

## PAPER

# The Development of Teacher Training Curriculum for Organizing of Learning Experiences to Enhance Social Development for Persons with Autism Spectrum Disorder

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## ABSTRACT

The present study sought to (1) assess the needs in the development of the teacher training curriculum on providing learning experiences for promoting social development among persons with autism spectrum disorder (ASD), (2) develop the curriculum, and (3) examine its effectiveness. A mixed-method approach and research and development were adopted. The data were collected during July 2022–April 2023. The results are reported: 1. A review of documents, literature and related studies showed that teacher preparation was required for promoting persons with ASD's social development. Additionally, the survey indicated that the school directors' primary need for self-improvement was the frequency of attending training programs ( $PNI_{Modified} = 0.54$ ), while that of the teachers was knowledge and understanding of promoting social development ( $PNI_{Modified} = 0.21$ ). Also, the school directors' strongest need in providing learning experiences was continuous promotion of social development ( $PNI_{Modified} = 0.47$ ), and that of the teachers was implementation of learning activities based on lessons plans ( $PNI_{Modified} = 0.21$ ). 2. The developed curriculum comprised eight components: rationale, objectives of the curriculum, contents, training activities and methods, training materials, durations, venues, and measurement and evaluation. Concerning its quality, the curriculum achieved a high level of suitability ( $\bar{x} = 4.38$ , S.D. = 0.16). 3. After the curriculum implementation, the teachers achieved higher post-training scores ( $\bar{x} = 22$ ) than their pre-training scores ( $\bar{x} = 17.20$ ) and were most satisfied ( $\bar{x} = 4.71$ , S.D. = 0.08). Provision of learning experiences achieved a mean score of 84.67%.

## KEYWORDS

development of the teacher training curriculum, persons with autism spectrum disorder, social development

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## 1 INTRODUCTION

Over the past three decades, the principles of thinking and components of social justice have been constantly evolving. A collection of relevant articles has brought to light that social justice features three main pillars, namely equality, equity, and reciprocity. Specifically, equality is grounded on the view that all human beings possess full and equal rights to dignity, basic needs, and equitable opportunities from society, regardless of individual differences and preferences. Equity stems from the belief that every human being is entitled to be provided with products from the society on the basis of fairness, needs, or individual differences, which could be referred to as “a principle of differences”. Reciprocity, on the other hand, is a component of social justice which has been increasingly discussed in the recent decade [1] [2] [3] [4] [5]. Under the constitution of the Kingdom of Thailand, the law on protection of the rights of persons with disabilities has been enforced. In particular, it serves as the organic act, namely [6], which addresses the protection of persons with disabilities. Article 20 under this act stipulates that those with disabilities shall have the rights to access and utilize facilities, social welfare, and other forms of assistance provided by the state.

Based on a review of literature, related studies and the state of problems concerning social development among persons with autism spectrum disorder (ASD), teachers contribute significantly to enhancing abilities and address issues among these individuals who are increasing in numbers. In reference to the comprehensive data on epidemiology provided by [7], there has been a growing prevalence of ASD during the past decade. In Asia, there had been a tremendous rise in the prevalence rate of ASD from 1.9:10,000 in the pre-1980 period to 14.8:10,000 in 2013. Recent research in the United States of America has reported the 1:68 prevalence rate for ASD in school-aged children, while Thailand’s prevalence rate is approximately 9.9:10,000. Given a surge in persons with ASD, Special Education Bureau has increased the number of classrooms for them. In addition, it has provided a larger number of teachers to accommodate the growing proportion of those with ASD by reassigning teachers from other areas of special education with a downward trend to the field of ASD, where they serve as instructors and facilitators. These reassigned teachers for persons with ASD do not complete their education in the field of special education but in other fields, including Thai, mathematics, science and technology, social studies, religion and culture, health and physical education, arts, occupations and technology, and foreign languages. Consequently, there has been a paucity of the essential knowledge and skills among these teachers to provide learning experiences to enhance the persons with ASD’s social development.

Social development among the persons with ASD has been regarded as one of the disorders which should be enhanced through methods and techniques tailored to individuals with special needs to enable them to interact with others and integrate into society without causing undue distress to themselves or others. As a result, the teachers for those with ASD who serve to enhance abilities and resolve issues faced by those individuals should be equipped with a body of knowledge and skills in providing learning experiences for promoting social development. Thus, the present study sought to develop the teacher training curriculum on providing learning experiences for promoting persons with ASD’s social development. It was conducted in the hopes of enabling the teachers to create learning experiences to enhance social development, thus easing the challenges of navigating life within society faced by those with ASD.

