.58 | People-orientedness | 4.80 | 0.45 |
| | Determination | 4.68 | 0.64 | Accountability | 4.77 | 4.14 | Appreciation | 4.76 | 0.51 |
| | | | | | | | | | |
| Last five values | Flexibility | 4.02 | 1.02 | Flexibility | 4.16 | 0.99 | Flexibility | 4.10 | 1.07 |
| | Result-orientedness | 3.73 | 1.05 | Result-orientedness | 3.90 | 1.09 | Result-orientedness | 4.06 | 0.99 |
| | Formality | 3.53 | 1.21 | Formality | 3.86 | 1.12 | Respect for seniority | 3.97 | 1.15 |
| | Respect for Seniority | 3.43 | 1.32 | Respect for seniority | 3.76 | 1.17 | Formality | 3.58 | 1.27 |
| | Obedience | 3.08 | 1.40 | Obedience | 3.57 | 1.27 | Obedience | 3.42 | 1.24 |

**Table 7.** One-way ANOVA analysis and descriptive statistics regarding teachers' perceptions about individual variables in the context of Turkey's entry into the European Union.

| Opinion on EU membership | N | $\overline{X}$ | S | Variance source | Sum of squares | sd | Quadratic mean | F | p |
|---|---|---|---|---|---|---|---|---|---|
| Against | 100 | 139.86 | 15.55 | Intergroups | 1160.20 | 2 | 580.10 | 2.68 | 0.07 |
| In favor | 154 | 144.13 | 14.67 | | | | | | |
| It does not make any difference | 50 | 143.58 | 12.83 | Intragroups | 64967.27 | 301 | 215.83 | | |
| Total | 304 | 142.63 | 14.77 | Total | 66127.48 | 303 | | | |

justice, trust, honesty, people-orientedness and appreciation.

As shown in the table, the most accepted values in the three groups are justice, honesty and trust. Teachers who say, "I am against the European Union", unlike other groups, adopt loyalty and determination values more, while teachers who say, "It is better to enter the European Union", unlike other groups, value "equality and accountability" more, teachers who say, "It does not make any difference", unlike other groups, give importance to "people-orientedness and appreciation" more. Thus, it is understood that there is a consensus regarding the least adopted values in the three groups. Although "obedience, respect for seniority, formality, flexibility and result-orientedness" values only differ in ranks, they are the least adopted values in the three groups.

When Table 7 is taken into consideration, teachers' views on Turkey's participation in the European Union do not lead to a meaningful difference in the perceptions of teachers about their values [F (2. 303) = 2.68; p>0.05].

In Table 8, while the most adopted values of the teachers against the privatization in education are justice, honesty, trust, people-orientedness, and equality, respectively; the values that are most adopted for teachers who are in favor of privatization in education are honesty, justice, trust, equality and responsibility. The least adopted values in both groups are flexibility, result-orientedness, obedience, formality and respect for seniority. Teachers who are opposed to privatization in education adopt the value of being "people-oriented" differently than others; whereas teachers who favor the privatization adopt the value of responsibility differently. As shown in Table 9, value perceptions of teachers who

**Table 8.** Descriptive statistics related to the most and least adopted individual variables of teachers who are against and in favor of privatization in education.

| Values | | Opposed to privatization | | | | Not opposed to privatization | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Value | N | $\overline{X}$ | S | Value | N | $\overline{X}$ | S |
| First five values | | Justice | 203 | 4.88 | 0.435 | Honesty | 101 | 4.80 | 0.63 |
| | | Honesty | 203 | 4.86 | 0.536 | Justice | 101 | 4.77 | 0.66 |
| | | Trust | 203 | 4.84 | 0.467 | Trust | 101 | 4.75 | 0.72 |
| | | People-orientedness | 203 | 4.78 | 0.528 | Equality | 101 | 4.69 | 0.71 |
| | | Equality | 203 | 4.75 | 0.611 | Responsibility | 101 | 4.67 | 0.64 |
| Last five values | | Flexibility | 203 | 4.07 | 1.01 | Flexibility | 101 | 4.13 | 0.99 |
| | | Result-orientedness | 203 | 3.90 | 1.02 | Result-orientedness | 101 | 3.83 | 1.2 |
| | | Obedience | 203 | 3.76 | 1.20 | Obedience | 101 | 3.75 | 1.12 |
| | | Formality | 203 | 3.66 | 1.287 | Formality | 101 | 3.60 | 1.15 |
| | | Respect for seniority | 203 | 3.39 | 1.282 | Respect for seniority | 101 | 3.38 | 1.41 |

