

## Reflective Practices and Academic Achievement of Students: A Correlational Study

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### ABSTRACT

*This study aim was to investigate the relationship between reflective practices and academic achievement of students at university level. The study purpose was to compare the reflective practices of male and female students at university of Sargodha; and determining the relationship between reflective practices and academic achievement of students at university of Sargodha. Descriptive survey research design was used in this study. The target population was the undergraduate students of University of Sargodha. The sample of the study was 400 undergraduates' students (200 from faculty of Physical Sciences and 200 from Social Sciences). Sample was selected by using convenient sampling technique. An adopted instrument "development of a questionnaire to measure the level of reflective thinking" by Kember et al. (2000) used in this study. Data was collected by personal visits of researcher from university of Sargodha selected departments. The data was analyzed by computing the descriptive and inferential statistics. Researcher applied independent sample t test to compare the reflective practices of male and female students at university of Sargodha. Pearson Product Moment Correlation analysis was used for determining the relationship between reflective practices and academic achievement of students at university of Sargodha. Collected data was analyzed by using Statistical Package of Social Sciences (SPSS) version 23. Descriptive statistics frequency, mean and standard deviation and inferential statistics Independent Sample t test and Pearson Product Moment Correlation were used for analysis of collected data. The findings of the study revealed that there was no significant difference between the reflective practices of male and female university students and there was significant positive relationship between reflective practices and academic achievement of university students. This study could be replicated further on larger sample size using a combined and qualitative research for better understanding the reflective practices among undergraduates' university students. Seminars and workshop would be conducted department wise to enhance the reflective practices of students.*

### KEYWORDS

Reflective practices, academic performance, Higher education, University Students

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### INTRODUCTION

Students face tremendous obstacles as the complexity of their situations grows. Due to the complexity of the issues, students must be able to comprehend and apply best practices. The applied abilities and skills can be educated to the scholarly educational program, not concerning a backup for it in 21st century (NCREL, 2003; Sawchuck, 2009). Basic reasoning and the critical thinking are the capabilities which are generally reliant profound substance information and be shown confinement (Jerald, 2009) however marginally as a feature of conventional center subjects. This study can be given the best occasions to construct and create aptitudes for example, basic and intelligent reasoning and critical thinking abilities alongside two genuine word use of these aptitudes by consolidating instructional techniques inside current course educational program. These abilities are significant for studies to set them up for achievement in a multifaceted and troublesome world. A working agreement of basic deduction as a "deliberate, intelligent judgment, which shows itself in contemplated thought of proof, setting, strategies, norms, and conceptualizations in choosing what to accept or what to do" was purposed by (Facione, 2011).

Present request on educators to improve grades, this study become the casualties to an ever-expanding outstanding burden with the expectations that in the event that they can create more work, the outcome will be higher scores. For improving tests scores with the current requests on educators, understudies become casualties towards the expanding remaining task at hand with the expectations that the outcome will be higher scores in the event that they can deliver more work. For some understudies, this over-burden of "doing gobbles up their learning" (Amulya, 2003) and their chances for intuition fundamentally.

This study recollects work and analyzes methodology, considerations, and presumptions, just as survey their qualities and shortcomings by participating in intelligent practice.

Studies are acutely settling on choices about the work that has happened, expanding their compelling part in that work, and defining their own decisions instead of depending on the decisions or explanations of others, consequently improving their basic speculation aptitudes in this type of movement.



Depending upon the context the term reflection has many different definitions. Most probably, reflection is defined as an experience or a past action which happened in deliberation (Schon, 1983). According to the Boud et al., (2013) reflection is defined as an activity when it relates to learning in which student is able to recall his or her experience, think about it, mull it over, and evaluate it. However, for intellectual and affective activities reflection is a generic term in which leads towards new understandings and appreciations is happened through the experiences of individuals. It is important in learning which works with the experiences (Boud et al., 1985).

