Making a Difference in Teacher Education Courses: A Psychological Reconsideration

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Abstract
The interdependency between education and psychology has been valued for a long time and the educational psychology as an interdisciplinary field reconciling these two disciplines has been introduced to the field of teacher education. However, theoretically present in teacher training programs, the practical ways of applying educational psychology has not gained enough attention. The interviews with 21 Iranian EFL teachers and educators reveal that those teachers start their career after doing a teacher education course, do not have enough awareness to deal with learners' cognitive and emotional problems. Therefore, the researchers tried to put psychological theories into practice through assigning some mini-action research during the teacher education courses. To check the effectiveness of the method, two groups (experimental and control) were selected and then their awareness of psychological issues while reflecting on their teaching process were compared after the treatment. The qualitative findings of the study indicate that the method was successful in increasing pre-service teachers' psychological awareness towards language teaching. The method is beneficial for those designing and planning teacher education courses.

Keywords: Educational psychology, psychology, teacher education courses

Introduction

The obvious interconnections between psychology and education as two different disciplines could even date back to the discoveries of Aristotle on "association of ideas facilitating understanding and recall" (Grinder, 1989), yet the early traces of introducing educational psychology into the teacher education programs could be found in the recommendations of The Educational Psychology Division (Division 15) of The American Psychological Association (Anderson, Blumenfeld, Pintrich, Clark, Marx, Peterson 1995, 2010). Educational psychology as an applied branch of psychology is "the scientific study of theories and principles related to human learning" (Martin & Torok-Gerard, 2019, p. 4). Considering the intersection of teacher education programs and educational psychology, the latter can assist the educators to understand their students' developmental stages, the limitation of their capacities, their learning process and also their social relationships (Manichander, 2015).

The long-running debates indicate that one of the main pillars of teaching is being aware of psychological issues related to learning, learners, teaching and their environment (Berliner, 1993). However, outlining the theoretical framework for the educators, theories of educational psychology are not successful to explain the educators what they should do and why they should care (Strenburg, 1996). In other words, after passing the theoretical courses, the pre-service teachers are not able to apply those theories in the real classes and they need to gain some experience to be equipped with some related strategies. This lack of practical perspective/application is one of the reasons why psychology is offered as an additional course in teacher education programs and sometimes even "considered irrelevant to teaching practice" (Poulou, 2006, p. 555).

The teachers are expected to have sufficient knowledge about psychology of learning and learners' psychological state, but teacher education courses rarely provide the pre-service teachers with something much beyond the core concepts of this field (Soleiman Nezhad & Vahedi 2011, 328); this problem was observed during our interviews with 21 Iranian experienced teachers and teacher educators. In fact, lack of essential psychological knowledge at the beginning of the profession is a problem which was addressed by many experienced teachers and teacher educators who were interviewed throughout this study. Analyzing the curriculum of current teacher education programs in Iran, it is revealed that psychology is a theoretical course which does not have any implication in practical courses and practicum programs.

Research Questions

This observation and realization brought up the question of approaching a way to bring the psychological knowledge into practice. In this regard, the following research questions were posed:

Q1. Does conducting mini action research affect pre-service teachers' psychological knowledge?
Q2. How heightened psychological awareness can be seen in reflection forms of pre-service teachers who conduct psychological action research in comparison to those who receive psychological knowledge through theoretical courses?

Review of Literature

While considering changes in teaching profession during the time and new trends in teaching and learning, Seifert and Sutton (2009, pp. 8-16) assert that nowadays for sure "teaching is different from the past" and for a teacher to be effective in this profession, many teacher education programs have offered new ways and approaches; one of them is the effort to connect educational and psychological concepts and ideas to practice teaching. The relationship between these two disciplines has emphasized frequently through literature, but the question is that what psychological aspects are essential to be addressed and practiced in teacher education programs. Kumari, Sundari, and Rao (2006, pp.5-6) show the relationship between psychology and education as following:

Table 1
Relationship Between Psychology and Education, Kumari, Sundari, &Rao (2006, pp.5-6)

Education	Psychology
Modern education is a group phenomenon. Hence some of the group psychological laws can be ..	Psychology also deals with groups.