**Table 9.** t-Test for comparison of the values of teachers who are against and in favor of privatization in education.

| Privatization in education | N | $\overline{X}$ | S | t | sd | p |
|---|---|---|---|---|---|---|
| Opponents | 203 | 143.20 | 13.98 | 0.95 | 302 | 0.34 |
| Proponents | 101 | 141.48 | 16.24 | | | |

**Table 10.** t-test for personal qualification and professional competence beliefs of teachers in terms of their sexuality.

| | Sexuality | | N | $\overline{X}$ | S | t | sd | p |
|---|---|---|---|---|---|---|---|---|
| Personal qualification | | Female | 157 | 52.49 | 6.03 | 0.19 | 302 | 0.84 |
| | | Male | 147 | 52.33 | 8.25 | | | |
| Professional competence | 1 | Female | 157 | 21.77 | 5.30 | 0.49 | 302 | 0.62 |
| | | Male | 147 | 22.07 | 5.26 | | | |

are against and in favor of privatization in education do not differ [t(302) = 95; p>05].

**What are the perceptions of class teachers regarding their personal qualification and professional competence beliefs? Do the perceptions of class teachers regarding their personal qualification beliefs differ according to their personal characteristics?**

As shown in Table 10, there is no significant difference between personal qualification [t(302)=0.19; p>0.05] and professional competence [t(302)=0.49; p>05] beliefs of female and male teachers. As shown in Table 11, there is no significant difference between personal qualification [U=6293,50; p>0.05] and professional competence [U=6376,00; p>0.05] beliefs of class and branch teachers.

From Table 12, it can be said that there is no significant

difference between professional competence [F(2, 303)=1.53; p>0.05] and personal qualification [F(2, 303)=2.49;p>0.05] beliefs in respect of teachers who are against, in favor, and think that it does not make any difference regarding Turkey's entry into the European Union.

As shown in Table 13, there is no significant difference between the personal qualification [t(302)=0.41; p>0.05] and professional competence [t(302)=0.06; p>0.5] beliefs of teachers who are against and in favor of privatization in education.

**What is the relationship between individual perceptions and personal qualification and professional competence beliefs of class teachers?**

As shown in Table 14, there is a very low and negatively correlated relationship between the individual values and

**Table 11.** Mann-Whitney U-test for personal qualification and professional competence beliefs of teachers in terms of their branches.

|  | Teaching field | N | Mean Rank | Sum of Ranks | Mann-Whitney U | p |
|---|---|---|---|---|---|---|
| Personal | Class | 249 | 150.28 | 37418.50 | | |
| Qualification | Branch | 55 | 162.57 | 8941.50 | 6293.50 | 0.34 |
| Professional | Class | 249 | 150.61 | 37501.00 | 6376.00 | 0.42 |
| Competence | Branch | 55 | 161.07 | 8859.00 | | |

**Table 12.** One-way ANOVA test for the difference of teachers' personal and professional competence beliefs regarding their opinions about the European Union.

| Opinion on EU membership | N | $\overline{X}$ | S | Variance source | Sum of squares | sd | Quadratic mean | F | p |
|---|---|---|---|---|---|---|---|---|---|
| Against | 100 | 53.10 | 7.75 | Intergroups | 157.557 | 2 | 78.779 | 1.532 | .21 |
| In favor | 154 | 51.36 | 6.98 | Intragroups | 15475.882 | 301 | 51.415 | | |
| It does not make any difference | 50 | 52.41 | 6.45 | Total | 15633.439 | 303 | | | |
| Total | 304 | | 7.18 | | | | | | |
| Against | 100 | 22.35 | 5.27 | Intergroups | 137.672 | 2 | 68.836 | 2.496 | .08 |
| In favor | 154 | 22.12 | 4.71 | Intragroups | 8299.863 | 301 | 27.574 | | |
| It does not make any difference | 50 | 20.41 | 5.47 | Total | 8437.535 | 303 | | | |
| Total | 304 | 21.91 | 5.27 | | | | | | |

**Table 13.** t-Test for differing views of teachers' beliefs on personal qualification and professional competence regarding privatization in education.

