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## Study of Learning Resistance Among Pupil Teachers

Santosh Pal<sup>1</sup>  
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### Abstract

This study explores the effect of gender and grade level on learning resistance among D.El.Ed. students. The sample comprised of 92 students of D.El.Ed. course from two colleges of Lucknow. Learning resistance was assessed with the help of Learning Resistance Inventory (LRI) of K. S. Misra. 2x2 ANOVA was used to analyze the data. The findings revealed that male students exhibit more learning resistance than female students, students of D.El.Ed. I and III semesters do not differ from one another on learning resistance, and the effect of interaction between gender and semester is not significant. Remedial measures for reducing learning resistance have been suggested.

**Keywords:** Learning resistance, pupil teachers.

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## **Introduction**

Education is an attempt by the generation of society to transfer its knowledge to the lower generation of its own. In this thought, education works as an institution. This institution focuses on the excellence of skills. For this innovation and technology are being used to simplify learning and to maximize learning and its experiences. But not all practices get their goals because there exist some obstacles that do not allow learning to reach the learner. Resistance is such an obstacle, offered by one person to the orders, suggestions, or actions of another. In education, the resistance is directed against active participation in learning. Resistance to learning has a twofold meaning. The immediate psychological understanding of the thought refers to the situation in which one or many individuals directly or indirectly refuse any engagement in a learning possibility. There exist sociological and political perspective, in which learning resistance is considered as a part of the general opposition to social learning conditions by laden populations. Resistance to learning appears at every educational level. It prevents students themselves from correctly organizing their learning activity and refers to one who fails to apply him-self to the learning tasks of the school. It is convenient to assume that the origins of student resistance lie in classroom active-learning strategies themselves (Prince and Felder, 2007). For the contemporary education system learning resistance is a challenge. Although it is intangible and invisible, but is responsible for many incidents in the class and as educationist, we first need to recognize that how resistance and learning may be inextricably linked? In India, when questions are being raised on the efficiency of the teachers' teaching in the primary schools, this issue becomes more important especially when this problem is being seen in future teachers. The bulk of those who do qualify to be teachers, observed the Justice Verma Commission – a Supreme Court-appointed panel that studied the state of teacher education – in its 2012 report, are trained through sub-standard “teaching shops” (private institutes) that fail to address the pedagogic needs of diverse classrooms. The present study attempts to find out the effect of gender and grade level on learning resistance among D.El.Ed. students.

## **Objectives**

Following objectives have been formulated for the study:

1. To study the effect of gender on learning resistance.
2. To study the effect of grade level on learning resistance.
3. To study the effect of interaction between gender and grade level on learning resistance.

## **Hypotheses**

To achieve the objectives following hypotheses have been formulated and tested:

**H<sub>01</sub>:** There exists no significant difference in learning resistance of male and female students.

**H<sub>02</sub>:** There exists no significant difference in learning resistance of D.EL.ED. I and III semester students.

**H<sub>03</sub>:** The effect of interaction between gender and grade level on learning resistance is not significant.

## **Methodology**

The sample of this study consists of 92 (46 males and 46 females) student-teachers of D.El.Ed. course from two colleges of Lucknow. Learning resistance was measured with the help of ‘Learning Resistance Inventory’ (LRI) developed by K. S. Misra. 2x2 ANOVA was used to analyze the data.

**Results and Discussion**

**Table 1**

Tests of Between-Subjects Effects Dependent Variable: LR Total

Source	Sum of Squares	Df	Mean Square	F
Gender	4097.783	1	4097.783	5.382*
Grade Level	1586.130	1	1586.130	2.083
Gender*Grade Level	.043	1	.043	.000
Error	66997.478	88	761.335	
Total	2942926.000	92		

\*Significant at .05 level

**Table 2**

Mean and standard deviations for male and female D.El.Ed. students

Class	Gender	Mean	Std. Deviation	N
Total	Male	180.78	27.944	46
	Female	172.48	28.268	46
	Total	176.63	28.261	92

Two way ANOVA was used to find out the effect of gender on learning resistance among D.El.Ed. students. A look at table 1 shows that the value of F ratio is 5.382. It is significant at 0.05 level. So, the null hypothesis that ‘there exists no significant difference in learning resistance of male and female students.’ can be rejected. It means that male students differ from female students on learning resistance. Table 2 shows that mean and SD for male D.El.Ed. students on learning resistance are 180.78 & 27.944. Mean and SD for female D.El.Ed. students on learning resistance are 172.48 & 28.268. Mean for male D.El.Ed. students is greater than that for female D.El.Ed. students. It can be inferred that male D.El.Ed. students exhibit more learning resistance than female D.El.Ed. students. It means female students possess less learning resistance than the male students. Interestingly, the gender differences in learning emerge after puberty, whereas no gender differences are observed before or during puberty. There do appear to be gender differences in brain development and competency on specific cognitive tasks. Males have larger brains, but females’ brains mature faster. Male students get frustrated and angry when they can’t understand the content, which distract them from learning. This difference in maturation process is responsible for the slight difference in learning resistance.

**Table 3**

Mean and standard deviations of D.El.Ed. students of I and III semester

Class	Gender	Mean	Std. Deviation	N
D.El.Ed. I	Total	169.96	24.400	46
D.El.Ed. III	Total	183.30	30.475	46

It was hypothesized that ‘there exists no significant difference in learning resistance of D.El.Ed. I and III semester students.’ Two way ANOVA was used to test the hypothesis. Table 3 shows that means & standard deviations for D.El.Ed. I and III semester students on learning resistance are 169.96 & 24.400 and 183.30 & 30.475 respectively. Table 1 shows that the value of F ratio is 2.083. It is not significant at 0.05 level. So, the null hypothesis can be accepted. It means students of D.El.Ed. I and III semester have equal learning resistance, which indicates that grade level doesn’t influence the learning resistance. This may be due to the reason that the entire curriculum of D.El.Ed. is a scaled-down version of the B.Ed. and slightly higher version of graduation, which suffers from lack of contextual relevance. In addition to that, it is being carried by the unqualified and low merit teachers, who are not explicit with students about the reasoning behind their pedagogical choices. The described factors including disjunction

between learning and teaching styles result in the form of learning resistance among the students. Learning resistance started in the first semester, after achieving its peak, becomes stagnant by holding the form of a plateau. This plateau remains even in the third semester and probably that is why students of first and third semester often resist efforts that seek to make them learn and they show same learning resistance.

**Table 4**

Mean and standard deviations for male and female students of  
D.El.Ed. I and III semester

Class	Gender	Mean	Std. Deviation	N
D.El.Ed. I	Male	174.13	27.277	23
	Female	165.78	20.913	23
D.El.Ed. III	Male	187.43	27.579	23
	Female	179.17	33.216	23

It was hypothesized that ‘the effect of interaction between gender and grade level on learning resistance is not significant.’ The data were analyzed using a two-way analysis of variance (ANOVA). Table 4 shows that mean and standard deviation for the learning resistance among D.El.Ed. I semester male students are 174.13 and 27.277 respectively. Mean and standard deviation for the learning resistance among D.El.Ed. I semester female students are 165.78 and 20.913. Mean and standard deviation for the learning resistance among D.El.Ed. III semester male students are 187.43 and 27.579. Mean and standard deviation for the learning resistance among D.El.Ed. III semester female students are 179.17 and 33.216. Table 1 shows that F ratio is 0.000, which is not significant at 0.05 level. So, the null hypothesis is accepted. It means that effect of interaction between gender and grade level on learning resistance is not significant. Thus it can be inferred that the effect of gender on learning resistance among D.El.Ed. I and III semester students is the same.

#### **Educational implication**

This study, being of an exploratory and interpretive nature, raises a number of opportunities for future research, both in terms of theory development and concept validation. This study offers the opportunity to refine and validate the concept of learning resistance and constructs that emerged from our inductive analysis. More researches are necessary to refine and further elaborate these findings. The study can also be extended in longitudinal and comparative ways with different grade level and course programmes respectively. This study can be reiterated on government D.El.Ed. colleges.

#### **Conclusion**

Research indicates that resistance to learning appears at higher educational level. Students resist learning when they don't see how or what an activity contributes to their efforts to learn. If it looks like busywork or a waste of time, students resist. In absence of motivation or due to lack of maturity and poor teaching learner start refusing the learning on very short intervals. It is a silent boycott of learning being provided in class. Therefore, it can not be left at all. It should be taken seriously. Otherwise, this emerging tendency among future educators will put a question mark on their future role. On the basis of the results of the statistical analysis and hypotheses testing discussed in the earlier sections, the following tentative conclusions may be drawn in the present study:

1. Male D.EL.ED. students exhibit more learning resistance than female D.El.Ed. students.
2. Students of D.El.Ed. I and III semester have equal learning resistance, which means grade level doesn't influence the learning resistance.

3. Gender and grade level do not interact for learning resistance significantly i.e. the pattern of difference in the learning resistance of male and female students in terms of D.El.Ed. students of I and III semester are same.

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## The Evolution of French for Specific Purpose (Français sur objectif spécifique FOS) and the Diversity of FOS Learners

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Mun Wui Wong<sup>2</sup>  
Yiru Xu<sup>3</sup>

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### Abstract

The diachronic research in the teachings of the French for Specific Purpose (FOS) remains little exploited. Yet it offers an angle of reflection which revealed extremely rich perspectives, it was not only related to the evolution of the FOS with the conjunctures of the global political and economic situation, but it also reflected the evolution of teaching mode transforming gradually from 'teacher-centred' to 'learner-centred'. The parameters used to categorise various French learners were examined and some difficulties in defining these learners were drawn out in the analysis. This research was searching a way to answer the question on how learning FOS evolved and it aimed to define useful pedagogical elements to guide the teaching of FOS.

**Keywords:** French for Specific Purpose, evolution, diversity of FOS learners, French teaching, French learning

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## Introduction

The teaching of French to the ‘specific’ learners, a term used by Lehmann, had always concerned with these learners such as non-French soldiers, professionals, scientists, fellows, students and researchers (Lehmann, 1993). The issue of evolution is an old question. The denominations of French teaching were recognised constantly for examples: Military French, French in Special Usage, Scientific and Technical French, Instrumental French, Functional French, French for Specific Purpose, Professional French, French for Professional Purposes, French as a Professional Language, French for Academic Purpose. These specific learners had already existed in the context. Most of the terms involved did not appear without a reason, especially concerning with the specific learners who have ‘specific’ needs. Their appearance largely depended on the past circumstances at the time when the educators or teachers put forward certain teaching proposals to meet the needs of the specific learners. To understand the existence of the terms in this field, especially from an evolutionary point of view, by considering both denominations and methodological principles, we are going to review the history involved. We will therefore present an overview of the history and evolution of the teaching of French to the ‘specific’ learners in France and study the most recent French for Specific Purpose FOS. In addition, we will also have a closer look at the diversity of the FOS learners in terms of its needs, motivations, difficulties in FOS and the typology of teaching and learning of FOS. This study hopefully will serve as the foundation for the research of French teachings and French learning related issues. Moreover it will also allow us to define pedagogical elements that are useful in the preparation of a curriculum for students in French as a Foreign Language (FLE).

## Brief history of FOS

The teaching of the FLE had experienced different stages of change throughout its history. These changes had a replicating effect to social, political, economic or other contexts which responded to crises, specific needs, economic or institutional interests in a given context and at a given time. These different stages of the evolution of pedagogy in FLE eventually gave birth to an appellation for French for Specific Purpose (FOS) where it also went through several developments throughout history, according to its denominations.