applied to the process of education viz. group dynamics	
Modern education is defined as for behavior, of behavior and by behavior. Hence psychology laws, processes and findings can be applied to education.	2. Psychology is surely a behavioral science.
Educational goals today are all around psychology development of the individual. Hence psychology aids teachers in affording better educational development of children.	3. Developmental psychology gives required insights into human development in all its aspects.
Modern education caters to the needs, interests and abilities of children. Hence knowledge of psychology of needs and of interests enables teachers to plan educational programs in a desirable manner.	4. Psychology enables understanding of needs, interests, and abilities of children.
Education involves proper organization learning of teaching learning situation. Hence it is a common meeting group of both the subjects.	5. Psychology of learning gives into these areas.
Education aims at the development of personality and character. Hence there are psychological aspects in this area also.	6. Psychology analyses these aspects of development minutely.

Shakir and Sharma (2017, p.21) also believe that educational psychology can be summarized in understanding of three concepts: 1) the individual learners, their development, their needs and wants, potentialities, and their differences; 2) The environment of learning including group dynamics which can boost learning through learners' interactions; 3) the process of learning, its essence and the ways to improve its effectiveness. Shakir and Sherma (2017, pp. 23-26) also states that educational psychology assist teachers in various ways: to know stages of development, to know the learners, to deal with diverse learners, to know about individual differences, to deal with learners' special needs, to deal with classroom problem, to take a suitable method for teaching, to consider hereditary and environment of a learner, to consider mental health, to design and take need based curriculum, to provide learners with guidance and consoling, to assess and to evaluate, to encourage self-discipline, to facilitate learning context, to maximize socialization in the classroom, and finally to help him/her professionally grow. The Coalition for Psychology in Schools and Education (CPSE), a group of psychologists and psychology teachers within APA, in 2015 elaborated on twenty principles as the key psychological principles that must be considered by the teachers in the educational settings. These essential psychological factors can be categorized into four areas: 1) cognition and learning; 2) motivation; 3) emotional dimension; and finally 4) learners and their individual differences. These aspects are also essential to be considered when talking about language learning context. Therefore, in this section, each of these four categories is briefly explored.

Cognition and learning

Cognition and learning can be considered as central concepts in educational psychology. According to Willey and Jee (2011), all the processes related to thinking, conscious and

unconscious issues are under the category of cognition which includes the processes of manipulating information "either retrieved from memory or constructed from sensory information" (p.3) and the study of all these processes as Balota, Marsh, and Marsh (2004) state, is called *cognitive psychology*.

One of the major contributions of information processing, as Miller and Reynolds (2003) believe, is analyzing cognitive tasks and describing the processes that a person must carry on to complete a task. The process can be broken into five stages (Mayer, 1987): 1) Encoding, 2) Inferring, 3) Mapping, 4) Applying, and 5) Responding. Cognitive task analysis has useful applications because it suggests specific cognitive processes that students need to learn. Also, it helps in evaluating students' learning outcome.

Another item that can be discussed under the heading of "cognition and learning" is learning disabilities. Learning disability is defined in many ways by the educators and experts in medical field. However it is defined in the handbook of *Psychology and Mental Health* edited by Rodriguez and Irons-Georges (2001) as failure to get academic skills while the learner has normal level of intelligence, maturation, cultural and emotional opportunity (p.393, v. 2) in other word, a discrepancy between learner's ability and his or her performance . The possible signs of learning disabilities are listed in this book as followings:

- Difficulty understanding and following instructions
- Trouble remembering what someone just told him or her
- Failing to master reading, writing, and/or math skills, and thus failing schoolwork
- Difficulty distinguishing right from left, for example confusing 25 with 52, "b" with "d" or "on" with "no".
- Lacking coordination in walking, sport, or small activities such as holding a pencil or trying a shoelace
- Easily losing or misplacing homework, schoolbooks, or other items
- Not understanding the concept of time; confused by "yesterday", "today", and "tomorrow" (p. 394, v. 2).

Most of the above mentioned disabilities can affect language learning. Some of the proposed causes of learning disabilities explained in this book are: neurological deficits, genetics, exposure to toxin during fetal gestation or early childhood; but none of these factors are accepted universally (p.395, v. 2). Different treatments also were suggested for learners with these disabilities. Perceptual training, multisensory teaching, modality matching, and direct instruction are some of them (p.398, v.2).