| Views on privatization in education | N | $\overline{X}$ | S | t | sd | p |
|---|---|---|---|---|---|---|
| Opponents | 203 | 52.53 | 7.41 | | | |
| Proponents | 101 | 52.17 | 6.71 | 0.41 | 302 | 0.67 |
| Opponents | 203 | 22.93 | 5.17 | 0.06 | 302 | 0.95 |
| Proponents | 101 | 22.89 | 5.50 | | | |

**Table 14.** Results of Pearson moments multiplication correlation coefficient for the relationship between teachers' level of personal qualification and professional competence beliefs and value perceptions.

| Variable | | Value perception |
|---|---|---|
| | r | -0.09 |
| Professional competence belief | p | 0.08 |
| | N | 304 |
| | r | 0.23 |
| Personal qualification belief | p | 00 |
| | N | 304 |

the professional competence beliefs of the teachers (r=-0.09; p>0.05). Again, there is a meaningful, positive and moderate relationship between the individual values perceptions of the teachers and their personal qualification beliefs (r = 0.23; P> 0.05).

Table 15 shows the relationship between each value

**Table 15.** Results of the Spearman rank difference correlation coefficient for the relationship between teachers' level of personal qualification and professional competence beliefs and value expressions

| Value expression | Personal qualification belief | | | Professional competence belief | | |
|---|---|---|---|---|---|---|
| | n | r | P | n | r | p |
| Freedom | 304 | 0.02 | 0.64 | 304 | -0.05 | 0.38 |
| Innovativeness | 304 | 0.05 | 0.32 | 304 | 0.00 | 0.99 |
| Determination | 304 | 0.20 | 0.00 | 304 | -0.06 | 0.23 |
| Justice | 304 | 0.11 | 0.04 | 304 | -0.07 | 0.17 |
| Transparency | 304 | 0.06 | 0.28 | 304 | -0.06 | 0.24 |
| Trust | 304 | 0.10 | 0.06 | 304 | 0.05 | 0.35 |
| Loyalty | 304 | 0.17 | 0.00 | 304 | -0.06 | 0.24 |
| Honesty | 304 | 0.13 | 0.02 | 304 | -0.03 | 0.56 |
| Tolerance | 304 | 0.14 | 0.00 | 304 | -0.09 | 0.11 |
| Empathy | 304 | 0.02 | 0.61 | 304 | -0.12 | **0.03** |
| Obedience | 304 | 0.20 | 0.00 | 304 | -,09 | 0.08 |
| Consensus | 304 | 0.20 | 0.00 | 304 | -0.08 | 0.13 |
| Independence | 304 | 0.17 | 0.00 | 304 | -0.10 | 0.07 |
| Diligence | 304 | 0.21 | 0.00 | 304 | -0.05 | 0.38 |
| People orientedness | 304 | 0.09 | 0.10 | 304 | -0.01 | 0.74 |
| Success | 304 | 0.18 | 0.00 | 304 | -0.01 | 0.75 |
| Quality | 304 | 0.18 | 0.00 | 304 | -0.04 | 0.41 |
| Result orientedness | 304 | 0.27 | 0.00 | 304 | -0.10 | 0.07 |
| Process-drivenness | 304 | 0.12 | 0.03 | 304 | -0.12 | 0.03 |
| Appreciation | 304 | 0.17 | 0.00 | 304 | -0.01 | 0.75 |
| Collaboration | 304 | 0.11 | 0.03 | 304 | 0.04 | 0.41 |
| Sharing | 304 | 0.07 | 0.00 | 304 | 0.03 | 0.57 |
| Respect for diversity | 304 | 0.15 | 0.00 | 304 | 0.08 | 0.14 |
| Equality | 304 | 0.10 | 0.06 | 304 | 0.02 | 0.68 |
| Participation | 304 | 0.24 | 0.00 | 304 | -0.050 | 0.36 |
| Responsibility | 304 | 0.23 | 0.00 | 304 | -0.02 | 0.66 |
| Social responsibility | 304 | 0.26 | 0.00 | 304 | -0.00 | 0.88 |
| Accountability | 304 | 0.23 | 0.00 | 304 | -0.02 | 0.70 |
| Discipline | 304 | 0.26 | 0.00 | 304 | -0.08 | 0.16 |
| Formality | 304 | 0.16 | 0.00 | 304 | -0.10 | 0.68 |
| Respect for seniority | 304 | 0.20 | 0.00 | 304 | -0.06 | 0.28 |
| Flexibility | 304 | 0.12 | 0.02 | 304 | -0.10 | 0.07 |