## 2 MATERIALS AND METHODS

The present study adopted a mixed-method approach and research and development. It was carried out through three phases as illustrated in Figure 1 below.

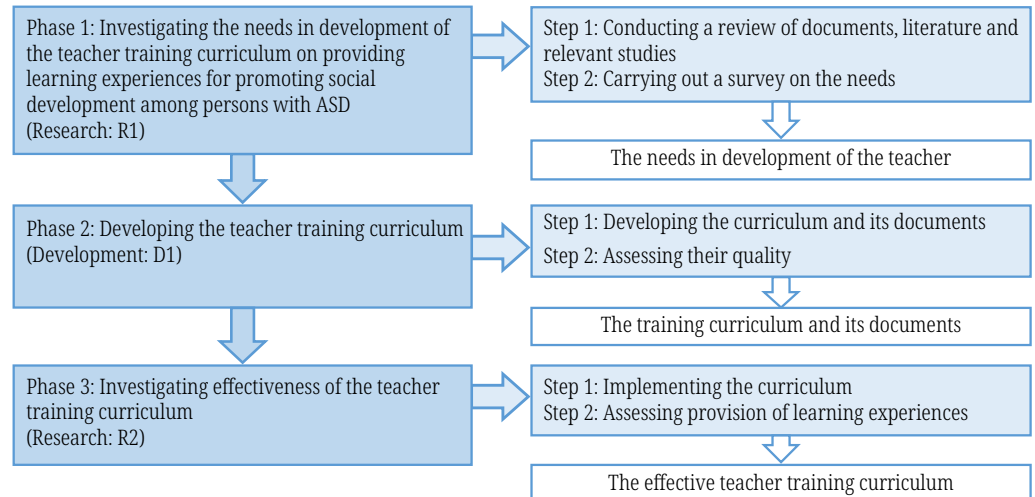


Fig. 1. The present study adopted a mixed-method approach and research and development

### 2.1 Materials

- Phase 1: The synthesis of concepts forms and needs assessment questionnaires
- Phase 2: The focus group interview and the evaluation form of accordance for draft teacher training curriculum
- Phase 3: The pre- and post-training assessment, the questionnaires for participants' satisfaction and the observation form for learning experiences

### 2.2 Participants

The details of the participants in this study are displayed in Figure 2 below.

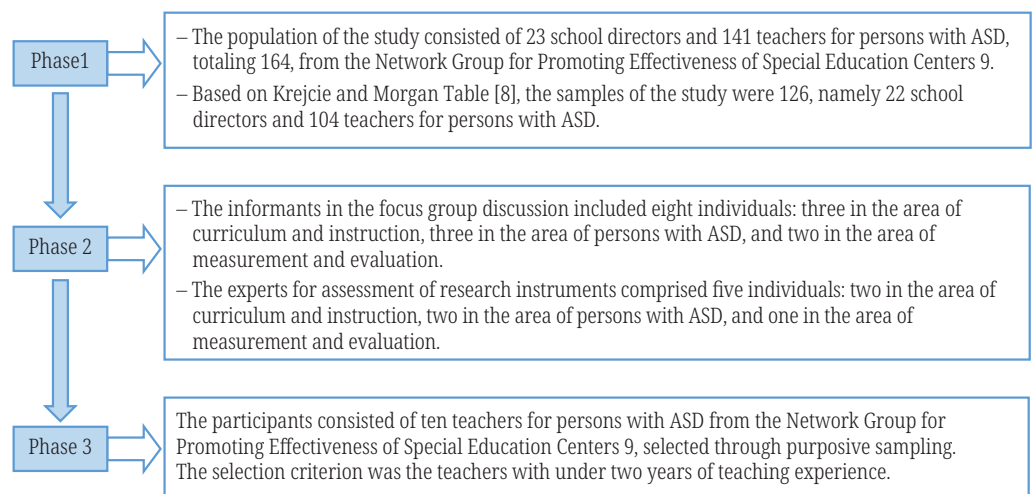


Fig. 2. Participants of the study

### 3 RESULTS

#### 3.1 Phase 1

Investigating the needs for the development of the teacher training curriculum on providing learning experiences for promoting social development among persons with ASD.