Motivation

The most understandable meaning for motivation, according to Cook (2008), is "the interest that something generates in the students" (p.136). As Dörnyei (2014) states, it is a term familiar for and used by both learners and teachers when talking about success and failure in learning a language, but even this familiar term, which is used frequently, covers a wide spectrum. However, everyone agrees that motivation is a factor responsible for why, how long, and how hard someone learns a language (Dörnyei, cited in Celce-Murcia, Briston, and Snow, 2014, pp. 518-519). Therefore, it has been studied and explored by many scholars in the field of SLA since 1950s: Gardner and Lambert (1972), Gardner (1985), Deci and Ryan (1985), Dörnyei (1990), Dörnyei (2005), Gardner (2007), Ushioda (2009), Dörnyei and Ushioda (2011), Ushioda (2013), etc. Ushioda (2013, p.5) views motivation as an "integral part of the evolving organic and adaptive system of cognitive, affective, and contextual processes shaping language learning."

There are many theories for motivation and learning. Dörnyei (2005) has a taxonomy for these theories which is summarized by Orio (2013) in a table (table 2).

Table 2
Main Theories of Motivation and Contributions to Motivational Research, by Orio, S. F. (2013, p. 23)

Period	Author(s)	Theory	Contribution to L2 motivation research
Socio-psychological period	Gardner and Lambert (1959)	Socio-educational model of SLA	Socio-educational model of SLA Integrative motivation AMTB
	Clement (1977)	Linguistic self-confidence	Linguistic self-confidence as a motivational factor
Cognitive-situated period	Deci and Ryan (1985) Noels et al. (2003)	Self-determination Theory	Extrinsic/intrinsic motivation Travel, knowledge, friendship and instrumental orientations The language learning orientations scale
	Weiner (1992)	Attribution Theory	Success and failure attributions influence motivation
	Different authors Dörnyei (2002), Julkunen (1989)	Task motivation	Tasks=units of learning Different tasks= different motivation
Process-oriented period	Dörnyei & Otto (1998)	Process model of L2 motivation	Motivation: dynamic factor Motivation as a process
	Dörnyei (2005)	L2 motivational self-system	L2 self Ought-to self L2 learning experience

The last theory in this taxonomy which was proposed by Dörnyei (2005) is called "L2 Motivational Self System", this approach, which draws on students' perspective about themselves in future (Brown and Lee, 2015, p. 93), consists of three components: 1) Ideal L2 self, 2) Ought-to L2 self, and 3) L2 learning experience (Dörnyei, cited in Celce-Murcia, et al. 2014, p. 521).

The assumption underlying this approach, as mentioned in Browns and Lee (2015) is that if the learners feel that learning and speaking the foreign language is necessary for their ideal and ought-to self, then they will be greatly motivated to learn that language. Because of the importance motivation in second language learning, Dörnyei (2014) emphasizes that undoubtedly, motivational skills must be practiced and developed in teacher training and teacher educated courses.

Emotion

As Agudo and Azzaro (2018) believe, considering the literature, most of the psychological-educational studies have focused on cognitive aspects of learning and emotional aspects have received less attention although emotional aspects pay a vital role in learning (p.1). Swain (2013, p. 195) also claims that learning does not just deal with cognition, but also with emotion. But unfortunately, as he believes although everyone is aware of the importance of emotion and how it can influence learning, it has received less attention in second language learning and teaching field. Looking historically at the role of emotion in language teaching theories (pp.196-198), he concludes that Krashen (1985) who proposed input hypothesis theory was the first one emphasized the role of affective factors in language acquisition. Ni (2012, p. 1059) believes that, "attention to affective aspects can contribute to the whole-person development, which is beyond language teaching and even beyond what has traditionally been considered the academic realm". He claims that, affective factors do play a significant role in both foreign language learning and teaching.