judgment that teachers have and the level of personal qualification and professional competence belief. As shown in Table 15, there is a positive, moderate and meaningful relationship between teachers' social responsibility, discipline, accountability, result-orientedness and participation values and personal competence beliefs. Additionally, as shown in Table 15, it is seen that there is a positive, low level and significant relationship between professional qualification belief and the values of flexibility, respect for seniority, formality, discipline, responsibility, respect for diversity, sharing, cooperation, appreciation, process drivenness, quality, success, diligence, independence, consensus, justice, honesty, loyalty, and determination.

When the relationship between the individual values of the teachers and their professional competence is examined, it is found that there is a low level, negative, and a meaningful relationship between only the process-drivenness value and the professional competence belief.

## CONCLUSION AND SUGGESTIONS

In general terms, the most common values of teachers are justice, honesty, trust, being people-focused and equality. Teachers' less adopted values are obedience, respect for seniority, formalism, result-orientation and flexibility. Among them, female teachers completely overlap with the general teacher profile, while male teachers, people-orientedness and equity values are

replaced with accountability and loyalty values.

Likewise, regarding the least adopted values, the opinions of female teachers are in harmony with the general teacher profile, while the opinions of male teachers are slightly shifted in the same way as the opinions of the same teachers. Therefore, for male teachers, this value stands out as a respect for seniority. In this context, it has been determined that female teachers are in favor of perceptions of values as compared to male teachers. Although, the dimensions of the study are not similar, there are some studies that show that female and male teachers are associated with perception of value. It may be possible to make comparisons in this respect. For instance, according to the findings obtained from the research carried out by Işık and Yildiz (2014), the security and self-orientation sub-dimensions of value perceptions are higher in female teachers than male teachers. In other words, there is a harmony with the difference in favor of female teachers with the study which is the subject of the current research. According to Yilmaz's (2009) research, female teachers' attitudes towards universality, benevolence, harmony and security values are higher than that of male teachers. With Yilmaz (2009)'s study, it can be said that the findings overlap only in terms of sexuality.

There is no significant difference found between the value perceptions of the class and branch teachers involved in the research, as opposed to the meaningful difference that emerged according to the sexuality. It is observed that only branch teachers have added freedom to the first five values they have adopted mostly; on the other hand, class teachers bring equity into the forefront. In fact, one of the important results of the research is that the opinions of Turkey on the European Union participation do not reveal a meaningful difference among the teachers' value perceptions. Such that, the values that are most commonly adopted by teachers who are in favor of or against the European Union, are justice, honesty and trustworthy.

Just as in the case of the findings relating to the European Union, teachers' value perceptions do not differ between teachers who are opposed to privatization in education and those who are not. Apart from these, the personal qualification and professional competence beliefs of the teachers did not significantly differ according to sexuality, and there was no significant difference between their views on the entrance of Turkey into the European Union in terms of the same criteria.

Likewise, there is also no meaningful difference between the views of teachers on the personal qualification and professional competence beliefs of those who are opposed to privatization and those who are not. However, there is a very low, negative and insignificant relationship between the individual value perceptions of the teachers and the levels of professional competence beliefs. Again, there is a moderate, positive and meaningful relationship between individual values

perceptions of teachers and their beliefs about personal qualification.

There is also a positive, moderate and meaningful relationship among teachers' social responsibility, discipline, accountability, result-orientedness, participation and personal competence beliefs. Additionally, there is a positive, low level and significant relationship between personal qualification belief and flexibility, respect for seniority, formality, discipline, responsibility, respect for diversity, sharing, cooperation, appreciation, process-drivenness, quality, success, diligence, independence, consensus, justice, honesty, loyalty, and determination values.

When the relationship between the individual values of the teachers and the beliefs of professional competence is examined, it is found that there is a low and meaningful relationship between only the process-drivenness value and the professional competence belief in the negative direction. Since value perceptions of female teachers as compared to male teachers are in favor of female teachers, in-service training seminars may be prepared, in the first instance for male teachers.