1. The synthesis of concepts from documents, relevant literature, and related studies showed that persons with ASD were the emerging trend and continued to proliferate. Promoting their access to educational services is paramount. Consequently, these school-aged individuals should be supported and developed, with teachers for persons with ASD serving as a facilitator, to foster their social development, which would contribute to positive long-term outcomes. In addition, the synthesis contributed to providing a variety of contents spanning educational rehabilitation, behavior therapy, social stories, and reinforcement approaches as a means to enhance social development in persons with ASD.
2. The results on a survey of school directors' needs for types of training demonstrated that their first preference was lectures, followed by programmed instruction and simulation, respectively. In the meantime, the teachers for persons with ASD's three-ranking preferences for classifications of training were individual practice, case studies, and demonstrations, respectively. Additionally, the results illustrated that the school directors' three-ranking choices of principles and techniques for promoting social development among those with ASD were behavior therapy, educational rehabilitation, and applied behavior analysis, while those of teachers were occupational therapy, behavior therapy, and applied behavior analysis, respectively.
3. On school directors' needs in self-improvement, the results showed that the overall current state was rated at a moderate level ( $\bar{x} = 2.82$ , S.D. = 0.90), with a high level of expectations ( $\bar{x} = 4.20$ , S.D. = 0.48). In delving into each aspect of their needs, it was found that their primary need was the frequency of participation in training programs on promotion of social development among persons with ASD ( $PNI_{Modified} = 0.54$ ), with a moderate level of the current state ( $\bar{x} = 2.77$ , S.D. = 1.02) and a high level of expectations ( $\bar{x} = 4.27$ , S.D. = 0.70). In respect of the teachers' needs for self-improvement, the overall current state was at a high level ( $\bar{x} = 3.41$ , S.D. = 0.65), with a high level of expectations ( $\bar{x} = 3.96$ , S.D. = 0.66). Among their needs in this area, their most crucial need was knowledge and understanding of social development among persons with ASD ( $PNI_{Modified} = 0.21$ ), with a moderate level of the current state ( $\bar{x} = 3.22$ , S.D. = 0.88) and a high level of expectations ( $\bar{x} = 3.90$ , S.D. = 0.81).
4. In relation to the school directors' needs in providing learning experiences for persons with ASD, it was found that the current state was overall at a moderate level ( $\bar{x} = 3.05$ , S.D. = 0.87), with a high level of expectations ( $\bar{x} = 4.34$ , S.D. = 0.45). Specifically, in taking into consideration each of their needs in this area, the contribution of continuous social development to those with ASD's integration into society was most needed ( $PNI_{Modified} = 0.47$ ), with a moderate level of the current state ( $\bar{x} = 3.00$ , S.D. = 0.92) and a high level of expectations ( $\bar{x} = 4.40$ , S.D. = 0.59). Concerning the teachers' needs in providing learning experiences, the current state was overall at a moderate level ( $\bar{x} = 3.54$ , S.D. = 0.69), with a high level of expectations ( $\bar{x} = 4.01$ , S.D. = 0.68). Considering each aspect of their needs in

this area, their most significant need was implementation of learning activities based on lesson plans ( $PNI_{Modified} = 0.21$ ), with a moderate level of the current state ( $\bar{x} = 3.40$ , S.D. = 0.81) and a high level of expectations ( $\bar{x} = 4.10$ , S.D. = 0.75).

### 3.2 Phase 2

Developing the teacher training draft curriculum on providing learning experiences for promoting social development among persons with ASD.

1. With the development of the teacher training curriculum for providing learning experiences for promoting social development in persons with ASD, the curriculum comprised eight components, namely, rationale, objectives of the curriculum, contents, training activities and methods, training materials, durations, venues, and measurement and evaluation.
2. The documents designed for the teacher training curriculum included a handbook for curriculum implementation, an achievement test for the participants, a satisfaction survey on the training curriculum, and an observation form on provision of learning experiences in the teacher training curriculum.
3. The appropriateness of the teacher training draft curriculum and its documents was evaluated through focus group discussion. The topics of the focus group discussion were classified into sub-topics spanning contents as well as measurement and evaluation in accordance with the draft curriculum. In addition, training activities and approaches were incorporated into learning units and lesson plans. The results showed that the developed curriculum overall attained a high level of appropriateness ( $\bar{x} = 4.38$ , S.D. = 0.16). Similarly, three components of the documents for the teacher training curriculum achieved a high level of appropriateness, namely the handbook for curriculum implementation ( $\bar{x} = 4.31$ , S.D. = 0.16), an achievement test for the teacher training curriculum ( $\bar{x} = 4.29$ , S.D. = 0.16), and a satisfaction survey on the teacher training curriculum ( $\bar{x} = 4.35$ , S.D. = 0.15). In the meantime, obtaining the highest level of appropriateness was an observation form on provision of learning experiences in the teacher training curriculum ( $\bar{x} = 4.50$ , S.D. = 0.12).