We will therefore display a historical overview of FOS based on the table developed by Carras, Tolas, Kohler and Szilagyi (2007) in Table 1. We will also lay out some comments mentioned by the pedagogic designers on the evolution of these denominations.

**Table 1:** Synthesis of evolution of FOS nominations according to Carras, Tolas, Kohler and Szilagyi (2007, p.17-18)

Period	Denomination	Learners	Methodological guidelines
1920s	Military French	Non-French soldiers	Direct method: - prohibit the use of a language other than French during apprenticeship - allow the use of gestures and mimics instead of translation
1960s	French in Special Use	Professional learners (Non-academic)	Focus on French in special domain Fundamental level, focus on the lexicon
1970s	Scientific and Technical French	Scientists	SGAV (la méthodologie Structuro-Globale Audio-Visuelle) Teaching model consists of 3 levels: N1: basic usage of French N2: scientific common core of VGOS N3: refinement in a given discipline, lexical storage (VGOM, VIEA, etc.)

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Period	Denomination	Learners	Methodological guidelines
	Functional French	Interns of French government	Functional and communicative approach Rejection of a long 3-step curriculum and determination of the content by lexical counting Threshold level : Taking the diversity of the learners and their needs into account Fixation of contents based on the objectives Identification of communication situations and speech acts
	Instrumental French (Latin America)	Students Researchers	French language acts as an access to the written scientific and technical documentations
1980s	Functional French	Professionals Students Researchers	Emergence of Pragmatic Linguistics. Communicative approach (Fixation of contents based on communication situations) Focus on the learners Emphasis on the use of authentic documents
Since 1990s	French for Specific Purpose	Professionals Students Researchers	Communicative approach Focus on the learners Reinforcement of linguistics Discourse analysis Task-based pedagogy (pedagogy of the task or project) Assessment of communicative competence
	Specialised French		French in a particular professional practice
	Professional French / Language of Professionals		

Table 1 summarized the history of the FOS which consisted of two main parts: the evolution of the FOS nomination from 1920s to 1980s and the evolution of FOS nomination from the 1990s to the present. In order to unfold the process of how FOS evolved, the investigations were made into two parts, firstly we analysed the changes involving FOS nomination from 1920 to 1989, then the development of FOS from 1990 up to the present.

### Changes in FOS nomination from the 1920s to the 1980s

#### Military French

The origin of the pedagogy of FOS dated back to the 1920s under the name of Military French where the first textbook of a specialized French appeared. The textbook was entitled *Provisional Regulation of 7 July for the teaching of French to the Native Armed Forces*<sup>1</sup>.

The textbook was intended for non-French-speaking soldiers doing service in the French army. After First World War, France had decided to train its colonial soldiers, especially those in Africa. It was effective at the military. Its motive was to improve language skills among non-French soldiers. There were two pedagogic objectives in this context: firstly, to facilitate the communication between the non-French soldiers and their French superiors; secondly, to allow these military intelligences with better language skills to contribute their services to the development of their country after their return. They taught Military French, the classes were arranged to be homogeneous in the learners' level and it was limited to 20 learners per class.

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The textbook focused primarily on the daily life in the skirmisher's barracks and it included words and phrases that were essential to native instructors. The learning content consisted of writing, reading, calculation and metric system, diets, etc. The instructors used a direct method in teaching: the trainer did not use local native language to teach, but he or she used gestures and mimics to deliver the teachings. At the beginning of each session, an interpreter had to explain the meaning of the gestures and facial expressions used by the instructors.

#### French in Special Use or Specialised Language

This appellation was popular during the period of 1963 to 1973. This denomination came up as the first attempt to respond coherently to the emergence of the diverse and massive French learners (Lehmann, 1993, p. 89). This teaching approach had generated the practice of the first structural-global audio-visual SGAV (la méthodologie Structuro-Globale Audio-Visuelle) method. It was based on the structural linguistics (basic French) and behaviourism theories adapted for specific learners (mainly stress on oral communication). It had level 1, level 2 improvement progression and conforming to a progression of FF1 and FF2. Specialised lexicons and the selected syntaxes were emphasised in the classroom teaching (Lehmann, 1993, p. 41). This evolution was widely recognised (Lehmann, 1993; Cuq and Gruca, 2002, p. 321-328) and it was part of the cognition of any student who trained in the FLE pedagogy which was distinguished from FOS. The French in Special Use had long been associating firstly with the development of academic language, then with specialised common core, and finally with specialised language.

#### Scientific and Technical French

Lehmann's Scientific and Technical French did not refer to any particular methodology but followed the traditional methodology instead (Lehmann, 1993, p. 41). Holtzer (2004, p. 15) recalled that in the late 1950s, in the context of defending France's economic interests and its geographical influence, especially in developing countries, such as the former French colonies, the political decision had decided to involve the teaching of French scientific and technical in the scientific fields. However, this political decision had been made without any linguistic involvement. It was not until 1960s that the policy makers finally realised the significance of this problem. Therefore more and more current French elements were added into the textbooks to deliver the specialised techniques.

#### Instrumental French

This nomination appeared at the beginning of 1970s. It was taught especially in South America. This approach rejected audio-visual (AV) methods which aimed at enabling foreign adults to learn French as quickly as possible in order to have an understanding of French texts specialised in a certain field. Instrumental French was taught neither from a cultural aspect nor a usual aspect, it simply emphasized the scientific and technical communication in the university environment (focus mainly on the understanding of the French text). The French language was taught as means to access scientific and technological information (Lehmann, 1993, p.41, p. 79).

#### Functional French

Functional French was launched by the Ministry of Foreign Affairs in the mid-seventies during economic crisis. French government planned to promote the Functional French among university elites and fellows in the non-French speaking countries. Actually, there was a difference between the 'fonction' in French and 'function'. The term 'function' was related to 'speech act' in English. However the expression could perhaps, under the influence of English, refer to the communicative approach which was emerging at that time. Functional French emerged because of the awareness of the limitations of AV methods. This approach was based on a proper pedagogy and methodology which was intended to solve the language learning problem.

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The educators or teachers who practice the approach of Functional French rejected the long heavy curricula and they were against the use of universalistic methods. Lehmann rejected a linear and rigid progression of the learning model (Lehmann, 1993, p. 41, p. 68-73, p. 97-98). Functional French emphasized the functional use of the language and the acquisition of linguistic competences was essential in the learning and teaching process.

It must be noted, however, on the other hand, that the teaching of FLE has been stimulated by Functional French, if we consider taking the diversity of the learners into account, including their needs and their objectives. This functional teaching method had made a favourable environment for the implementation of new techniques in the evaluation and testing. It also opened up the use of new tools in linguistic description and broke down the dominance of the 'methods' in traditional teaching.

Since 1980s, Functional French's education had gained importance in the teaching of French for specific learners. In another words, functional teachings had become a practical application in teaching French to professional or academic learners. This approach aimed to let the learners to acquire the required knowledge, skills and behaviours as quickly as possible in order to let the learners to be able to cope up with the situations in which they will encounter in certain occasions. The learners do not learn by analysing the grammar of a language but rather learning according to their needs and individual characteristics. The functional approach identified the needs and translated them into objectives, content, actions and programs (Richeterich, 1985).

Lehmann and Porquier (1981) also emphasized two other aspects, namely 'analysis of speech acts' and 'analysis of authentic discourse', including 'taking needs of learners into account' and 'prediction of communication situations'.

There were some criticisms concerning Functional French methodology for following a linear process opposed to the circular model of Lehmann and Porquier (1981). Despite of the criticisms, Functional French approach had made progress in making the needs of learners a priority. This had greatly encouraged the initiatives of the learners at the pedagogical level in the FOS approach as we have just explained earlier.

### **The evolution of FOS nomination from the 1990s to the present**

#### French for Specific Purpose (FOS)

This appellation borrowed exactly from the nomination of English for Special Purpose or English for Specific Purposes ESP. It appeared in 1980s. It succeeded the concept of Functional French approach and it focused on attaining the objectives insisted by Functional French, however it stressed little on how to achieve them (Lehmann, 1993, p. 41). The FOS approach was directed by the analysis of the language needs of learners (see Threshold Level or 'Un niveau Seuil'), pragmatics (speech acts) and socio-constructivism. Its application was essentially based on notional-functional and communicative approaches. The learners of FOS were often professional or university students who wanted to take French courses to achieve professional or academic goals.

Contrary to the chronological order indicated in Table 1 (Carras et al., 2007), Mangiante and Parpette (2004) commented that the nomination of 'French in Special use' should be historically anterior to FOS. The term 'Communication for Specific Purpose' appeared in 1989. The difference between French in Special Use and FOS was "the first to design methods intended for specific learners studying French from a professional or academic perspective. [...] on the other hand, the term Specific Purpose in French has the advantage of covering all the situations, whether they are involved or not in a special use." (Mangiante and Parpette, 2004, p. 16).

Mangiante and Parpette (2004) suggested that FOS covered all situations while Damette (2007, p.7) stated that FOS was certainly more attractive because it centralised the 'learner' whereas French in Special Use covered only a small part of the learners in the teaching of French.

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Mangiante and Parpette (2004) argued that the logic of the professional formation differed between French in Special Use and FOS with respect to the 'learners'. The former focused on the 'offer' suggested by the teaching designers. In other words, the learners were not identified distinctively but they existed potentially in terms of discipline or professional branch, there was no real distinction in terms of professional (e.g. French Business, French Tourism, etc.). This conceptualization was based on the logic of 'supply' that anticipated the future and possible needs of learners, an idea shared equally by Carras et al. (2007). On the other hand, the latter, FOS was concerned with the 'demand' coming from the learners, according to Mangiante and Parpette (2004). "The term 'request' refers to the existence of a specific external need. There is a certain identified learner. Therefore it generates the training program. FOS covers those domains where an institution offers training to the potential learners. Thus, the French learning cited above in the health or business domain was clearly part of French for Specific Purpose (FOS)." (Mangiante and Parpette, 2004, p. 18-19)

Professional French (French for Professional Purpose or Professional French Language)

Mourlhon-Dallies (2008) added a new concept called 'French Professional' to FOS. It can be subdivided into two typological subsets according to the demands, namely 'Professional French' and 'French as a Professional Language (now known as Français Langue Professionnel, FLP)'. This concept was a clarification of FOS. It was not meant to be replacing or overturning those previous approaches, it merely emphasized that "Each approach has its legitimacy and only responds to the concerns of its own, in an extremely diverse learning field, in which the approaches were increasingly domain orientated. [...] depending on the fields and different countries, different current approaches could co-exist. Thus, for French as a Foreign Language in the 1990s, almost all practices prior to the FLP co-existed". (Mourlhon-Dallies, 2008, p. 15).

According to Mourlhon-Dallies (2008), FOS provides the education of a certain skill rather than the training of a certain skill. This is the main difference between FLP and FOS. In another word, learners in FOS don't simply obtain the knowledge provided at the end of the course, they know what kind of knowledge they should acquire and they also understand 'how' to acquire the required knowledge. In order to achieve that, the situations for communication and various kinds of discourse were invented. It will help the learners to confront the real situation or discourse later on in their work.