In order to make the results of this work limited to Kars province more general, similar studies can be done with teachers in different cities and different branches. In other words, in order to make the findings of studies done in this field in Turkey practicable, it should be done in different regions and its results should be shared.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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*Full Length Research Paper*

# The effect of the pedagogical Formation Education process in Turkey on self-efficacy beliefs of students in teaching

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In light of the recent ongoing debates in Turkey, the Formation Education, which is provided to students who graduated from faculties other than Educational Faculties, targets to make graduate students acquire the requirements and efficacy criteria of the teaching profession, which are defined in the Turkish National Education Basic Law 1739, Item 32? However, there have been a great deal of serious debates on several issues such as the difference in quality between the teacher candidates who receive this training after graduating from science-literature faculties and the teacher candidates who graduated from educational faculties, the reflection of this difference in the educational community, the duration in which this training is provided, the desire of each candidate receiving this training for being a teacher, and the changes in the attitudes of teacher candidates who receive formation education towards their profession. In this study, which was based on empirical model, the basic aim was to investigate the effects of Formation Education, which is one of the issues of debate in recent years, on the self-efficacy beliefs of students. When the results obtained in the present study were analyzed, it was observed that students experienced a decrease in the self-efficacy levels in the Formation Education process.

**Key words:** Formation Education, teaching, belief, efficacy.

## INTRODUCTION

The sole purpose of educational systems is to raise conscious individuals are beneficial to themselves and to the society of which they are members. Teachers have great responsibilities in ensuring this (Gömleksiz, 2002, p. 150). For this reason, the expectations of the society from teachers have always been high; and the teaching profession has been referred to with high positions and values to reach these social expectations (Başaran, 1994, p. 77). Teaching is one of the oldest professions of human history; because, with this profession, the teaching concept has been integrated in the lives of humans (Koçoğlu, 2013, p.193). It is important that such

a profession that is cared for so much by all sections of the society is performed by people who love teaching and who are enthusiastic about it (Yılman, 2006, p. 181). Naturally, the humane skills that are necessary for teachers to adopt require a positive personal adequacy (Bandura, 1989, p. 1176).

In education, whose general purpose is to make individuals become beneficial for society (Küçükahmet, 2012, p. 180), the duties, responsibilities, roles and adequacy of teachers who are associated with an extremely comprehensive role are critical factors to form the educational activities in agreement with the main purpose of education (Helvacı, 2010, p. 297). In brief, the duty of teachers is to help students continue learning activity in all aspects. Learning is one of the consistent and specific behaviors which involve several aspects like the learning style, perception, processing, organizing and making sense of the stimuli around the individual (Aydemir et al., 2016, p. 1882). As the first and oldest profession, the teaching profession (Çelikkaya, 2014, p. 6,8), whose core activity is raising humans, refers to the attributes that are owned by a teacher in order to perform education and teaching in an efficient way. It also refers to the knowledge, understanding, skills and attitudes that are required by this profession to realize it in the expected manner (Şahin, 2009, p. 291).

Today, with the increasing duties and responsibilities of teachers, the "Professional Competence" concept, which refers to the power to perform and sustain a profession, and to the specific knowledge, skills and equipment required by a profession, has gained great importance in terms of increasing the quality of education (Çelebi, 2014, p. 127). For teachers, performing these requirements in the expected manner is directly related with their beliefs in performing their duties and responsibilities in due manner (Gürol et al., 2010, p. 1396).

The self-efficacy concept, which is associated with several cognitive and motivational processes, defined as having, being aware of, and using the rights of oneself, performing the expected duties, undertaking responsibilities and liabilities (TDK, 2015), was first mentioned by Bandura, and was based on the Social-Cognitive Theory (Bandura, 1993, p. 117). The efficacy of a teacher, on the other hand, may be considered as a factor that explains individual differences in performing an efficient education (Gibson and Dembo, 1984, p. 569). This factor refers to having certain skills like being planned to run educational processes, fluent speaking, and applying educational techniques by using several tools (Açıkgöz, 2000, p. 82). In addition to these qualifications, having a positive effect on the learning of students, and being in direct relation with the success of students are the characteristics showing that teaching cannot be performed by ordinary person (Kushner, 1993, p. 1). Furthermore, several concepts like student motivation, adopting innovation, classroom management, and productiveness of education are included in the self-

efficacy concept (Woolfolk and Hoy, 1990, p. 81).