### 3.3 Phase 3

The effectiveness of the teacher training curriculum on providing learning experiences for promoting social development among persons with ASD.

1. The pre- and post-training assessment of the teachers for persons with ASD's achievements showed that they obtained relatively higher post-training achievement scores ( $\bar{x} = 22$ ), compared to the pre-training scores ( $\bar{x} = 17.20$ ), indicating an improvement in knowledge and understanding.
2. In relation to the participants' satisfaction, it was uncovered that they overall expressed the highest level of satisfaction ( $\bar{x} = 4.71$ , S.D. = 0.08). In taking into account each aspect, they expressed the highest level of satisfaction with all aspects, including lecturers ( $\bar{x} = 4.85$ , S.D. = 0.23), measurement and evaluation ( $\bar{x} = 4.73$ , S.D. = 0.04), and contents ( $\bar{x} = 4.69$ , S.D. = 0.24).
3. The results also showed that the provision of learning experiences for promoting social development among persons with ASD achieved a mean score of 84.67%.

## 4 DISCUSSION

1. Taking into account a review of documents, literature, and related studies, it was discovered that persons with ASD were viewed as the emerging trend, and there was a significant rise in their number. This is consistent with the data offered by [7], showing that the prevalence of persons with ASD was inclined to increase over the past decade. In Asia, the prevalence rate of those with ASD had dramatically risen from 1.9:10,000 in the pre-1980 period to 14.8:10,000 in 2013. Recent research carried out in the United States of America has demonstrated the prevalence rate for ASD in school-aged children of 1:68, while that of Thailand is up to 9.9:10,000. These persons with ASD are characterized as having disorders in social development, which may vary depending on their individual special needs, clearly deviating from typical children. This corresponds to [9]'s statement that children with ASD typically exhibit social deficits, which encompass avoiding eye contact, displaying indifference to others, experiencing difficulty in establishing interpersonal relationships, being reluctant to adapt to changes in daily life, lacking play skills, and developing irrational fear. Consequently, these typically contribute to their social isolation. In addition, the finding is akin to [10]'s statement that children diagnosed with autism are typically labeled as having education special needs, which differ from those of the typically developing children. This distinction is attributed to their developmental disorders in communication, spanning difficulties with facial expressions, body language and verbal language, together with challenges in social interactions and the display of repetitive behaviors. Evidently, children with ASD are the emerging social trend, indicating a remarkably rising number of these children in society. [11]'s study examined the use of social stories as a practical method for children with ASD. While typically developing children may be able to perceive appropriate behaviors in a range of social contexts by instinct, those with ASD are more prone to confusion with social situations, isolation and indifference to the external world. As a result, social stories serve as a means to recount short narratives about situations, behaviors, or developed social skills, with a focus on specific behaviors; simply put, it contributes to promoting and fostering their social skills. This is in conformity with [12]'s study on technologies for enhancing social and communication skills in children with ASD. Their study found that causal factors pertaining to social skills can be identified through a variety of methods, namely applied behavior analysis, cognitive training, behavioral training, social stories, social skill practices, and video modeling; these approaches could effectively contribute to teaching or instilling social skills into these children. Thus, enabling access to educational services is considered crucial for these school-aged children. It is necessary to provide support and facilitate the development of these school-aged children, with specialized teachers in ASD acting as facilitators. By doing so, it would help enhance their social development, thereby yielding favorable long-term outcomes.
2. The exploration of school directors' needs in self-improvement found that their most crucial need was the frequency of attending training programs on promoting social development among persons with ASD. As described by [13], training can be referred to as personnel development within organizations or institutions intended to engender behavioral changes in respect of knowledge, skills, and attitudes. Such an activity is carried out to enhance work standards, enable career advancement for personnel, and simultaneously contribute to the organizations' accomplishment of defined goals. Meanwhile, the teachers for persons with

ASD's most pressing need was knowledge and understanding of social development among those with ASD. This finding is compliant with [14]'s remark that personnel preparation is considered essential for provision of services; particularly, instruction for children with ASD contributes to learning, adaptability, and independent social integration.