FLP is required to fit into the referential frameworks of language skills. It should be pointed out that FLP focuses not only on foreigners but also on those learners who mastered little or spoke poor French and especially on those who had desperate needs to use French in their work. This approach is based firmly on the operational approaches of the Common European Framework of Reference in Language. Mourlhon-Dallies (2008) commented on the definition of French as a Professional Language, FLP is an approach concerning the teaching of French for professional purposes. Its aim is to help learners to be able to practice their profession entirely in French. FLP training is suitable for the learners who work in a French speaking workplace and for the learners to practice their entire profession in French (professional practices, legal and institutional aspects, and exchange views with colleagues and with the upper management) even if part of the work activity had to be carried out in English occasionally or in other languages (for example with clients) (Mourlhon-Dallies, 2008, p. 72)

FLP exists mainly due to the economic needs. When there is a lack of labour, there is a high tendency of immigrant recruitment. Many companies hire immigrants to solve the labour shortage problem. FLP responds to the professional formation of the immigrants. This response is considered as the preliminary level of FLP objective. FLP approach involves verbal interactions at work and writing for all the procedures in communication and information. Therefore the learners considered FLP as a tool that would help them to find a job and also as an opportunity of getting a promotion within the company through FLP certificates.

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Since 2006, many language training institutes had been offering FLP courses and certifications. The certifications are issued by the CCIP (Chamber of Commerce and Industry of Paris) in France or abroad namely CFP 1 and CPF 2 (Certificate of Professional French 1 and 2). They also offer other specialised certifications in some professional domains, for instance Diploma of Medical French (DFM), Certificate of Secretary in French (CFS), Certificate of Tourism and Hospitality in French (CFTH) and Certificate of Law in French (CFJ) as well as Diplomas of Business French 1 and 2 (DFA 1 and 2) and Diploma of the French for Advanced Business (DAFA). The CCIP also proposes a program to develop the communicative skills of the learners of FLP which is based on six main areas. They are social and professional relations, professional environment, functions of the company, administrative tasks, telephone communication and written communication.

FLP also assembles well-qualified foreign students. The higher education establishments either in university or Grande École will help the foreign students to obtain medium qualification employments in France. These foreign students must acquire the required communicative skills in French to achieve this goal.

Besides FLP, the other typological subset of the French Professional was called Professional French. This concept of Professional French was proposed by Damette (2007). The appellation is a combination of a linguistic component and a special field. The specific learning objectives are directed towards a specific group of learners “[...] to take into account not only the specificity of the domain (specialised language) but also the specificity of the learners (training designed for specific learners; with reference to two groups of learners of juridical French: students (in the process of professionalization) and professionals of the field.”(Damette, 2007, p. 7-13)

According to Carras (2007), Professional French has a transversal perspective. It requires the mastery of teaching of French. The problem of the competence of French among teachers had yet to be overcome, but this may seem too demanding as FLE teachers could not have universal knowledge in all disciplines. From a pedagogical point of view, teachers should identify the similarities in the different specialised domains and its activities, and focus those similarities in certain situation or topics for example writing a report, conducting a telephone conversation, participating in a meeting ... (Damette, 2007, p. 19-20).

The number of learners of the FLP increased by 250% in 2005 (Mangiante, 2006). Despite of this expansion, FLP were still reorienting and adapting its objectives in order to better meet the needs of the professional world. It focused on a small and recent domain in certain language training centres. Currently there were hardly any teachers or educators who have a clear definition on FLP. Mourlhon-Dallies (2006, p. 30) however had a different point of view “The learners of FLP were required to practice their profession entirely in French. In this case, the framework for practicing the entire profession was in French (legal and institutional aspects, exchange views with the colleagues and the upper management, practice of the profession) even if some part of the work activity was carried out in English or other languages (with colleagues)”.

According Mourlhon-Dallies (2006), the learners of FOS and FLP can be compared in three criteria:

- Level of French: FLP is intended for the non-native learners (immigrants from French-speaking Africa or Maghreb) and natives (illiterate population). FOS is aimed at non-native French learners related to their professional context.
- The degree of professionalization: FLP is conducted to the heterogeneous learners including those who were either in an initial training, already trained or becoming real professionals. The learners of FOS are rather homogeneous. Most of them were well-qualified learners.

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- The process of training: FLP is directed towards heterogeneous learners who followed regular training courses for the continuation of education and some of them were either in the vocational integration or had never attended the vocational training before. The purpose of FOS learners is to attain a certain professional progress.

Besides FLP and FOS, there exists a recent concept on the way of construction in related domain, it is known as “French for Academic Purpose” (now known as Français sur Objectif Universitaire, FOU). This concept is connected with the enhancement of interuniversity exchange programs in which the French universities had invested. This interuniversity exchange programs had been intensified since 1990. Its vast geographical coverage and diversity had nourished and enriched the development of FOU. Moreover the various teaching approaches of French as a foreign language also contribute to a better understanding of FOU and its role in the teaching or learning of FLE for academic purposes.

Analysing from a practical perspective in higher education, FOU consists of two approaches. First, there are similarities between FOU and FLE in terms of learning activities. In the universities that conduct FLE, communicative activities and techniques that theoretically originated from FOU were also included in FLE. Thus FOU and FLE practices interpenetrated each other despite of the suggestion from the existing theories. Second, the changes of concept, structure and methodology are found in FOU. This creates a reference domain for FOU so that its concept can be circulated widely.

The concept of FOU focuses on the acquisition and development of discursive skills such as academic discourse (e.g. lectures), the production of different academic writings (e.g. manual works, scientific article) and including production skills, speech, dissertation, report, memoir, etc.

On the other hand, FOU also focuses on the teaching and learning of formal oral and written communication, such as taking notes, reading notes, resume, summaries, presentations, etc. Stoean (2011, p. 195) stressed that the pedagogy of FOU is important for learners because “the development of transversal skills which involved the mastery of reception, understanding and production of academic genres are essential for academic success”.

Therefore the learners of FOU seeks to learn the abilities “to be able to read and listen to research discourses which are in oral and written form besides understanding academic speeches, performing academic ‘duties’ by following academic standards” as their learning objectives.

### **The making of FOS**

The history of French as a Foreign Language with the ‘specific’ learners in France dated back to the 1920s. This special form of education had begun in the military field and since then it continued to develop under various influences that are both economic in terms of oil and fiscal restraint and political in terms of the change of governments.

The evolution of FOS started in the methodological level. These innovations in FOS methodology had co-existed with certain traditional practices found in linguistic or cultural teaching. Thus FOS had several appellations. Each one of them left its mark in the evolutionary history of FOS at a certain time and in a certain place. In spite of numerous changing appellation and transformations, FOS still develops and evolves continuously in order to better adapt the specifications of the target contexts.

### **Diversity of FOS learners**

The learners had diverse characters. They have their own needs for language and cultural competence in knowledge, skill and behaviour. Their needs drive them to find their goal. They often had limited time to reach their objectives and generally they had varying levels of French. These various characteristics were found among FOS learners, they had been the study object of

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the researchers (Lehmann, 1993; Challe, 2002; Cuq and Gruca, 2002; Mangiante and Parpette, 2004; Carras et al., 2007).

In fact, regardless of the diversity of learning interests, the attention or dissatisfaction of decision-makers, the response or lack of response of the educators, these learners have a common characteristic. Lehmann had already pointed it out in 1980. He stated that although FOS approaches had been evolving, the same type of learners could still be identified. The examples in the past didn't stay the same nowadays, there might be specific depending on the case, but the characteristic of FOS learners is common. It was observed by recent researchers as Mangiante and Parpette (2004, p. 6) pointed out that "These learners as a whole, adult, professional or academic, with or without training, has learning objectives that must be achieved within a limited period of time rarely exceeding a few months."

#### **Several general parameters**

The journey of evolution construed the diversity of the learners. It obviously influenced the choice of the parameters for the categorization. Going through the period of history, the learners were defined and categorized according to the 'decision makers (décideurs)<sup>ii</sup>'. By taking a book or a textbook entitled 'A Threshold Level (Un niveau Seuil)' commissioned by the Council of Europe on a Living Languages project in 1971<sup>iii</sup> as an example, it included a demand of defining the typology of these learners with their specific and functional communication. The authors of the mentioned book classified them into three subgroups:

- those who travel abroad for professional reasons and those who are required to have regular exchanges in a country and with partners who speak other languages;
- students or long-term trainees who come to live in a foreign country for studies, work and research;
- specialists or professionals who stay in their country of origin.

In another study, from 1989 to 1990, concerning the identification of FOS teaching operations handled by French cultural services abroad, the Ministry of Foreign Affairs signified three types of learners:

-The 'Students': the demand came from institutions mainly in Latin America (129 operations out of a total of 312 operations). These students followed specialized French courses in a university or in specialized institutes or schools.

-The 'Professionals': the request came from governmental agencies or private organizations. They request an education in the field of their professional activities because they have contacts with France or French people. Out of a total of 222 transactions (state and private demands), demand comes from Europe 35% (76 operations), 21% from Asia (47 operations) and 15% from the Middle East (33 operations).

-The 'Composite public': their needs were various and not homogeneous because they were adults, professionals, individual learners seeking courses to continue their education, they were often self-financed.

We found that the above classifications were no longer seemed appropriate to represent the real situation of the learners as they were not entirely linked to the government and to the public authorities under the condition of the socio-political contexts. This classification was only linked to the successive methodological currents in the teachings of the FLE. We shall now present a chronological presentation of the categorization problem for the diverse FOS learners and discuss some of the parameters proposed by some specialists who studied in this issue as examples.

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**Diversity of FOS learners according to Lehmann (1993)**

The categorization of FOS learners was considered quite difficult. In order to deal with this problem, these FOS learners could usually be narrowed down to two categories, namely the 'learners in active life' and the 'students'. The former needed French for their profession and for their career whereas the latter needed the French for science (in a broad sense). But this dichotomy would become rather misleading because in reality there existed more than two categories that were unable to be categorised according to the main axes of the categorization.

Lehmann (1993, p. 42-46, p. 55) suggested that the categorization of the learners could be done by recognising them as specific learners. Lehmann (1993) demonstrated that there was no clear cut boundary between these learners because several types of learners sometimes had overlapping characteristics.

If some learners are considered as the first type of learners, the 'active learner', then there will be a problem when we encounter the following professional situations:

- provide training courses of commercial negotiation in French for executives from various countries arriving in France by the request from the Chamber of Commerce and Industry of Paris, CCIP in short
- work in French concerning all French technical documentation necessary for the management of spare parts, maintenance and repair of vehicles in a French car company
- organize language training in French to train officials in international relations at the request of the Hungarian government
- facilitate the integration of construction workers and migrant workers in France through language training in French

On the other hand, if some learners are considered as the second type of learners, the 'students', then problems will arise when we come across the following professional situations:

- integrate 75 hours of French lessons as a method to reach the purpose of perfecting the expression of communication in media languages for a journalism curriculum in Togo
- organize an optional university course for students of the Department of Economics and Social Sciences by Alliance Française de Guadalajara.
- provide advanced French training for medical students in oenology by a university in Bordeaux
- organize a language course for tourist guides by École du Grand Louvre
- provide French courses for the future fellows of French government in Thailand

The dichotomous division shown above couldn't solve the categorization problem due to the 'active learner' sometimes intermingled with the 'students' or vice versa, it is difficult to differentiate them.

In the previous paragraph, several general parameters, the Council of Europe categorised the target learners into three subgroups. The French cultural services abroad under the direction of the Ministry of Foreign Affairs classified the learners in a different way, the 'Students', the 'Professionals', the 'Composite public'.

We shared Lehmann's view (1993) that we should focus on the 'main axes of categorization' of the target learners. To demonstrate this, we will use the summarized table of Lehmann (1993, p. 47-48) in Table 2 to define a target learner who are Chinese-speaking students enrolled in a French university.