For this type of thinking continuous or regular process of is called reflective practice (Schon, 1983). According to the study of Amulya (2003) in a science class teachers provide opportunities to the students for consideration of their experiences which increase the possibility of their learning. It also increases the processing of higher order thinking (Lerch et al., 2006). It also improves the achievement of the students (Phan, 2008). It constructs the stronger critical thinking skills. In this research researcher studied the effect of reflective practice instructional method in core curriculum of science classes on critical and reflective thinking of students; in standardized high school curriculum classes it is mandatory and essential for all students to have skills and knowledge. The research design of this study was quasi-experimental research design and to compare the two different situations a non-randomized control-group, pretest/posttest design was used. The total duration of this study was 16 - week period in which reflective practice treatment was given to students which helps the students of social sciences to move from lower level of reflection such as habitual action to higher level of reflective practices which as critical reflection.

## LITERATURE REVIEW

Many concepts related to reflection can be researched. As early as (1933), Dewey explained reflection as “progressive, lasting and careful consideration of any fact or expected shape of learning in the aspect of the information which helps it more results are shown. Reflection has same practices with peoples understanding ability of thinking seriously. In 1999, Moon explains the reflection as a “type of physical process with a target and expected results which are applicable to difficult or unformed ideas and there is no any solution for it.

Boud (2013) explains reflection as “an important fact for people’s intelligence and efficient state of doing work in which singles communicate to search their skills just to observe the things deeply and discrimination. These three conceptions of reflective practices express purposeful critical investigation of education and natural event, just to gain heavy significance and statements to agree. Boud’s theory concept is further explicitly targets on individuals private working skills as the element of reflection, and is many expressed about the action of feeling in reflection (Richards, 2005).

Reflection and its utilization in teaching field can be derived backmost to Dewey’s educational concepts about “traditionalistic” and “progressive” Learning and the state between natural events and learning (Rodgers, 2002). Fendler (2003) spots the importance of reflection in advanced content to study and states that conventional learning which checks scholars to be mere gainers of subject matter, “imposes fully grown standards, subject-matter, and procedures” upon scholars. However, as Dewey explained, the adult has huge limit of capabilities that this enforcement prevent their live involvement in their own educational methods.

Reflection and Reflective training has advanced change on more time period, by cautiously created concepts and investigations. Scholars, believers, instructors and researchers have take part into the making process and evolution of Reflective actions. John Dewey was constituted as the successful Twentieth period of time gives better impact on manifestation in teaching. Reflection includes thinking about past or continuing experience of cases, situations or actions so as to make awareness of them, potentially with a display to informing future selection, decisions or acts. In so doing, we draw on present thought – our own or other people’s – and in applying them to our skills, may confirm these thoughts or develop new ones (Chirema, 2007).

Dewey had also formulated the stance that reflective thought is active and tireless thinking based on sense that originates from the cheap reality. It also contains a reasonable & intended act to modify the present practice depends on learned experience (Kolb, 2005).

### Reflective Practices according to Borton 1970

Rolfe, (2001) observed the reflective process method of Borton’s (1970). In 1970, Terry Borton's publishing Reach, Touch, and Teach got famous and gives the message of general learning methods that was impressed through Gestalt therapy and it was gathered by joining 3 questions that were asked by professional persons such as What, So what, and Now what?

The explained list was provided after this examination of process. Later it displays the way of investigation of the current situation and the development that has been observed by the natural events. Learning people chooses the oaths where they can easily grow mentally and professionally which leads them towards good skilled person later on. This theory was observed in non-educational path by professional people like the selection of nursing and supporting skilled people (Rolfe et al., 2001).

### Kolb and Fry Reflective Process 1975

*Kolb’s reflective process method observations*

Due to the initial research method the studying process of Professor David A Kolb was strongly affected, which was held by John Dewey and Jean Piaget. This conceptual model defines the theory of natural events of education and is included on the changing of knowledge into meaningful data. This happens when environment made and implicating the professional persons on the natural events, receiving the basic observation of the theory that are connected due to natural events. After this, these observations and assumptions were checked in new environment (Freshwater & Rolfe, 2001)

Through this, the information gathered by an environment is non-stop occurred and re-occurred developing on professional people list of duties like natural events and information.