3. The findings on the needs of school directors and teachers for persons with ASD are consistent with Guba and Lincoln [15]. In fact, the needs stem from the disparities between the ideal state and the current state, and they are necessary when they contribute to beneficial or fruitful outcomes. Based on the results of the study, the school directors' highest need in providing learning experiences for those with ASD lay in the contribution of constant social development to their ability to integrate in society, while that of the teachers was implementation of learning activities in accordance with lesson plans. This finding is akin to [16] mentioning that disorders in social development are regarded as a significant disorder among children with ASD, necessitating specialized training. Social development can be enhanced through the use of role-play exercises which simulate different social situations, which would provide them with hands-on practice and in turn enable them to excel in these skills. Alternatively, promoting these skills can be achieved by means of memorizing conversational patterns in different situations, thereby allowing for their direct application in real-life contexts. Apart from that, educational rehabilitation plays a contributory role in enhancing basic social, communication, and thinking skills, which would be beneficial in the long-term period. The contents incorporated into the curriculum place emphasis on preparing children with ASD to draw on their knowledge and social skills in their daily life rather than solely equipping them with academic skills, so the individualized education program (IEP) should be tailored to their individual abilities.
4. The results of the development of the teacher training draft curriculum on providing learning experiences for persons with ASD were drawn on to formulate guidelines for the development of the teacher training curriculum. Specifically, eight components were incorporated into those guidelines, including rationale, objectives of the curriculum, contents, training activities and methods, materials, durations, venues, and measurement and evaluation. This finding is akin to [17]'s eight components of development of the teacher training curriculum, namely rationale, goals, contents, activities, materials, durations, locations, and evaluation.
5. The results of the pre-post training achievement test on their knowledge and understanding demonstrated that the teachers for persons with ASD performed better in the post-training test ( $\bar{x} = 22$ ), in comparison with their performance in the pre-training test ( $\bar{x} = 17.20$ ). This finding conforms to [18]'s study which found that as a result of the implementation of the training curriculum, the teachers were well-equipped with knowledge and abilities to develop the curriculum on management of Isan local wisdom of cultural tourism.
6. Finally, the results showed that providing learning experiences for enhancing persons with ASD's social development attained a mean score of 84.67 percent. This is in line with [19]'s study which found that based on the monitoring and evaluation of knowledge and understanding in the teacher training program where educational plans were implemented with children with ASD after a 90-day training period, those instructed with IEP and IIP passed the evaluation criteria. As mentioned by [20], the monitoring and evaluation of the operation serve as instruments to reflect the primary operational outcomes and the performance

throughout the process. Specifically, monitoring entails collecting the data of the operation of the training program in accordance with the formulated plans, while the evaluation involves assessing the progress or improvements.

## 5 CONCLUSION

1. Based on the synthesis of documents, relevant literature, and prior studies, it was uncovered that persons with ASD are the emerging trend, given their rising prevalence. Enabling their access to educational services is unarguably of utmost importance. Therefore, preparation of the personnel involved is immensely necessary for enhancing social development among those with ASD. With respect to the needs in different aspects, the results demonstrated that the school directors' most vital need in self-improvement lay in the frequency of engagement in training programs on promoting social development in persons with ASD ( $PNI_{Modified} = 0.54$ ), while that of the teachers was knowledge and understanding of social development for those with ASD ( $PNI_{Modified} = 0.21$ ). Furthermore, the school directors' primary need in providing learning experiences for those with ASD was constant social development to enhance persons with ASD's ability to integrate into society ( $PNI_{Modified} = 0.47$ ), whereas that of the teachers concerned the implementation of learning activities based on lesson plans ( $PNI_{Modified} = 0.21$ ).
2. The teacher training draft curriculum encompassed eight elements as follows: rationale, objectives of the curriculum, contents, training activities and methods, training materials, durations, venues, and measurement and evaluation. In addition, the draft documents for the teacher training curriculum consisted of a handbook for curriculum implementation, an achievement test, a satisfaction survey, and an observation form on provision of learning experiences. With respect to the quality of both the teacher training draft curriculum and its documents, it was discovered that the curriculum itself attained a high level of appropriateness ( $\bar{x} = 4.38$ , S.D. = 0.16). In the same manner, all of its documents achieved a high level of appropriateness, including a handbook for curriculum implementation ( $\bar{x} = 4.31$ , S.D. = 0.16), an achievement test ( $\bar{x} = 4.29$ , S.D. = 0.16), a satisfaction survey ( $\bar{x} = 4.35$ , S.D. = 0.15), and an observation form on provision of learning experiences ( $\bar{x} = 4.50$ , S.D. = 0.12).
3. The results of the implementation of the teacher training curriculum indicated that in terms of pre-post training achievements on knowledge and understanding, the teachers for persons with ASD attained higher post-training scores ( $\bar{x} = 22$ ) than the pre-training scores ( $\bar{x} = 17.20$ ). What's more, they expressed the highest level of satisfaction ( $\bar{x} = 4.71$ , S.D. = 0.08). Based on the assessment of providing learning experiences for promoting social development among persons with ASD, its mean score accounted for 84.67%.