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**Table 2:** Key target audience grouping axes

The learners
<ul style="list-style-type: none"> <li>- academic or professional?</li> <li>- voluntary or captive?</li> <li>- homogeneous or heterogeneous? (level of mother tongue, level of target language, field of practice, learning habits and methods, duration of learning, language objectives that should be achieved)</li> </ul>
What is the nature of the field of practice?
<p>Is the intended target language sought:</p> <ul style="list-style-type: none"> <li>- very good or good enough or not specific?</li> <li>- homogeneous or diversified in terms of language competence?</li> </ul>
<p>Is the realization of the investment :</p> <ul style="list-style-type: none"> <li>- immediate, circumscribed, precise and required?</li> <li>- delayed, diffuse and random?</li> </ul>
<p>Is the formation stage considered as a whole or isolated?</p> <ul style="list-style-type: none"> <li>- before or after explicitly identifiable?</li> </ul>
<p>What is the location of learning?</p> <ul style="list-style-type: none"> <li>- in French-speaking countries or areas?</li> <li>- concerning with the training institution?</li> </ul>
<p>What is the nature of the resources available for teaching staff :</p> <ul style="list-style-type: none"> <li>- general and specific expertise, availability, adaptability, capability in the habit of working in a team, possibility or need for additional or specific training (linked or not to the operation?)</li> </ul>
<p>What is the nature of the material means?</p> <ul style="list-style-type: none"> <li>- in premises?</li> <li>- in "tools for the class" (textbooks and books): are they available? can we get them? are they developed? adapt them from existing tools?</li> <li>- technological means (especially for the production and reproduction of sound, image, written text): are they available? can we get them? how to ensure its conservation and maintenance?</li> </ul>

The diversity of the learners had shown us that we should have the awareness of understanding the interest of the learners and then reflect them on the parameters in order to define the needs of these FOS learners.

**Diversity of FOS learners according to Carras et al. (2007)**

Carras et al. (2007) had also studied the diversity of learners, their study entitled ‘French for Specific Purpose and Language Classes’ had distinguished them to three types, namely the professional learners, the learners from the academic world, the learners in the medical field and the health professions.

The professional learners were divided into two subgroups whereas the academic learners into five subgroups according to the domains of the individuals.

The first group, ‘professional learners’, should be professionals in certain workplaces, the profiles of individuals were extremely varied but territorially they can be classified into two categories:

- Those who worked in their country of origin, for example: tourism and hospitality professionals receiving French tourists, French merchants with French buyers, French companies recruiting local staffs to work on the place ... etc.
- Those who worked in the host country (France or French-speaking countries), for example: foreign managers transferred within their branch agencies or companies, various sectors in France in shortage of manpower recruiting foreign personnel.

The second group, ‘learners from the academic world’ in a broad sense, consists of five main types:

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- Foreign students who study in France;
- There are two types of university exchange programs: either university courses receive foreign students in exchange for a specific duration according to the interuniversity exchange program or in an exchange program framework where the university ‘passing the order’ to set up a training in French specifically aimed at integration (in general it is carried out in a University Centre for French Studies);
- International scientific cooperation programs welcoming foreign researchers to France;
- French and bilingual universities that open courses according to the specialised field in French in their own countries like the case in Vietnam, Laos or Cambodia.
- Students with scholarship who come from different countries and must attend their studies or part of their studies in France.

The third group, ‘learners in the medical and health professions’, concerns the recruitment of foreign health personnel, for example nurses, doctors, FFI (acting as Interns). The request comes on the spot (in France) or abroad. In France, the application could be foreign interns or foreign medical students for a certain training period. If it is abroad, the request could be a cooperation project between two countries and French physicians are sent to provide both theory and practice to foreign students abroad

As we have seen, the examples of applications that Carras et al. (2007) had enumerated in their study illustrate that the variety was extreme. It was important to note that, when we face such diverse learners, their needs and demands will affect all - or almost all - areas of specialty and jobs, the categorization remains difficult. It is difficult to distinguish each group of learners.

### **Conclusion**

We have just reviewed the different designations or conceptualizations that the teaching or learning of FLE for specific purposes had begun from the 1920s to the present. Whatever the diversity of FOS learners and the classifications proposed by the researchers during these various periods, it was necessary to be aware of the obvious difficulties of classification emphasized many times by Lehmann (1993). The weaknesses of the classification parameters concerned overlaps between clusters. Lehmann (1993) therefore considers that it was important to bear in mind that the main axes and the continuums to be regulated differently for different cognitive operations.

In conclusion, regardless of the domain in education, science, economics or other exchanges between the French and the rest of the world, the learners are considered as incapable of mastering French if they haven’t had an accurate proficiency of French in a specialised area. The teachers and educators should play an important role in helping the learners to master the target language. In this context, we imagine that one travels between two languages and two different cultures, the teaching of FOS could be comparable to a ‘ferry’ that passes between two shores. Therefore, by studying the origin and the evolution of FOS, the teachers or educators who teach French as a second language will enable to design their training programs more accurately and more effectively.

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<sup>i</sup> Commission militaire (1927). Provisional Regulations of July 7, 1926, for the teaching of French to the Armed Forces, Charles-Lavauzelle et Cie, Éditeurs militaires, Paris, Limoges, Nancy.

<sup>ii</sup> The term "decision-makers (décideurs)" in this context was defined as decision-makers of political leaders or leaders of the current education department.

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<sup>iii</sup> This project was led by Council of Europe. Recommandation R(82)18 aux Etats membres concernant les résultats du Projet No 4 du CDCC (Langues vivantes 1971-1981)  
[https://search.coe.int/cm/Pages/result\\_details.aspx?ObjectID=09000016804fa45e](https://search.coe.int/cm/Pages/result_details.aspx?ObjectID=09000016804fa45e)

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## Resilience Among Government and Private School Teachers: A Comparative Study

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### Abstract

Resilience is the ability to adapt well to hardship, trauma, tragedy, threats or even significant sources of stress. It can help teachers manage stress and feelings of anxiety and uncertainty. Being resilient does not mean that person wouldn't experience difficulty. Resilience is located in the discourse of teaching as emotional practice. It is found to be a multidimensional, socially constructed concept that is relative, dynamic and developmental in nature. This paper studied the significance of difference between government and private school teachers on resilience. Sixty school teachers were recruited from different schools of Kashmir valley through convenience sampling technique. Results revealed that teachers working in government schools score higher on resilience as compared to teachers working in private schools ( $t = 2.32, p < .05$ ). Further, the study revealed a statistically significant difference among the teachers having low and high income ( $F = 2.56, p < .05$ ) as compared to their counterparts.

**Keywords:** Resilience, government and private school teachers.

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## Introduction

Teachers face many academic challenges. To succeed and maintain their well-being, they must be resilient and have the ability to bounce back or recover from stress (Smith, Dalen, Wiggins, Tooley, Christopher, & Bernard, 2008). Resilience refers to the phenomenon that some people stay healthy and still experience well-being and satisfaction despite being exposed to intense stressors and risks, whereas other people facing comparable conditions are prone to disorders and impaired health. Psychologists have moved away from vulnerability/deficit models of resilience. There has been a paradigm shift from focusing on strengths as opposed to deficits, from illness to health (Fletcher & Sarkar, 2013). Resilience now is viewed as ordinary healthy development, not extraordinary. The role of research should focus on finding assets, resources, and values within the cultural context that have been found to promote healthy outcomes (Perry, 2008). Cochran-Smith (2000) and Nieto (2003) found that prospective teachers who reflected on their own autobiographic stories of resilience were more effective in teaching their own students.

Resilience is of importance in teaching for three reasons. Firstly, it is unrealistic to expect pupils to be resilient if their teachers, who constitute a primary source of their role models, do not demonstrate resilient qualities (Henderson & Milstein, 2003). Secondly, teaching is a demanding job in an emerging “age of diversity and sustainability” (Hargreaves & Fink, 2006). A shift in focus from teacher stress and burnout to resilience provides a promising perspective to understand the ways that teachers manage and sustain their motivation and commitment in times of change. Thirdly, resilience, defined as the capacity to continue to “bounce back”, to recover strengths or spirit quickly and efficiently in the face of adversity, is closely allied to a strong sense of vocation, self-efficacy and motivation to teach which are fundamental to a concern for promoting achievement in all aspects of students’ lives.

Resilience refers to how people deal with the hardships of life, such as disease and threats. It has drawn a great deal of attention in political and clinical areas because of its potential effects on wellbeing, welfare, and quality of life (Windle, 2011). There is no general agreement between authors regarding the nature of resilience, with some concluding that it is a process or an outcome of a process and others stating that it is a personality trait.

The term *resilience* was first used in the physical sciences to denote the behavior of a spring. In the 1970’s and 1980’s, *resilience* was adapted by the ecological and psychological communities to describe somewhat different phenomena.

- In psychology, the term was used to describe groups that did not change behavior in spite of adversity (Werner).
- In ecology, the term was used to describe ecosystems that continued to function more or less the same in spite of adversity (most notably Holling).

The American Psychological Association (2010) defined resilience as “the process of adapting well in the face of adversity, trauma, tragedy, threats, and even significant sources of stress – such as family and relationship problems, serious health problems, or workplace and financial stresses”.

Egeland (1993) described resilience as the capacity of an individual to successfully adapt and restore positive functioning of competence despite facing a high risk or a challenging situation.

Neenan (2009) defined resilience as “a set of flexible cognitive, behavioural, and emotional responses to acute or chronic adversities which can be unusual or common place”.

According to Bodin(2004) resilience is the speed with which a system returns to equilibrium after displacement irrespective of how many oscillations are required.

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According to Butler (2007) resilience is a good adaptation under extenuating circumstances; a recovery trajectory that returns to baseline functioning following a challenge

Fiksel (2006) defined resilience as “The capacity of a system to survive, adapt and grow in the face of change and uncertainty”

Ungar (2006) explained that resilience is “a multidimensional construct, the definition of which is negotiated between individuals and their communities, with tendencies to display both homogeneity and heterogeneity across culturally diverse research settings”

In humanistic psychology, resilience refers to an individual's capacity to thrive and fulfil potential despite or perhaps even because of such stressors. Resilient individuals and communities are more inclined to see problems as opportunities for growth. In other words, resilient individuals seem not only to cope well with unusual strains and stressors but actually to experience such challenges as learning and development opportunities. Following are some of the characteristics of resilient people:

- Ability to "bounce back" and "recover from almost anything"
- Have a "where there's a will, there's a way" attitude
- Tendency to see problems as opportunities
- Ability to "hang tough" when things are difficult
- Capacity for seeing small window of opportunity and making the most of them
- Have a healthy social support network
- Has the wherewithal to competently handle most different kinds of situations
- Has a wide comfort zone
- Able to recover from experiences in the pain zone or of a traumatic nature.

Whilst some individuals may seem to prove themselves to be more resilient than others, it should be recognized that resilience is a dynamic quality, not a permanent capacity. In other words, resilient individuals demonstrate dynamic self-renewal, whereas less resilient individuals find themselves worn down and negatively impacted by life stressors.

Gillespie, Chaboyer and Wallis (2007) identified current theoretical and operational definitions of resilience and also describe defining attributes of resilience. From their analysis, a conceptual model of resilience postulates that the constructs of self-efficacy, hope and coping are defining attributes of resilience. Resilience appeared to be a process that can be developed at any time during lifespan and thus is not an inherent characteristic of personality.