#### **Reflective Practices According to Argyris and Schon 1978**

In 1978, single-loop knowledge and double-loop learning was given by Argyris and Schon and they are management researchers. They explained this theory when identification of mistakes and correctness was introduced. Single When an individual professional after the bugs and make it right then it would be method of single loop and it is unstoppable to depends on present planning methods, process when the environment gets better. The goals, methods of planning are included in study of double-loop methods. Because when same events happen a fresh system gets started (Rolfe, & Gardner, 2006). The derivation of Reflection-on-action, reflection-in-action was given by Schon and similar to them like get the solution of issues and the first duty of practical knowledge on the unseen conceptual education written by John Dewey. While the educational researcher named Harvey Shapiro has stated something about the Dewey's publishing more value-able and more advanced in terms of experience than same do (Schon's, 1978)

There are two types of reflective practices provided by Schon (1978) and the first one is Reflection-on-action. This practice includes on skillful events that had happened with you or an act that automatically happened with you. This is completed in a different manner if you think about it. While one should see at positive things also during communication with others (Colley et al., 2012)

While in Reflection-in-action, Schon (1978) observed that the actions person did are reflected by your behavior and involving problems such as good taste of experience in overall procedure. However according to Schon (1978) advanced improvement starts when an individual begins to see the items with interest by criticizing own acts.

In the thought process, the only doubt comes up with different situations and enquiries. These are structured as Problems. By doing better planning methods and automatic removing of other issues by system, the doubt will definitely set up. By this, people will capable of verifying their knowledge according to the event. Then they try to understand or assume the results and observed about their actions that they did right or not (Marzano, 2011)

#### **Reflective Practices According to Gibbs 1988**

Specialist Gibbs (1988) talked about the utilization of formed re-describing to motivate the practices engaged with Kolb's skilled studying methods. Gibbs (1988) represents the complete phases of organized questioning as mentioned below:

##### **Explanation**

"What happened? Try not to make decisions yet or attempt to make conclusions; essentially describe."

##### **Emotions**

"What were your responses and emotions? Again, don't proceed on to examining these yet."

##### **Modification**

"What was positive or negative about the experience? Make esteem decisions."

##### **Examination**

"What sense can you make of the situation? Get in ideas from outside the experience to support you."

"What was truly going on?"

"Were various people's experiences comparative or distinctive in important manners?"

##### **Results (basic)**

"What can be closed, in a general sense, from these encounters and the analyses you have embraced?"

##### **Outcomes (particular)**

"What can be finished up about your own particular, special, personal situation or method of working?"

##### **Private Acting Methods**

"What are you going to do another way in this kind of circumstances next time?"

"What steps are you going to take on the premise of what you have realized?" Gibbs recommends frequently mentioned as "Gibbs' reflective cycle" and "Gibbs' model of reflection", or rearranged into the below 6 different levels to help in shaping practices on studying knowledge:

- Explanation
- Emotions
- Modification
- Examination
- Results

- Acting methods

(Marzano & Livingston, 2011)

### **Reflective Practices according to Johns 1995**

*Transformation of the Johns Practices Process*

Educator of helping Johns (1995) planned a well-shaped method of educational practices that furnishes an individual through help for increasing more by observing of own skillful educational practices. It is supposed to help by the demonstration of imparting with a tutor that empowers the educational practices to understand the information on a quicker rank as compared to reflection uniquely (Johnson, 2009). John features the significant of practiced information and the capacity of a specialist to approach, observed and make it to skilled acts knowledge that gained by exact methods. Reflection happens by "looking in" on individuals' consideration and feelings and "looking out" on the circumstances practiced. Johns gives pros on the crafted by Barbara Carper to develop as the concept of "looking out" at a circumstance. Five structures of understanding joined in the terms of supported educational practice: the stylish, individual, manner-full, verifiable and flexible parts of the present circumstance. Johns' process is exhaustive and gives permission for educational practices that addresses numerous essential points (Johnson, 2009).