The belief in efficacy in a professional field means that the teacher trusts in himself/herself or has judgments claiming that he/she has the skills to achieve success in his/her profession (Wolters and Daugherty, 2007, p. 181). This is the belief in being able to show the behaviors that are needed to achieve success for the desired target (Bandura, 1977, p. 193). The trust of teachers in having the skills that will ensure students will perform well in learning is one of the few educational variables that provide us with foresight in reliable learning outcomes and teacher practices (Poulou, 2007, p. 192). The belief of the teacher in being able to organize the learning of students and the level of trust in this context depend mostly on the experiences and school culture (Protheroe, 2008, p. 42).

Self-efficacy, which has a critical place in the self-perception of an individual, is a basic concept that is considered to be influential on behaviors. Self-efficacy is the belief and judgment on the skills of an individual in coping with different situations, in achieving success in an activity, and self-perception on his/her capacity (Senemoğlu, 2012, p. 228). It is the capacity of an individual in organizing the activities that are required to show a certain performance on the events that affect his/her life. Self-efficacy belief is one of the basic determiners of personal motivation and behavior, and it tells the individual how to feel and think. A strong self-efficacy belief increases the well-being and success of an individual in many aspects. In this context, individuals that have high self-efficacy beliefs about their capacities see difficult duties as the obstacles that will provide an opportunity for development instead of seeing them as threats that must be avoided. Such an effective viewpoint feeds a deep concentration and a basic interest in business life by decreasing stress (Bandura, 1994, p. 71). The expectations that affect self-efficacy perception directly are important factors affecting the selection of proper behaviors of a teacher and the efforts spent to achieve certain goals. In this sense, the self-efficacy expectation is the belief of a teacher in achieving success in a behavior that requires reaching a certain goal (Bandura, 1977, p. 193).

According to Bandura (1997, p. 1), there are several affective-cognitive properties in people with high self-efficacy perceptions like a desire to teach, a wider frontier concept, thinking in an accurate manner, being prepared for difficulties, and a decisive devotion to overcome obstacles. They can predict possible outcomes by shaping and assessing their beliefs in what they can do. They can plan their reactions by organizing targets. Since they can manage risks, they feel less pressure. They have control over uncomfortable opinions.

According to Jerald (2007, p. 1), a teacher with high self-efficacy belief has the tendency of making planning and organization at a very high level. Such a teacher is more enthusiastic to try new methods and is open to new

ideas to cover the needs of students. When things do not go right, such a teacher remains patient and is willing to continue. He/she is less critical in the face of students' mistakes and less enthusiastic to send difficult students to special education institutions.

Teacher self-efficacy perception was first conceptualized in 1976. A strong and significant relation was determined between the self-efficacy beliefs of teachers and the reading test scores of the students in a study which was conducted in the context of a Reading Program preferred at the school where the study was conducted (Armor et al., 1976, p. 24). In another study, a positive relation was detected between the self-efficacy beliefs and the rate of achieving targets, innovation of teachers, and increase in student performance (Ashton, 1984, p. 30). It was reported in another study that the self-efficacy perception was a strong explanatory variable in sustaining educational activities, in achieving targets and increasing the performances of students and teachers (Bergman et al., 1977, p. 11; Girgin, 2017). The following outcomes were reported in previous studies; teachers who consider themselves as efficient at a high level in teaching and who had self-confidence are highly efficient in new educational activities that require mastership; and such teachers are the most understanding and innovative teachers (Guskey, 1987, p. 10). Teachers who have high personal and educational efficacy perceptions are more passionate than their colleagues and have higher end-of-the-year targets (Allinder, 1995, p. 251; Poulou, 2007, p. 191; Bulut and Oral, 2011, p. 1). A healthy school medium that has efficient administrative auditing and academic activities contributes to the development of self-efficacy perception in teachers which may be influential on the learning of students (Hoy and Woolfolk, 1993, p. 355). A significant relation was determined between the self-efficacy of teachers in classroom management and in the observed classroom organization, and in the educational-emotional support. In other words, it was observed that the teachers who considered themselves as efficient in decreasing and managing unwanted behaviors of students were good at managing behaviors, using the time allocated for education in an effective manner, and provided various supports for students in educational and emotional terms (Ryan et al., 2015, p. 152). It was also determined that the willingness to apply more interesting and difficult techniques and creative programs in education, and classroom management practices intended for developmental, affective and cognitive targets were related with high self-efficacy perception (Ross, 1994, p. 2). It was reported in a study that female teacher candidates considered themselves as being more efficient in student participation and classroom management; and male teachers considered themselves to be more efficient in educational strategies (Aydemir et al., 2014, p. 164). In addition, it was reported in several studies that teacher candidates had the fear of non-communication during classes (Morgil et al., 2004, p. 70);

teacher candidates had more positive attitudes than the teachers who were in active duty (Arslan, 2013, p. 71); there were no differences between the self-efficacy perceptions of the students who graduated from Educational Faculties and those who graduated from Science-Literature Faculties and received Formation training (Elkatmış et al., 2013, p. 41).