Learners and their Individual Differences

Individual differences in students are personal differences specific to each one due to some variables such as, physical characteristics, intelligence, perceptions, gender, learning style, aptitude, and personality traits (Kubat, 2018, p.30). Individual difference among learners and its role in learning has been discussed a lot by many scholars especially in SLA field (Robinson, 2002; Dörnyei, 2005; Brown, 2007; and Ellis, 2008; Skehan, 2014). Ellis offers a categorization of the factors influencing individual differences including four main categories (p. 645): a) abilities: intelligence, working memory, and language aptitude; b) propensities: learning style, motivation, anxiety, personality, and willingness to communicate; c) learner cognitions about L2 learning: learner beliefs; and finally, d) learner actions: learning strategies. Ellis then discusses each of these factors and explains the related researches and studies in details (pp. 645-722). He clearly highlights the importance of being aware of individual differences especially those that greatly influence L2 acquisition. Brown also asserts that the awareness of these factors helps teachers to get the individual differences among their learners and know that not all learners are alike. This can help them to make appropriate judgments about individual learners, "meeting them where they are and providing them with the best possible opportunities for learning" (p. 147).

Methods

Participants

Thirty-six students-teachers who were studying at Farhangian University in Tehran were the participants of the study. All of them were female aged between 19 and 25, and they had already passed four semesters at university including some general English courses and a few courses in teaching. These student-teachers, who were later divided into two groups randomly

were from different cities of Iran and entered the university through the national entrance examination. The characteristics of the participants of this phase are summarized in table 3.

Table 3
The Characteristics of the Participants

University	Group	Number of Participants	Gender	Age
Farhangian	E	17	F	19-25
Farhangian	C	19	F	20-23

Procedure

Pre-service teachers in both groups were supposed to do a four-semester practicum course including observation, writing reports, and teaching practice. While student-teachers in both groups did a theoretical course in educational psychology, the ones in experimental group were assigned to do two to three mini-research tasks in which they had to find a case in the school with one of the following problems, under the class teacher's supervision:

I . A person who seems to have learning disorder or lack of concentration
II. A person who is shy or introvert and cannot talk easily with others
III. A person with high level of stress in the class or at the exam sessions
IV. A very intelligent student who always finishes tasks soon and starts distracting others or getting bored
V. An indifferent student with no motivation

Then, they were asked to study at least two text (articles or books) to know more about the nature of the problem, to find a remedy for that case, to test the remedy, and then to share the results with their classmates in one of the University sessions.

All the student-teachers in both groups had five teaching practice sessions. For each session, they were asked to write a report and fill a reflection form in which they self-evaluated their teaching performance, and thought about the reasons of their success or failure. The reflection forms related to the last teaching practice of all pre-service teachers were analyzed qualitatively using a coding system to investigate if the mini-research practice made the student-teachers in experimental group more sensitive about the psychological aspects of teaching.

Design

The study was a qualitative study in nature. The data collected in the study was analyzed with qualitative methods. But since the purpose of the study was to compare two groups and investigate the effect of a technique (an independent variable), the method used to conduct the research was static group comparison in which two intact groups participate in the study and only one receive the treatment and their final performance is compared using a post-test (Ary, Jacobs, & Sorensen, 2010, pp. 304-305).

Results

Investigating the effectiveness of mini-research psychology-based tasks, the reflection forms of all participants in both groups, were textually analyzed. To do so, a coding system including open, axial, and selective codes was applied. As a sample, a coded reflection form from each group, is chosen and presented below (*cf.* Table 4 & Table 5):

Table 4
Analyzing a Sample Document in Control Group (Coding System)

Open Codes	Axial Codes	Selective Code
I review the previous lesson to teach present continuous I asked the students to look at the flashcards and guess what the lesson is about I think I could start from more familiar concepts	Cognition and learning	Educational Psychology
Teacher should try to be patient Teacher should pay attention to students' emotions and expectations As a teacher I should know how to behave with teenagers Shy students didn't participate and I didn't know how to encourage them to be involved in the tasks	Affective issues	
One of my main goals is to motivate learners for learning English The students are usually demotivated when they do not perform well in the exam, the teacher should be aware of this fact	Motivation	

Table 5
Analyzing a Sample Document in Experimental Group (Coding System)