Stanley, Nguyen, Wilson, Stanley, Rank, and Wang (2015) investigated the mediator effects of storytelling on values and resilience of American, German, Chinese, and Vietnamese prospective teachers. The study, using path analysis, investigated how cultural differences influenced perceptions about storytelling, resilience and values. Open to change values of stimulation, self-direction, hedonism and universalism had the largest associations in the Final Model. The results of the multiple group analyses showed that the Final Model path estimates were invariant across cultural groups, but the error variances of the mean values were not invariant. Individual differences accounted for the variance more than cultural differences. The implications for educators, desiring to leverage literacy instruction with storytelling, are discussed.

Le Cornu (2013) investigates the dynamic and complex interplay among individual, relational and contextual conditions that operate over time to promote early career teacher resilience. The data for the study came from interviews with 60 beginning teachers and their principals. Five

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main 'Conditions for Resilience' emerged from the analysis: relationships; school culture; teacher identity; teachers' work; and policies and practices (Johnson, Down, Le Cornu, Peters,

Castro, Kelly, and Shih (2010) investigates the strategies of resilience exhibited by fifteen novice teachers employed in high-needs areas, such as in urban and rural contexts and in special education. Findings indicated that teachers utilised a variety of strategies, including help-seeking, problem-solving, managing difficult relationships, and seeking rejuvenation/renewal. These strategies assisted beginning teachers in building additional resources and support; however, the burden for success and securing resources fell on teachers themselves. Furthermore, the researchers recognised that resilient teachers demonstrated agency in the process of overcoming adversity.

Estaji and Rahimi (2014) attempt to examine if, gender and varied years of experience have a significant impact on teachers' ability to be resilient. Likewise, their beliefs and perception of resilience were investigated. The participants of the study entailed 40 ESP instructors who responded to a 5-point Likert-scale questionnaire. 12 instructors of both gender participated in semi-structured interviews in three categories of experience. The results of descriptive statistics and Chi-square analysis indicated significant differences in teachers' resilience, gender, and their level of teaching experience. Moreover, teacher interviews indicated that the majority of teachers had a high self-perception of resilience and resiliency building factors.

Ganapa and Sreedevi (2015) planned to find out difference in the stress levels of government and private school teachers and symptoms experienced due to stress. The study was conducted in 180 school teachers (n1=86 government school teachers, n2=94 private school teachers). Pretested semi structured questionnaire was administered. From results there is significant difference between private and government teachers in relation to personality and system factors, but no significant difference is seen in interpersonal factors. Also private teachers show more symptoms of stress.

Weiskopf (1980) in his study on "Burnout Among teachers of Exceptional children" reveals the high correlation between burnout scores and degree of job satisfaction and performance, and also found significant relationship between such scores and negative perceptions by teachers of their own power to influence work situations.

Billings and Moos (1984) in their study on "Coping Stress and Social Resources among Adults with Unpopular Depression" found that work stressors had greater impact of women than men.

Manthei and Solman (1988) In their study on "Comparative Teachers Stress and Negative Outcomes in Canterbury State Schools" focuses the study on New Zealand and N.S.M. teachers, identified seven structural factors which led to teachers stress like, pupil recalcitrance, poor remuneration, curriculum demands, low professional recognition, poor working environment, community antagonism and time demand and lack of time for adequate, preparation of assistance with individual pupil difficulties.

Sargent and Hannum (2005) in their study on "keeping Teachers Happy job Satisfaction among Primary School Teachers in Rural North-west China" comparative study highlight an in-depth research on teacher job satisfaction in rural north-west China, in terms of community factors, school environment factors, and teacher characteristics. Their findings were mostly in alignment with previous studies, but contrary to their assumptions, however, teachers with greater workloads, felt more satisfied. Further more economic development was negatively connected with teacher's satisfaction.

Lewis (1999) in his study on "Teachers Coping with the Stress of Classroom Discipline" examined that the teachers estimations of stress arising from being unable to discipline pupils in the way. They would prepare overall maintaining discipline emerged as a stressor, with those worst affected being teachers who placed particular emphasis on pupil empowerment.

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### **Objectives of the study**

1. To study the significance of difference between male and female school teachers on resilience.
2. To study the significance of difference between government and private school teachers on resilience.
3. To study the difference on the basis of income among school teachers on resilience.

### **Hypotheses of the study**

1. There will be no significant difference between male and female school teachers on resilience.
2. Government school teachers will score higher on resilience as compared to private school teachers.
3. Teachers having good Income/ Salary will score higher on resilience as compared to their counterparts.

### **Method**

#### **Participants**

Sixty teachers working in government and private schools were selected through simple Convenience sampling technique from district Srinagar and Ganderbal of Jammu & Kashmir (India). The selected teachers were divided into two groups; 30 teachers working in government schools and 30 teachers working in private schools.

#### **Tool Used**

##### **Connor-Davidson Resilience Scale.**

The Connor-Davidson Resilience Scale (CD-RISC; Connor, K.M., & Davidson, J.R., 2003) measured college student's level of resiliency. The CDRISC is comprised of 25 questions, to which the respondents answer in terms of how they have felt within the last month. Each question is rated on a five-point Likert-style scale, ranging from not true at all (0) to true nearly all the time (4). Scores on the CD-RISC can range from 0 to 100. The Cronbach's alpha values for the Connor-Davidson Resilience Scale range from 0.79 to 0.88 and the calculated alpha value was calculated as .81.

#### **Procedure**

Prior to the administration of the questionnaires, rapport was established with the teachers. The researcher introduced himself and explained purpose of the research to the respondents. The written information consent was obtained from the teachers. They were promised that their responses will remain strictly confidential and will be used for research purpose only.

#### **Statistical analysis**

The data was analyzed by using statistical package for social science (SPSS) version 20.0. Independent sample t-test and one way analysis of variance (ANOVA) were applied to know the differences, among the studied variables.

#### **Independent Sample t-test Analysis:**

**Table 1:** *Comparison of male and female school teachers on resilience*

##### **Group Statistics**

	Gender	N	Mean	SD	Std. Error	t-value
Resilience	Male	32	72.53	10.68	1.88	1.45
	Female	29	67.51	15.49	2.87	

$P > .05$  NS

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Results shows that there is an insignificant difference between male and female school teachers on resilience ( $t = 1.45, p > .05$ ).

**Table 2:** Comparison of government and private school going teachers on resilience

**Group Statistics**

	Occupation	N	Mean	SD	Std. Error	t-value
Resilience	Govt Teacher	30	74.03	12.24	2.23	2.32*
	Private Teacher	31	66.38	13.42	2.41	

\* $P < .05$

Results shows that the mean difference between the government and private school teachers is significant on resilience ( $t = 2.32, p < .05$ ). The government teachers score higher mean score (74.03) on resilience as compared to their counterparts (66.38).

The descriptive statistics of school teacher's income is reported in table 3. It can be seen that teachers having low income (3500-15000) was associated with numerically lower level of mean score on resilience ( $M = 64.44$ ) and teachers having higher income (15000-30000; 30001-48000) was associated with higher level of mean score (73.06 & 70.14) on resilience respectively. The mean difference is significant as represented by ANOVA (Table 4).

**Table 3**

**Descriptives**

Resilience	N	Mean	SD	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
3500-15000	18	64.44	15.21	3.58	56.87	72.00
15001-30000	32	73.06	9.19	1.62	69.74	76.37
30001-48000	11	71.00	17.95	5.41	58.93	83.06
Total	61	70.14	13.32	1.70	66.73	73.55

**Table 4**

**ANOVA**

Resilience	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	865.35	2	432.67	2.56	.04
Within Groups	9780.31	58	168.62		
Total	10645.67	60			

$P < .05$

Table 1 shows a statistically insignificant difference between gender (male and female) school teachers on resilience. Hence the hypothesis number 1<sup>st</sup> which hypothesise that there will be no significant difference between the male and female teachers on resilience stands accepted.

Table 2 shows a statistically significant difference between the government and private school teachers on resilience. Government teachers score higher on resilience as compared to private teachers. Hence, the hypothesis number 2<sup>nd</sup> which hypothesis that Government school teachers will score higher on resilience as compared to private school teachers stands accepted. The study was supported by Ganapa and Sreedevi (2015). They found that there is significant difference between private and government teachers in relation to personality and system factors. Besides that they found that private teachers show more symptoms of stress as compared to their counterparts.

Table 3 and 4 shows a statistically significant difference between the teachers having low and high income/salary on resilience. The teachers having high income/salary scores higher on

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resilience as compared to the teacher having low income/salary. Hence the hypothesis number 3<sup>th</sup> which hypothesise that the teachers having good income status will score higher on resilience as compared to their counterparts stands accepted.

### **Conclusion**

✚ A statistically significant difference was found between the government and private teachers on resilience. The government teacher's scores higher on resilience than private teachers.

✚ A statistically significant difference was found between the teachers having good income/salary and teachers having low income/salary status on resilience. Teachers having good income/salary scores higher on resilience as compared to their counterparts.

✚ A statistically insignificant difference was found between the male and female school teachers on resilience

Resilience is more than an individual trait. It is a capacity which arises through interactions between people. It has been observed through previous research's that, the levels of work-related stress, anxiety and depression are higher within education than any other occupational groups. Attention should be given upon fostering and sustaining resilience rather than focusing upon managing stress. It is suggested that the resilience needs to be actively nurtured through initial training and managed through the different phases of their professional lives in general among the teachers and in particular among the private school teachers.

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## Job satisfaction among Teacher Educators in Warangal District

Srilatha Goli<sup>1</sup>

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### Abstract

This study is undertaken with a view to assess the influence of Gender, management, locality, methodology they taught and experience on the job satisfaction of teacher educators. A tool developed by “Sam cartwright Adrian wells” is adopted and the same is tested for its suitability and thus localized tool is administered to the teacher educators by using random sampling technic. 60 teacher educators have come into the sample. Government, Urban working teacher educators have higher level of job satisfaction. Gender, methodology and experience of teacher educators did n’t influence the job satisfaction of the Teacher educators.

Key words: Job satisfaction, Teacher Educators

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## **Introduction**

*“Education is the most powerful weapon which you can use to change the world”.*

- Nelson Mandela

The above statement exemplifies that education plays an imperative role in the advancement of destiny of individuals as well as the society and finally leads to a nation’s development. This is the reason why the educational providers are called as the nation builders. Teaching is a life time profession. A teacher educator is responsible for the education of teachers under whose charge the destiny of our next generation is placed. If you educate a boy only an individual is educated, if you educate a girl the whole family is educated and if a teacher is educated the whole community is educated. Therefore the teachers have greater responsibility to the society and the teacher educators who prepare the teachers have the greatest responsibility.

The quality of teachers therefore rests on the teacher educators themselves. It is of vital importance that teacher educators internalize the changing role expectations with the changing times and make themselves ready for the future changes. Teacher educators can play their role effectively only when they are prepared in a creative, resourceful and efficient manner. Further, they need encouraging environment for using their knowledge and skills to nurture prospective teachers as per the demands of the changing times. The teaching profession is not a factory to produce the product with the machines and it is concerned with the human beings who decide the future of the country. That’s the reason why Kothari Commission stated that ‘The destiny of nation is being shaped in its classrooms’. Teacher is not born and he/she is made according to the present conditions. This indicates the facilities and infrastructure required to make a raw person into a powerful human being who would prepare the teachers for the country. Among the different factors influencing the performance of the teacher educators, one of the most significant factors is job satisfaction. Better job satisfied person will turn out better results and hence it is always necessary to ensure that the teacher educator is better satisfied in the profession.