## The purpose of the study

The purpose of this study is to determine the effects of the Pedagogical Formation education process on the students graduating from Science and Literature, Theology, Fine Arts and Health Sciences Faculties as regards self-efficacy beliefs in the teaching profession.

## METHODOLOGY

### The model of the study

The Single Group Pretest-Posttest Empirical Design, which is one of the Quantitative Research Methods, was used as the method in the present study for the purpose of determining the answers to the questions of the study. In this model, the knowledge of one single group is measured before the application, and then the study is conducted. After the application, the group is subjected to the measurement process again. If the data obtained show statistically significant differences between the Pretest and Posttest results, it is accepted that this difference stems from the application (Baştürk, 2012, p. 37; Özmen, 2014, p. 56).

### The study group

The study was conducted at Inonu University Educational Faculty in 2014-2015 academic years with the Pedagogical Formation students. The pre-test was applied to 250 students who were selected randomly at the beginning of the academic year, and the post-test was applied to 250 students who were selected randomly at the end of the academic year. 236 scales that covered the application criteria were assessed in the pre-test, and 171 scales that covered the same criteria were assessed in the post-test.

### The data collection tool

The "Teacher Self-Efficacy Scale", which was developed by Tschannen-Moran and Woolfolk Hoy (2001), and adopted into Turkish by Çapa et al. (2005), was used in the study as the data collection tool. The scale consists of a total of 24 items and 3 sub-dimensions, which are "*student participation*", "*teaching strategies*" and "*classroom management*". The reliability of the scale was 0.94 for total self-efficacy score; 0.87 for student participation; 0.91 for teaching strategies; and 0.90 for classroom management (Tschannen-Moran and Woolfolk Hoy, 2001). In the study conducted by Çapa et al. (2005) on teacher candidates in Turkey, the reliability scores were found as 0.93 for total self-efficacy scores; 0.82 for "*student participation*"; 0.86 for "teaching strategies", and 0.84 for "classroom management".

### Findings and interpretations

In this part, the findings on professional self-efficacy beliefs of the

**Table 1.** The t-test results for measurements related with pre-test-post-test average scores.

| Measurement | Number of Items | $\overline{X}$ | S | sd | T | p |
|---|---|---|---|---|---|---|
| Pretest | 24 | 7.05 | 0.323 | 23 | 7.61 | **0.000** |
| Posttest | 24 | 6.8 | 0.257 | | | |

**Table 2.** The t-test results of the post-test Scores for the irrelevant measurements according to gender.

| Gender | N | $\overline{X}$ | S | sd | t | P |
|---|---|---|---|---|---|---|
| Female | 122 | 6.75 | 0.98 | 169 | 0.866 | 0.388 |
| Male | 49 | 6.91 | 1.23 | | | |
| Total | 171 | | | | | |

students receiving Pedagogical Formation education are given.

***The findings on the differences between the pre-test-post-test values in professional self-efficacy beliefs of the pedagogical formation students***

The analysis of results on the difference between the pre-test-post-test results on self-efficacy beliefs of Pedagogical Formation Students are given in Table 1. It was observed that there was a significant decrease in the items in the self-efficacy beliefs of teachers in teaching profession after the Pedagogical Formation process [$t_{(23)}$=7.61, p<0.05]. While the average of self-efficacy beliefs in teaching profession before the Pedagogical Formation education was $\overline{X}$=7.05; it decreased to $\overline{X}$=6.8 after the training. The difference between pre-test and post-test averages shows that the self-efficacy beliefs of students decreased at a significant level in formation education process. This finding may be interpreted as awareness was formed on the fact that teaching profession requires certain qualifications and equipment, unlike what is thought about this profession; and pedagogical knowledge obtained by students in the process brought them a certain conscious level.