Open Codes	Axial Codes	Selective Code
I help the students to find solutions for problems by giving them clues I ask myself if I was successful to make a link between students' previous knowledge and the new topic To start the topic first I ask the students about the numbers (their previous knowledge) I ask the students to guess I try to have creativity and increase learners' creativity I always try to design and plan meaningful learning activities	Cognition and learning	Educational Psychology
I believe that giving positive feedback and appreciating students increase their motivation Using different AVA, I can increase learners' motivation Learners' participation in discussion and classroom activities indicates their motivation Using technology (especially devices like smart boards) can	Motivation	

increase learners' motivation	
I try to make the class atmosphere more supportive I try to find different effective ways of appreciation When students give correct answers, I confirm their answers using the words such as "yes", "that's right", … In the classroom activity, the teacher should have a supportive role	Expectation and support
I try to have self-confidence I shouldn't have stress while teaching Emotional interaction between teacher and the students is a very important factor While I was asking questions, one of the students got stress, I smiled to reduce her stress Teacher's emotional skills are very important I pay attention to learners' interactions Letting students to prepare for the speaking in the groups increases their self-confidence Some students were nervous or shy when they were asked to answer, therefore there were less active in the classroom I tried to increase students' self-confidence with giving them positive feedback e.g. "well-done", "excellent", "very good", "yes", "correct",…	Affective Issues
Using different types of AVA is also beneficial for all learners with different learning styles Asking learners to stand up and act is beneficial for both kinesthetic and visual learners I had to allocate more time for doing exercises because not all the learners are able to do with the same pace I paid more attention to those who were more talkative and forgot that those who are volunteer less frequently may learn as much as the others	Individual Differences

Even having a quick glance, more open and even more axial codes can be seen in the experimental group participants' reflective forms. Looking more carefully, this information can be extracted:

●The number of psychology-related open codes found in the control group participants' reflection forms was obviously less than the number of the same codes in the other group participants' reflection forms (the number of psychological items in reflection forms of pre-service teachers in control group was 8 to 11 while in experimental group was 18 to 25).

●In control group, maximum four psychology-related axial codes were found, while in experimental group, the researchers could extract more axial codes, in two cases even six axial

codes, and in the example here, five (cognition and learning, motivation, expectation and support, affective issues, and individual differences).

●Only 4 out of 19 student-teachers (21.05%) in control group mentioned some points related to individual differences. Among them, just one had three open codes in this category and the rest had just one.

●The student-teachers in experimental group were more concerned about learners' motivation and also what factors can de-motivate them. In control group, this category was less highlighted. Almost all participants (16 out of 17 participants in this group; equal to 94.11%) in experimental group mentioned something related to motivation three times or more in their reflection forms; on the other hand, just 9 out of 19 participants in control group (47.36%) mentioned motivation-related issues, and none of them mentioned it more than three times.

●None of the participants in the first group paid attention to "expectation" while reflecting on the lesson failure. However, 6 out of 17 experimental group's subjects (35.29%) have thought about their expectation while evaluating their success or failure.

●It seems that affective issues such as students' comfort, security, joy, emotion, stress, and confidence were more emphasized in experimental group while reflecting on teaching performance.

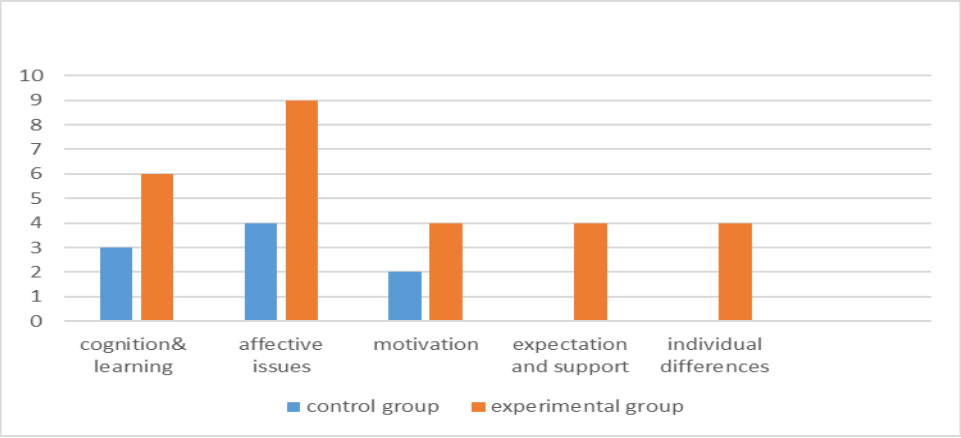
●Although supporting techniques were used by all these teachers, not many pre-service teachers in control group considered them during self-evaluation. Only 2 out of 19 (10.52%) paid attention to this factor.