In the field of teaching profession, teachers have tremendous responsibility in shaping the life of individual and society. So, a teacher, who is happy with job, plays a pivotal role in the upliftment of the students in particular and society as a whole. Well satisfied teacher can contribute a lot to the well being of their pupils. Whereas, a dissatisfied teacher may cause serious damage to the reputation and property of the organization and harm teaching profession. Job satisfaction/dissatisfaction is the result of various factors which are related to job situations. These various factors may be opportunities for career advancement, amount of tension at work, work involvement, relations with colleagues and supervisors, due recognition of merit, sufficient emoluments and good working conditions, grievances removal, feeling of fatigue and loneliness and prestige of the organization. All the above discussion plays enormous responsibility on the Govt and the agencies which provide education to the teachers and for their job satisfaction. Further one should not forget the job satisfaction is correlated with better performance and the money invested on teacher education will get better returns for the country and the present 10% budget allocation to teacher education is very low .

### **Significance of the study:**

job satisfaction of teacher educators is a essential phenomenon at the teacher training colleges/ institutions. Without job satisfaction, teaching activity will not be effective and a fruitful . It goes without saying that in the creative work like teaching job satisfaction plays a very significant role. Moreover it is viewed that the performance, effectiveness and above all the success of teacher educators depend upon the level of satisfaction they derive from their profession. Kothari Commission also said that teachers are nation builders. The all round development of the trainee teachers are influenced by the Teacher Educators. If employees are

satisfied they would produce high quality performance. Satisfied employees are also more likely to be creative and innovative and come up with breakthroughs that allow an institution to grow and change positively with time and changing conditions. Job satisfaction of Teacher Educators directly related to the building of the nation. With this background in mind the present the investigation is taken up to assess the job satisfaction levels and the factors influencing the teacher educators. Although a number of studies are carried out in the area of job satisfaction, still it is current problem as far as the teacher education is concerned for the reason that the present teacher education has under gone tremendous change in all its areas and privatisation has brought many changes in the teacher education front too. Therefore the present problem is chosen for the study.

Objectives of the study:

- *To find out the job satisfaction levels of the teacher educators.*
- *To study the influence of gender, age, marital status, teaching experience and management of the institution on the job satisfaction of the teacher educators.*

Hypothesis of the study:

- ✓ *There is no significant difference between male and female teacher educators job satisfaction .*
- ✓ *There is no significant difference between job satisfaction of teachers educators working in Government and Private institutions*
- ✓ *There is no significant difference between the educators job satisfaction of Urban and Rural teacher educators*
- ✓ *There is no significant difference between the job satisfaction of teacher educators' Methodology I and Methodology II teacher educators*
- ✓ *There is no significant difference between the job satisfaction of above and below 5 years experienced teacher educators.*

### **Sample:**

The size of the sample is 60 teacher educators of which 42 are males and 18 female teachers and it is using simple random sampling technic. The 60 teacher educators are picked from 6 colleges of education of Warangal district randomly covering all the variables included for the study.

### **Tool:**

The tool developed by “Sam cartwright Adrian wells” was adopted for the present study. The tool consisted of 40 items, all the items are placed on a 5 point scale, viz., Strongly Disagree(SD), Disagree(DA), Neutral(N), Agree(A) , Strongly Agree(SA) . The scoring for the positive item is 5 for ‘SA(Strongly Agree)’ 4 for ‘A’(agree) , 3 for neutral, ‘ 2 for DisAgree and 1 for SD(strongly Disagree)’ and this score is reverse for the negative items.

### **Validity and Reliability**

Although the tool is standardized, still the investigator felt that it should be tested for its suitability. Hence the investigator tried out on a sample of 12 teacher educators for establishing its validity and reliability. Split half reliability was established of which the value is 0.58 and the intrinsic validity is 0.76. The tool thus standardized tool was administered to the sample Teacher Educators and the results are analysed and interpreted in the light of the objectives and the hypotheses.

**Analysis and Interpretation of the Data:** The data thus collected was analysed using appropriate statistical technics.

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**Levels of Job satisfaction of teacher educators:** The data collected was used for calculating the levels of job satisfaction and the results are shown in the table;1

Table 1 shows the teacher educator job satisfaction level

Sl. No	Class interval	Frequency	Percentages	Satisfaction level
1	139-149	8	13.33	High
2	128-138	9	15.00	Above moderate
3	117-127	22	36.66	Moderate
4	106-116	19	31.66	Below moderate
5	95-105	2	3.33	Low

From table-1 it could be observed that 13.33% teacher educators have high level job satisfaction, 15% above moderate, 36.36% moderate, 31.66% below moderate, 3.3 low satisfaction. 35% of the teacher educators has below average job level . 28.33% of the teacher educators has above the moderate level job satisfaction.

### **Hypothesis No. I:**

*There is no significant difference between male and female teacher educators in their job satisfaction.*

In order to test the above hypothesis the t test is employed and for this purpose the mean scores of the male and female teacher educators are calculated and compared using the t test. The results are shown in table:2

Table 2: Male and Females Teacher educators mean scores.

Gender	Sample	Mean	SD	t-Value	Level of Significant
Male	42	123.4	10.96	<b>1.49</b>	<b>NS</b>
Female	18	117.8	12.87		

From the above table, it could be observed that the mean scores of male and female teacher educators are 123.4 and 117.8 respectively. The obtained t- value 1.49 is less than the table values of 1.98 and 2.63 for 0.05 and 0.01 levels. So it is not significant even at 0.05. In this context the null hypothesis is accepted .This shows the similar level of job satisfaction of the male and female teacher educators. However the mean values indicate the less job satisfaction of the female teacher educators.

### **Hypothesis No. II:**

*There is no significant difference between job satisfaction of teaches educators working in Government and Private institutions*

The mean values of the Govt and provate teacher educators are calculated and compared using the t value. The results of the t test are given in table:3

Table 3 :Government and Private Teacher educators mean scores.

Type of Management	Sample	Mean	SD	t-Value	Level of Significant
Government	12	132.5	7.57	4.97	Significant
Private	48	119.08	11.08		

The above table reveals that the mean scores of Govt. and private teacher educators are 132.5 and 119.08 respectively. The obtained t-value 4.97 is greater than the critical value of 1.98 and 2.63 so it is significant at 0.01 level. Therefore the null hypothesis is rejected .The job satisfaction of the teacher educators working in the Govt and private institutions is not at the same level of job satisfaction.

**Hypothesis No. III:**

*There is no significant difference between the educators job satisfaction of Urban and Rural teacher educators*

In order to test the above hypothesis, the critical ratio is calculate and the results are shown in table:4

Table 4 : Urban and Rural Teacher educators mean scores along with t value.

Group	N	MEAN	SD	t-value	Level of Significance
Urban	22	128.0	10.76	<b>3.47</b>	<b>Significant</b>
Rural	38	118.1	10.78		

From the above table, it could be observed that the mean scores of Urban and Rural teacher educators are 128.0 and 118. respectively. The obtained t-value 3.47 is greater than the critical value of 1.98 and 2.63. then it is significant at 0.05 and 0.01 levels. Therefore null hypothesis is rejected at both levels

**Hypothesis No. V:**

*There is no significant difference between the job satisfaction of above and below 5 years experienced teacher educators.*

To test the above hypothesis the t test is employed and the results are given in table-5

Table 5: Below and above 5 years experience of Teacher educators Mean Scores.

Group	Sample	MEAN	SD	t-value	Level of Significance
<b>Below 5 Years experience</b>	31	120.2	11.06	<b>1.00</b>	<b>Not Significant</b>
<b>Above 5 Years experience</b>	29	123.3	12.41		

From the above table, it could be seen that the mean scores of Below 5 Years experience and Above 5 Years experience teacher educators are 120.2 and 123.3. respectively. The obtained t-value is less than the critical value of 1.98 and 2.63 so it not significant at 0.05 . Therefore the null hypothesis is accepted .

**Hypothesis No. V:**

*There is no significant difference between the job satisfaction of teacher educators' Method logy I and Methodology II teacher educators*

Table VI : Method - I and Method -II Teacher educators Mean Scores.

Group	N	MEAN	SD	t-value	Level of Significance
Method I	28	122.8	13.55	<b>0.65</b>	<b>NS</b>
Method II	32	120.8	10.01		

From the above table, it could be observed that the mean scores of the method I and Method II teacher educators are 122.8 and 120.8. respectively. The obtained t-value 0.65 is less than the critical value of 1.98 and 2.63 so it is not significant at 0.05 and 0.01 levels. Therefore null hypothesis is accepted at both levels. The teacher educators with method one has little high job satisfaction over the teacher educators with method-2.

### **Findings**

- 28.33% of the teacher educators has above moderate job satisfaction and 35% of the teacher educators has below moderate job satisfaction level. And 36.36 has moderate job satisfaction level
- There is no significant difference between Male and Female teacher educators job satisfaction.
- There is a significant difference between Government and private teacher educators job satisfaction levels
- There is a significant difference between Urban and Rural teacher educators job satisfaction.
- There is no significant difference between below 5 years Experience and Above 5 years Experience teacher educators' job satisfaction.
- There is no significant difference between Method - I and Method- II teacher educators' job satisfaction.

### **Educational implications of the study:**

1.The level of job satisfaction found to be moderate among the Teacher educators. This needs to be improved further and three fourth of the teacher educators have low job satisfaction level and it is existed among the private teacher educators who do not get proper remuneration and lack of security.

2.Male Teacher Educators job satisfaction is higher than the female Teacher Educators .This indicates the focus is to be laid on female Teacher Educators in view of their career advancement, tension at work, work involvement, relations with colleagues and supervisors, recognition of merit, sufficient emoluments and good working conditions, grievances removal, feeling of fatigue and loneliness and prestige of the organization.

3.Government Teacher Educators job satisfaction is higher than the private Teacher Educator. It appears that the private institutions didn't give the proper assurance of job security. So Private Managements must give job security/assurance and also pay remuneration as per the work load and qualification and it enhances the job satisfaction of private Teacher educators.

4.Urban Teacher Educator job satisfaction is higher than the Rural Teacher Educator. So Employers must ensure that they provide a safe working environment. college climate is found to have a strong impact on Teacher educators' job satisfaction. The facilities available for the urban teacher educators are missing to the rural teacher educators.

5.Above 5 years experience Teachers job satisfaction is higher than the Below 5 years experience teacher educators this indicates the necessity of organizing professional development programs .

6.Method I teacher educators job satisfaction is slightly higher than the method II .This indicates method II Teacher Educators need to be arranged job satisfaction programs.

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## Scaffolding Based On Learning Style As An Effort To Increase Mathematical Creative Thinking Skill

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### Abstract

This article describes the ability of mathematical creative thinking and scaffolding process of pre-service teachers according to the learning styles. The research design used qualitative triangulation. The subject was 50 first year students of Elementary School Pre-service Teacher in Satya Wacana Christian University who were taking Basic Mathematics Concept course. Research data was taken through tests and interviews. The result of this study indicates that the subjects have different creative thinking abilities which were seen from their learning styles. Two aspects of them that were still low were flexibility and originality. The lack of love of mathematics was one of the reasons why mathematical creative thinking ability was still low. Scaffolding according to the subject's learning styles could improve the ability of mathematical creative thinking. The technique and duration of the scaffolding process depend on the learning styles and the subject's ability to follow the scaffolding process. The scaffolding process should be done according to the subject's response and needs according to their learning styles. Although they have different learning styles, scaffolding process can be done successfully with the use of media, either in the form of props and simulation drawings.