***Findings on the analysis of post-test scores of pedagogical formation students according to gender***

The findings on the analysis of self-efficacy belief posttest scores of pedagogical formation students according to the gender variable are given in Table 2. It was determined that the self-efficacy beliefs of male students ($\overline{X}$=6.91) were higher than that of female students ($\overline{X}$=6.75); however, it was also determined in the analyses that the self-efficacy beliefs did not show any significant differences according to the gender variable [$t_{(169)}$=0.866, p>0.05].

## RESULTS AND DISCUSSION

Several steps have been taken in order to improve the teacher training programs in Turkey. It is still a question in the minds of many people whether these steps were taken because of political and social concerns or because of teacher training approaches. Higher

Educational Council (HEC) abolished the Pedagogical Formation program in April 5, 2012 by stating that there were too many teachers to be appointed after the Pedagogical Formation trainings. After this decision, which received reactions of Science-Literature Faculties, first the right to provide Pedagogical Formation was granted to Science-Literature Faculties in 2013 and then, it was declared that branch teachers would be educated and trained by Science-Literature Faculties (Yıldırım and Vural, 2014, p. 82). Instead of providing detailed information by HEC on this subject, Council of Deans of Science-Literature Faculties' (CDSLF) President made some explanation to the public. This shows that Science-Literature Faculties achieved success and it was declared to the public. However, instant, political and social decisions must be avoided in educational field. Education is the job of planning for the future. Decisions that will save the present day must be avoided in an institution that builds the future. HEC must define the long-term teacher training strategy and the approaches that are the bases of these strategies. The institutions that will train teachers must be informed in detail about these strategies and approaches for future planning; and the teacher training system must proceed in this way with sound steps (Yıldırım and Vural, 2014, p. 83). In the context of the decision taken by HEC, Formation Education practices started in educational faculties of the universities in Turkey. Unfortunately, the debates on this issue have continued until our present day. Despite these debates, an increase has been observed in the demand for teaching profession with the increase of employment of teachers in Turkey. When the increasing demand and the debates on this field are considered, it is observed that there is an inverse proportion. However, we may also claim that the appointments made so far without considering the efficacy criteria of teaching profession have also been influential on the increasing demands for teaching profession. Unfortunately, a teacher who is

teaching his/her subject based on the principle of "from the concrete one to the abstract one", which is one of the special education principles, and who is using up-to-date techniques (Koçoğlu, 2017), is only performing the requirements of the certificate or diploma he/she is given. The basic aim of formation education must be to increase the number of such teachers.

Although it has been reported in previous studies and in the present study which focused on self-efficacy that formation education is a requirement in Turkey (Demirtaş and Kırbaç, 2015, p. 148; Kartal and Afacan, 2012, p. 95; Katkat and Mızrak, 2003, p.156). Is it not necessary to change the dimension of the debates? The people who discuss these issues must be asked this question. In actual fact, the dimension that awaits change is asking the questions: "What are the differences between the self-efficacy belief levels of a teacher candidate receiving the certificate showing that he/she has the right to be a teacher? and "What are the reasons of these differences?" These questions will increase the quality of the debates, and will change the viewpoint on Formation Education. The present study was conducted in the light of this aim.

There are many university graduates who graduated from different faculties and would like to be teachers. For this purpose, the professional qualities needed by teacher candidates who are not graduates of Educational Faculties are provided with the Pedagogical Formation Education. The extent to which the students, who are to participate in this process, feel themselves as having self-efficacy in the teaching profession must be questioned, and answers must be given. The present study was conducted for this purpose. In the analyses, a significant decrease was detected in the professional self-efficacy levels of students after the Pedagogical Formation Education, and this interesting result was interpreted as pointing out to the necessity of Pedagogical Formation Education. As a matter of fact, this process provides students with the opportunity to assess their professional self-efficacy, and educators with the opportunity to assess the process. In the present study, the significant difference detected between the pretest and posttest teacher self-efficacy levels provides us with the most important evidence against those who want to simplify teaching profession in Turkey in many ways.

Based on the present study, it was concluded that the effort must be given to increase the quality of Pedagogical Formation Education by relevant units rather than discussing whether or not this education will be given. In addition, the criteria for receiving Pedagogical Formation Education must not be eliminated and the quality of this education must not be decreased with the concern of covering teachers' needs in the country.

## CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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