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## 7 REFERENCES

- [1] W. R. Baldwin, *Social Justice*. U.K: Pergamon Press, Ltd, 1966.
- [2] D. Iatridis, *Social Policy: Institutional Context of Social Development and Human Services*. California: Brooks/Cole Publishing Company, 1994.
- [3] United Nations. *The International Forum for Social Development: Social Justice in an Open World, the Role of the United Nation*, 2006. <https://www.un.org/esa/socdev/documents/ifsd/SocialJustice.pdf>. [Accessed: April 28, 2019].
- [4] P. Corning, *The Fair Society: A New Model for Social Justice in The 21st Century*. 2015. <https://complexsystems.org/publications/the-fair-society-a-new-model-for-social-justice-in-the-21st-century/>. [Accessed: March 8, 2019].
- [5] T. Cheausuwantavee, *Critical and Integral Disability Studies*. Bangkok: Chulalongkorn University Press, 2019.
- [6] Persons with Disabilities Empowerment Act (2007), Royal Gazette, vol. 124, pp. 1–18, 2007.
- [7] Child Development and Behavioral Society of Thailand. *Development and Child Behavior 4*. Bangkok: Department of Pediatrics, Faculty of Medicine, Chulalongkorn University, 2018.
- [8] A. Koonkaew, *Statistics for Research*. Bangkok: Chulalongkorn University Press, 2017.
- [9] B. Phrathani, *Autism: Teaching Speaking and Multidisciplinary Therapeutic Interventions (1st ed)*. KKU Printing House, 2011.
- [10] P. Arayawinyu, *Teaching Children with Autism Spectrum Disorder*. Wankaew Printing Limited Partnership, 2003.
- [11] S. Ozdemir, “Social stories: An intervention technique for children with autism,” *Procedia – Social and Behavioral Sciences*, vol. 5, pp. 1827–1830, 2010. <https://doi.org/10.1016/j.sbspro.2010.07.372>
- [12] A. Nesterova, R. Aysina, and T. Suslova, *Recent Technologies to Improving Social and Communication Skills in Children with ASD: Systematization of Approaches and Methods*. The North Caucasus Federal University, Russian Federation, 2015. <https://doi.org/10.5539/mas.v9n11p38>
- [13] J. Khayotha, *Development of the Science Teacher Training Curriculum for Creation of Supplementary Courses Focusing on Scientific Process Skills*. Master of Education, 2015.
- [14] S. Warnset, “Instruction for persons with autism spectrum disorder,” in *Autism: Teaching Speaking and Multidisciplinary Therapeutic Interventions*, B. Phrathani, Ed., (1st ed). KKU Printing House, 2011, p. 371.
- [15] S. Wongwanich, *Needs Assessment Research (3rd ed)*. Chulalongkorn University Press, 2015.
- [16] Rajanukul Institute, *Autism Handbook for Parents: Our Children with Autism go to School*. Beyond Publishing Co., Ltd, 2011.
- [17] M. Patphol, *A Training Curriculum Development to Enhance Research-Based Instruction for Teachers*. Curriculum Research and Development Program, Graduate School of Srinakharinwirot University, 2011.
- [18] P. Thongsoon, *The Teacher Development of Cultural Tourism Knowledge Management Program on Local Wisdom of Lower Esan*. Doctor of Philosophy Program, Silpakorn University, 2013.
- [19] P. Tepsumetanon, *Development of a Training Program for Teachers of Autistic Children in Co-Integration Schools, Bangkok Metropolisprimary Educational Service Area Office*. Doctoral dissertation. Ramkhamhaeng University, Human Resource Development, 2014.
- [20] S. Sriun, *Training and Seminar Handbook*. Personnel Division, Office of the President, Khon Kaen University, 2010.

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