**Keywords:** Creative thinking, scaffolding, mathematic, pre-service teacher.

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### **Introduction**

One of the aims of Indonesian education is to develop the potential of learners to become creative human beings. In fact this is one of the reasons for the change of the Indonesian national curriculum from KTSP (Kurikulum Tingkat Satuan Pendidikan) into the 2013 curriculum that is to form creative learners. Creative is also one of the major components in 21st century education (Mann, 2005). Therefore, the contemporary curriculum emphasizes the development of creative thinking skills for learners (Vale & Barbosa, 2015; Sternberg, 2006). The ability to think creatively leads to the acquisition of new insights, new approaches, new perspectives, or new ways of understanding issues that include aspects of fluency, flexibility, and originality, and elaboration.

The ability to think creatively grows from the creativity of learners. Therefore, creativity becomes something that needs to be developed in education. This is similar to the results of research by Dyers et al. (2011) said that 2/3 of a person's creativity ability is obtained through education, the remaining 1/3 comes from one's genetics. In contrast to the ability of intelligence holds that 1/3 the ability of intelligence is obtained from education, 2/3 of the rest comes from one's genetic. That means we cannot do much to improve one's intelligence but we have many opportunities to improve his creativity. Creativity is applicable to all areas of learning including in the field of mathematics, especially the ability to think creatively. Thus the ability to think creatively in the field of mathematics needs to be developed so that learners have high creativity in solving mathematics problems. In addition, this ability becomes a benchmark of the success of learners in learning (Mairing & Jackson, 2016).

The problem that arises is that not all mathematics learning provides opportunities for learners to improve their creative thinking ability. Often, learning is oriented on the amount of material given. It was seen from the rank of Indonesia for mathematics subjects in Programme Internationale for Student Assessment (PISA) in recent years Indonesia is still lower than other countries. Indonesia is ranked 64 out of 72 countries. The rank has improved, but still needs to be improved again.

In addition to the rank in PISA, Indonesia's education rank still lags behind other countries, which is at the 57th rank of a total of 65 countries (World Education Ranking) published by the Organization for Economic Co-operation and Development (OECD).

This condition needs to be taken seriously by educators in this country. A change is necessary in aspect of learning mathematics for learners. Not just active learning, but also provides opportunities for learners to think more with contextual conditions. Several studies have shown that the application of innovative learning has not provided an opportunity for learners to develop their creative thinking skills in the field of mathematics (Sriwongchai at al., 2015). Therefore, it is required packing appropriate learning model.

To get the appropriate learning model, it is required a preliminary study to describe the ability to have mathematical creative thinking and how the process helps learners who still have difficulty in achieving such competence in the process of scaffolding. Scaffolding in the learning environment is a process of interaction involving the provision of assistance or guidance to learners by a teacher or friend to understand the knowledge or skills that cannot be achieved without any help (Anne at al., 2004; Jelfs at al., 2004). Scaffolding is a strategy that teachers can use in teaching and fostering the ability of learners (Bikmaz, 2010). In mathematics learning, scaffolding is an aid to solve problems, as well as help build concrete mathematical concepts and improve students' self-confidence (Akhtar, 2014). This support or assistance is tailored to the characteristics and changes in learners' abilities (Lajoie, 2005). Teachers should pay attention to the problems of each individual before providing scaffolding.

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The success of learners in learning is influenced by several factors; both internal and external. One of the factors is learning styles. Learning styles will determine how teachers teach and decide which media to use (Nindiasari, 2016; Bire, 2014). This should be taken as a consideration when doing scaffolding. The scaffolding process can be done in groups (McNeill at al., 2006) and can be done with media tools (Lajoie, 2005; McNeill at al., 2006). There is limited use of media in the scaffolding process (Holton & Clarke, 2006), so it needs to be well prepared according to the learning style that the learners have. With these considerations, it is required a good cooperation between learners and teachers in determining the media in scaffolding process (Holton & Clarke, 2006).

This study will provide an overview of the descriptions of the ability of mathematical creative thinking and description of the scaffolding process for prospective students according to their learning style. Scaffolding process is intended for students whose the ability to have mathematical creative thinking is still low according to learning style.

### **Methods**

#### **Participants**

The subjects were 50 first year students of Elementary School Pre-service Teacher from Faculty of Teacher Training and Education of Satya Wacana Christian University. In the meantime, the subjects were taking a Basic Mathematics Concept course. The educational backgrounds of the subject were from Senior High School and Senior Vocational School. The data on learning styles were taken through a questionnaire.

#### **Design of the Study**

This research was a qualitative research. The research design used triangular qualitative research. The scope of this research included the descriptions of the ability of mathematical creative thinking and scaffolding process according to the ability of mathematical creative thinking and learning styles.

#### **Instrumentation**

The ability of mathematical creative thinking was taken with test and interview techniques which include four aspects of fluency, flexibility, originality, and elaboration. Scaffolding process was done directly according to the problems of each student, observation of answers and interviews according to student answers until students understand the concept correctly.

The learning style indicators used was adopted a style questionnaire developed by De Porter that included visual, auditory and kinesthetic learning styles. The indicator of creative thinking ability is described in four aspects: fluency, flexibility, originality, and elaboration. The four aspects are described in the ability that must be owned by students as in Table 1 below.

**Table 1.** The Description of Mathematical Creative Thinking Aspects

No	Mathematical Creative Thinking Aspects	Description
1	Fluency	The ability of students to produce various answers correctly within a short of time.
2	Flexibility	The ability of students to generate various ideas and approaches to solve problems for each answers.
3	Originality	The ability of students to use a new, unique, or unusual strategy to solve problems correctly
4	Elaboration	The ability of the students to explain sequentially in detail and coherently based on certain mathematical procedures, answers, or mathematical situations.

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### Data analysis

The data was analysed using triangulation method, which is data analysis process by comparing information or data obtained through test result and interview, and scaffolding process for student with low creative thinking ability. The steps used in this study were presented as follows: 1) provide a learning styles questionnaire; 2) to provide students with a test of mathematical creative thinking ability; 3) analyse the obtained test results; 4) interviewing some students with low mathematical creative thinking ability; 5) analysing test results and interviews; 6) scaffolding process.

### Results And Discussion

The subjects of this study were 50 pre-service teachers. Based on the result of the questionnaire, there were 8 students (16%) having visual learning style, 32 students (64%) had auditory learning style, and 10 students (20%) had kinesthetic learning style. Table 2, below, presented the detail of learning styles of research subjects. In detail can be presented in Table 2 below.

**Table 2.** The Learning Styles of Research Subjects

Learning Styles	Frequency	Percentage
Visual	8	16
Auditory	32	64
Kinesthetic	10	20
Total	50	100

Result of educational background and learning styles from 50 student which become the subject of this research, it was obtained that their learning styles were different even though their education background was the same, 32 students (64%) had an auditory learning style. Details of the data can be seen in Table 3 below:

**Table 3.** Summary of Learning Styles Based on Their Education Background

Education	Visual	Auditory	Kinesthetic	Total
Senior High School	8	20	9	37
Vocational High School	0	12	1	13
Total	8	32	10	50

After students filled out the learning style questionnaires and their educational background form, they work on the test questions about geometry plane This test was used to review the subjects' mathematical creative ability. The result of of students' mathematical creative thinking ability can be seen in Table 4 below.

**Table 4.** Summary of Students' Mathematical Creative Thinking Ability

Interval	Categories	Frequency	Percentage
$\geq 20,3$	Very High	0	0
16,2 – 20,2	High	9	18
12,1 – 16,1	Medium	18	36
8 - 12	Low	23	46
Total		50	100

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Test results showed that 9 students (18%) were in the high category, 18 students (36%) were in medium category, and 23 students (46%) were in low category. For students with high mathematical creative thinking, originality was the aspect that has not been mastered. They still use the same solving method.

Students in the medium category had also performed four aspects of mathematical creative thinking. Fluency and originality were two aspects that had not mastered yet. Students in the medium category have not shown the originality of the answer and only provide one or two solving strategies. Students with low categories have not been able to apply the four aspects of mathematical creative thinking and or provide an incorrect solution. Based on educational background, students' mathematical creative thinking ability from senior high school is better than student from vocational high school. The highest score was achieved by students from high school (there are 2 people) with auditory and kinesthetic learning styles. However not all students from high school have the mathematical creative thinking ability in high category, their ability is very diverse. This shows that pre-service teachers' mathematical creative thinking ability based on educational background is very varied.

Based on these results, the elementary school pre-service teacher has low mathematical creative thinking ability. The complete data of the 4 aspects of creative thinking is illustrated from Table 5 below.

**Table 5.** Summary of Mathematical Creative Thinking Results Based on the Aspects

No	Mathematical Creative Thinking Aspects	Average	Categories
1	Fluency	1,8	High
2	Flexibility	1,2	Low
3	Originality	1,2	Low
4	Elaboration	1,8	Medium

Judging from the learning style and educational background, it shows that the subject of this elementary school pre-service teachers have a variety of mathematical creative thinking. This data is used as a consideration to determine the subject chosen for the next stage in the process of scaffolding for subjects who still have low mathematical creative thinking based on learning styles (visual, auditory and kinesthetic). There are 6 subjects selected at the beginning stage, 2 subjects for each learning style.

The results of in-depth interviews of the 6 selected subjects indicate that all subjects do not like mathematics. Five of them say that the dislike happens because the teaching process is not interesting and only work on the book questions. Educators did not motivate the learners in an interesting way. This happened since they were in junior high school. One of the reasons they are majoring in elementary school teacher is to reduce the burden in learning mathematics. They assume that with this department the burden in learning mathematics will be less. Turns out, it was different in classes, not just material but how to teach the material in a way that is good and correct. This is what makes them encountering troubles in learning mathematics so that their mathematical creative thinking ability is still in the low category.

The interview results also provide information that the mathematical creative thinking was low because of the lack of ideas in providing alternative solutions to problem solving. The problem solving strategy is not diverse (similar to other students), and the completion stage is incomplete and unfinished. This result is in line with the opinion of Best & Thomas (2007); Torrance (1969) and McGregor (2007) who stated that to produce something creative as a result of creative thinking (in this case mathematics) it is required a process that produces something new with a new idea, original idea, to solve problems that exist both well and respectively. If one is unable to think of a solution or not even understanding the given problem then one will not be able to create a solution to the problem let alone be guided by many new ways. Even to get creative thinking especially in mathematics, Vale & Barbosa (2015) requires a high curiosity

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with the process of exploration and observation, and imagination and original thinking thing. If someone does not like what is being learned then the thinking process will be hampered, they cannot be demanded to think creatively.

This data is used as a material to start the scaffolding process. The indirect scaffolding process helps them understand and work on mathematics problems but focuses on building their commitment to becoming a teacher. This becomes important because their mood will affect their learning process. After this process is adequate to give understanding and build their commitment then the process of scaffolding done. Deep scaffolding process is only done on 3 selected subjects, 1 subject for each learning style. Three other subjects considered to have been able to resolve the questions well after being guided and be reminded of the formula used, because they have forgotten the formula is the only problem.

### ***Scaffolding process for the subjects with visual learning***

#### **Scaffolding Stages**

#### **Activities**

##### Stage 1

*Motivating and discussing with the subject about the encountered problems while working on the question*

Discussion process includes the subjects' answers and problems they encountered while working on the problem. Based on the encountered problems, researchers prepare the media needed for the scaffolding process.