●The category of learning and cognition is the one in which there is no big difference between the reflection information extracted from these two groups. However, still experimental group participants outperformed the control group ones. The average number of open codes under this category in experimental group is 8, while in control group is 5.

Therefore, as this evidence shows in this study the mini-research tasks were successful to increase pre-service teachers' awareness about psychological aspects of education. The following diagram compares the frequency of the axial codes found in the portfolios of these two sample pre-service teachers as the representatives of these two groups.

Figure 1

Comparison of two sample student-teachers



Discussion

The qualitative investigation of the existing portfolios after the treatments, as shown in fig. 1 indicates that those pre-service teachers who were in experimental group and were engaged in some projects and mini-action research during the practicum course, reflect not only on pedagogical aspects and techniques of their teaching experiences, but also on psychological aspects such as, cognitive and learning, affective issues, motivation, expectations, supports, and individual differences. The qualitative analysis of the data regarding the participants of control group, though suggests that the reflection was mostly limited to teaching techniques such as correction techniques, presentation techniques, using audio-visual aids, practicing. In fact, except a few psychology-related points mentioned, the reflection was mostly limited to teaching techniques. Some of these student-teachers mentioned some psychological aspects while reflecting on their teaching performance, but these implicit reference to psychological issues were lacking depth and solidity compared to ones mentioned by experimental group. Thus, the answer to the first research question, "Does conducting mini action research affect pre-service teachers' psychological knowledge?", is "yes", at least in our case. In fact, it can be claimed that using psychology-based mini-projects during the practicum courses can significantly increase pre-service teachers' awareness on psychological issues and can give them the opportunity to reflect on their teaching practice from new perspectives. In fact, assigning these psychological projects is evidently a successful attempt to link theory and practice, and it is an opportunity to see the theoretical concepts in real classes. This is in line with the findings of Seifert and Sutton (2009, p. 16) who believe that some more recent teacher education courses in which more time for practicing teaching is offered, and their instructors try to make a link between concepts of education and psychology are more effective and can help teachers become more successful in this profession. Another study that confirms the current study's findings was done by Smith and DeFrates-Densch (2016). This study describes a new approach to teaching educational psychology in teacher training courses. As it is explained, student-teachers must be provided by plenty of opportunities related to authentic teaching activities; in this way, they can find their own tactics and identify their beliefs about the learning and teaching process.

To answer the second research question "How heightened psychological awareness can be seen in reflection forms of pre-service teachers who conducted psychological action research in comparison to those who received psychological knowledge through theoretical courses?" the codes extracted from coding process were analyzed meticulously. This analysis reveals that more attention was given to psychological concepts by experimental group's participants while reflecting on teaching performance (which is to say, more open and axial codes were extracted from their reflection forms). However, in the reflection forms provided by control group participant, less open and axical codes were extracted which except a few cases, others referred mostly to pedagogical points. In fact, it seems that the experimental group pre-service teachers' understanding of individual learners, their potentials and differences, learning context, and process of learning, as the main pillar of educational psychology (Shakir and Sharma, 2017), has improved during this experiment. Therefore, in the light of our findings, emphasizing on psychological concepts of education in a practical course like practicum could be fruitful, especially when it is applied in teacher training course.

Conclusion

This qualitative study, adopting an interdisciplinary approach, aimed to put the theories of educational psychology into practice in the field of teacher education. This was done to see whether the emphasis on laying the ground for practicing educational psychology can increase

pre-service teachers' awareness of emotional and cognitive issues underlying teaching and learning. For this purpose, after giving treatments to experimental group (*cf. Method*), through a content analysis, the reflection forms belonged to pre-service teachers in experimental and control groups were analyzed and coded. As the results indicate, the 4-semester experiment could positively affect the psychological awareness of participants in experimental group, meaning that applying mini-action research approach during practicum courses could broaden the pre-service teachers' perspectives and assist them to reflect not only on pedagogical and technical aspects of their classes, but also on psychological issues in teaching process which need to be taken into consideration. The method used in this study, linking the theoretical findings of psychological education and teacher training practices, was found helpful for teachers with less experience to prepare themselves to start their career and finding a psychological standpoint into the profession. Furthermore, the findings of the present study contribute to the design of any practical courses in teacher education. However, duplication of this research to confirm these findings is recommended.

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