At the time of motivation building process, the subject tells the problem they faced when they were working on it. The problem faced is the difficulty of identifying the elements of the geometry plane in the problem, which is determining the base and height of the plane in question. The subject said that the plane that needs to be determined is a parallelogram. This happens because the plane position is not upright like the usual subject view. This data is used as a consideration to make props to facilitate the subject to understand the problem of a parallelogram like the subject had understood.

##### Stage 2

*Explaining and Constructing the Correct Concept and Working on Problem 1*

- a. Make a simulation using props according to the plane in the question. Subjects are guided to identify that the plane is a parallelogram with the help of props. The second step is to position the props precisely at the image position in the problem so that the subject is able to imagine and identify the parallelogram elements in the problem.
- b. Ask the subject to use props to write the height and base of the parallelogram in the picture in question.
- c. Guide the subject to determine how to solve the subject after using props.
- d. Ask the subject to solve the problem according to the chosen way on the provided worksheet.
- e. Help the subject to think of the alternative answers with the help of props.
- f. Guide the subject to solve the problem in a new way according to the alternative answers generated by the subject on the provided worksheet.
- g. Guide the subject to choose another strategy in solving the problem with the same answer and writing answers on the provided worksheet.
- h. Guide subjects to determine the alternative answers which rarely used by other subjects to generate a new way in solving the problem and wrote answers on the provided worksheet.

##### Stage 3

*Explaining and Constructing the Correct Concept and Working on Problem 2*

Scaffolding process was be done as follow:

- a. Create props from the problem picture along with the subject.
- b. Request the subject to use props that have been generated to make it easier to understand the problem.

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- c. Guide the subject to determine how to solve the subject after using props.
- d. Asking the subject to solve the problem according to the chosen way.
- e. Help the subject to think of alternative answers with the help of props on the provided worksheet.
- f. Guide the subject to solve the problem in a new way according to the alternative answers generated by the subject and writing answers on the provided worksheet.
- g. Guide the subject to choose another strategy in solving the problem with the same answer.
- h. Guide subjects to determine the alternative answers which rarely used by other subjects to generate a new way in solving the problem and wrote answers on the provided worksheet.

The interesting event of the scaffolding process is that the subject is quicker to understand the contents of the problem with the props they made together. Subjects have been able to identify any plane that forms the polygon in the problem. The subject is able to separate some parts of the plane and write down the elements and determine the area of each plane and determine the total area of the polygon in the problem.

### *Scaffolding for subjects with Auditory learning*

#### **Scaffolding Stages**

#### **Activities**

- |         |   |
|---------|---|
| Stage 1 | <i>Motivating and discussing with the subject about the encountered problems while working on the question.</i><br>Discussion process includes subjects' answers and problems encountered while working on the problem.<br>Giving motivation and discussion begins with the discussion of the subjects' answers and the encountered problems while working on the question.<br>Based on the problems encountered, the researcher explained about the given problem, gave an idea of the problem and how to solve the problem so the subject does not see the problem as something difficult to do.  |
| Stage 2 | Help the subject solve the problem by constructing the concept correctly.<br>Scaffolding process was done as follow: <ol style="list-style-type: none"><li>a. Guide subjects to reread the questions</li><li>b. Guide the subject to look at the image of the problem and try again to solve the problem</li><li>c. Ask the subject whether there is any problem.</li></ol>   |
| Stage 3 | Guide the subjects to get alternative answers.<br>Scaffolding process was done as follow: <ol style="list-style-type: none"><li>a. Make props according to drawing images together with subject. This step is done because the subject has difficulty in getting alternative answers.</li><li>b. Give an explanation to the subject using props that have been made to make it easier to understand the problem.</li><li>c. Guide the subject to determine how to solve the subject after using props.</li><li>d. Ask the subject to solve the problem according to the chosen way.</li><li>e. Help the subject to think of alternative answers with the help of props on the provided worksheet.</li><li>f. Guide the subject to solve the problem in a new way according to the alternative answers generated by the subject and writing answers on the provided worksheet.</li><li>g. Guide the subject to choose another strategy in solving the problem with the</li></ol> |

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<b>Scaffolding Stages</b>	<b>Activities</b>
	same answer.
	h. Guide subjects to determine the alternative answers which rarely used by other subjects to generate a new way in solving the problem and wrote answers on the provided worksheet.
Stage 4	<i>Explaining and Constructing the Correct Concept and Working on Problem 2 without props</i> This process is done because the subject has shown excellent progress in thinking. Subjects are able to understand the problem well and able to provide several different problems solving. While working on the problem, the subject heard several explanations related to the problem so that the subject is able to solve problem 2 with alternative answers are diverse.

*Scaffolding process for subjects with kinesthetic learning style*

<b>Scaffolding stages</b>	<b>Activities</b>
Stage 1	<i>Motivating and discussing with the subject about the encountered problems while working on the question</i> Giving motivation and discussion begins with the discussion of the subjects' answers and the encountered problems while working on the question. Based on the problems encountered, the researcher asks the subject to explain the contents of the problem according to the subject's understanding.
Stage 2	<i>Explaining and Constructing the Correct Concept and Working on Problem 1</i> Scaffolding process was done as follow: <ol style="list-style-type: none"><li>a. Ask the subjects to reread the question</li><li>b. Ask the subject to solve the problem according to the chosen way.</li><li>c. Help the subject to think of alternative answers with the help of props on the provided worksheet.</li><li>d. Guide the subject to solve the problem in a new way according to the alternative answers generated by the subject and writing answers on the provided worksheet.</li><li>e. Guide the subject to choose another strategy in solving the problem with the same answer.</li><li>f. Guide subjects to determine the alternative answers which rarely used by other subjects to generate a new way in solving the problem and wrote answers on the provided worksheet.</li></ol> The problem that arises from this stage is subject's difficulty to find the alternative answers. By cutting and pairing a few pieces of plane to other parts, the subject can finally get some alternative answers.
Stage 3	<i>Explaining and Constructing the Correct Concept and Working on Problem 2</i> Scaffolding process was done as follow: <ol style="list-style-type: none"><li>a. Help the subject understand problem 2 by simulating the problem image with the ballpoint. The process can be seen in the following picture.</li><li>b. Ask the subject to look back at problem 2 on its own way.</li><li>c. Guide the subject to determine how to solve the subject after using props.</li><li>d. Ask the subject to solve the problem according to the chosen way.</li><li>e. Help the subject to think of alternative answers with the help of props on the provided worksheet.</li><li>f. Guide the subject to solve the problem in a new way according to the alternative answers generated by the subject and writing answers on the provided</li></ol>

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### **Scaffolding stages**

### **Activities**

- worksheet.
- g. Guide the subject to choose another strategy in solving the problem with the same answer.
  - h. Guide subjects to determine the alternative answers which rarely used by other subjects to generate a new way in solving the problem and wrote answers on the provided worksheet.

The first step in scaffolding is to build the motivation of the subject. The goal is to motivate the subject to have a learning commitment to the topic to be resolved. The subject needs to be motivated and directed about the importance of the topic being studied and the benefits in their later work as pre-service teachers. This is in line with Dennen's (2004) thinking, that scaffolding gives cognitive and emotional influences, not only affecting skills and knowledge, but also motivation and builds the confidence of learners in doing the task. The results of interviews from 6 selected subjects, they have less good experience of mathematics even at the level of junior high school. So, there should be a change in the subject's understanding of mathematics and learning. Thus the subject will have a positive attitude towards mathematics so that the scaffolding process runs smoothly and helps the subject solve the given mathematical problem.

The second step is to explain and construct the correct concept and work on the problem. The goal is to provide reinforcement that the information in the matter is not unfamiliar and they can work on it. With this concept, the subject will be able to think from what they have understood, so that they are able to solve problems within their range of ability (Zone of Proximal Development (ZPD)) (Vygotsky, 1978). In the end the three subjects are able to solve the problem with the help given. If this process succeeds then the learning process on the more complex will be successful too (Vygotsky, 1978).

These results indicate that scaffolding helps the subject in solving the problems they face even though each subject takes a different time. The interview results support this result, in which the subject is more likely to understand the content of the question, and be able to think how the solution of the problem in given question. Subjects also said that the provided assistance gave them direction to get a solution they had not previously had. In addition, the explanation and props are used to provide simulation of the problems that exist in the matter so that the subject is able to think of the solution.

The scaffolding process of each subject takes different times according to the subject's ability to receive the help and also depend on their learning styles. The results show that subjects with visual and kinesthetic learning styles are more quickly to understand and solve the problems. Subjects with auditory learning style require a longer scaffolding process. Subjects with auditory learning style require a detailed explanation, the need for media to guide problem solving. This indicates that the scaffolding needs of each subject are different and this must be considered by the scaffolding giver to provide assistance according to the needs of the subject. This is in line with the opinion Vygotsky (1978) that the provision of assistance through scaffolding must be tailored to the needs of the subject. If subjects are able to solve their own problems; then they should be given an independent work to solve so that scaffolding will form an independent person (Williams, 2008) and self-confidence subject (Akhtar, 2014). So the subject that failed or cannot solve the problem in the matter can be helped by scaffolding (Lange, 2002).

The assistance are given to the subject through scaffolding, used in explaining, reviewing and reconstructing subjects' concepts about something so that subjects have a better understanding on the concept and be able to build the concept properly and be able to utilize in everyday life (Ormond, 2016). The technique and duration of the scaffolding process depend on the learning

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styles and the subject's ability to follow the scaffolding process. A teacher in doing scaffolding must be able to provide correct instructions and carefully according to the needs of the subject (Bikmaz, 2010). If this instruction is correct then it will build and develop the subject's knowledge.

The scaffolding process should be done according to the subject's response and the subject's needs according to their learning styles. Subjects with visual learning style require visual aids to make it easier to understand and solve problems. Subjects with auditory learning style require detailed explanations and props to understand and solve problems. Subjects with kinesthetic learning style require image simulation to provide help in understanding and solving problems. Although they have different learning styles, scaffolding process will be successful when used along with the media, either in the form of props and simulation images.

### **Conclusion**

The first result of this study indicates that the subjects have different creative thinking abilities seen from his learning style. Most of the subjects have medium creative thinking ability (18 students, 36%) and low (23 students, 46%). The lack of the subjects' mathematical creative thinking abilities is due to the lack of love of mathematics. Flexibility and originality are the aspects of creative thinking that are still low. Subjects still use the same methods and problem solving strategies.

The second result of this study shows that scaffolding according to the subject's learning style can help to improve the ability of mathematical creative thinking. The scaffolding process begins with the provision of motivation, explaining, constructing the correct concept and working on the problem. The technique and duration of the scaffolding process depend on the learning style and the subject's ability to follow the scaffolding process. Scaffolding process should be done according to the response and needs of the subject and their learning styles. The speed of the subject in receiving assistance through scaffolding takes different times. The results show that subjects with visual and kinesthetic learning style are more quickly to understand and solve the problems. Subjects with auditory learning style require a detailed explanation; they need media to guide problem solving. Subjects with visual learning style require visual aids to make it easier to understand and solve the problems. Subjects with auditory learning style require detailed explanations and props to understand and solve problems. Subjects with kinesthetic learning style require image simulation to provide help in understanding and solving the problems. Although they have different learning styles, scaffolding process will be successful when used along with the media, either in the form of props and simulation drawings.

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