### **Reflective Practices according to Brookfield 1998**

Brookfield (1998) the advanced knowledge researcher suggested about fundamentally practical educational specialist continually finds the suspicious by observing skills by 4 reciprocal focal point: the important pint of life account as a student who seeks for knowledge of intelligent educational skills, the observation of acts of other students point of views, the seeing point of partners, educational practices, and the seeing concept of theoretical, humanistic discipline and searching piece of writing material. Analyzing skills by those seeing method made us much mindful of the modification methods that implant full training features. That's additionally causes to check political system observations—observations are those on which people believe in their rightful path eventual benefits, although it provides the duty to us in the long time.

Brookfield contended that those 4 lenses mean seeing concept methods can affect us obviously various images of ourselves (Ratnapradipa & Abrams, 2012).

**Lens 1:** Our conceited like an understudy. Our assortment of diaries is a basic method of information into preparing. As we banter to one another about essential occasions in our preparation, we start to comprehend that individual emergency are normally altogether experienced predicaments. Exploring our collections of memoirs grants us to draw information and implications for preparing on a profound instinctive passionate level (Ratnapradipa & Abrams, 2012).

**Lens 2:** Observe others by students' points of seeing things, then finding the knowledge seekers who are changing others acts of doing work in only the path of that we think of. Sometimes, people get shocked with the changing of meaningful people understand our actions according to their point of observing things. A guideline was provided observing ourselves by students' point of view for making sure the level of basic suggestions. We must allow knowledge learners to be safe. They're seeing concept even guides us to learn more about the things (Ratnapradipa & Abrams, 2012).

**Lens 3:** Learning practices with peers. Our office workers do their best as more responsible reflections that learns other about the acts that they did. Conversing to office workers about issues and getting the viewpoint grow the opportunity of searching little knowledge which can guide us according to circumstances (Ratnapradipa & Abrams, 2012).

**Lens 4:** The fourth was Piece of writing theoretically. Theory can enable others "name" others training by changing the basic materials on believe of encounters.

## **METHODOLOGY**

This study was descriptive in nature. In this study researcher used quantitative method to explore the relationship between reflective practices and academic achievement of students at university level. The undergraduates' students of University of Sargodha were the population of the study. Two faculties of university of Sargodha i.e. faculty of physical sciences and faculty of social sciences were selected as sampled faculty. Further From faculty of physical sciences 8 departments (Botany, Chemistry, Earth Science, Mathematics, Physics, Statistics, psychology, Zoology) and from faculty of Social sciences 8 departments (Education, Psychology, Social work, Sociology, Criminology, International relation, Political science, Economics) were selected as sampled departments. A sample of 400 undergraduates' students (200 from faculty of physical sciences and 200 from social sciences faculty) was selected. From above mentioned departments data from 25 students from each department were gathered. Convenient sampling technique was used in this study. A research instrument was administrated to collect the response from the respondents. The instrument utilized in this research study was "development of a questionnaire to measure the level of reflective thinking" by (Kember et al., 2000). The questionnaire contains 47 statements with four point scale. In the absence of resources from external agency the researches made personal provisions of finance and time to accomplish this research study. Data was collected by personal visits of researcher from university of Sargodha selected departments. The data was analyzed by computing the descriptive and inferential statistics. Descriptive statistics frequency,

mean and standard deviation and inferential statistics Researcher applied independent sample t test to compare the reflective practices of male and female students at university of Sargodha. Pearson Product Moment Correlation analysis was used for determining the relationship between reflective practices and academic achievement of students at university of Sargodha. Collected data was analyzed by using Statistical Package of Social Sciences (SPSS) version 23.

## RESULTS

### Descriptive statistics:

#### Frequency analysis of Demographic Characteristics of the Undergraduates

**Table 1** Semester wise distribution of students

Sr.	Semesters	f(n)	Percentage
1	6 <sup>th</sup>	88	22%
2	8 <sup>th</sup>	312	78%
3	Total	400	100%

Table 1 showed that out of 400 university students, (312) students belonged to the 8<sup>th</sup> semester. Whereas, (88) students belonged to the 6<sup>th</sup> semester. The data in the table shows that most of the data were collected from the senior students who are studying in semester 8<sup>th</sup> of BS program from different departments of University of Sargodha.

**Table 2.** Gender and program wise description of numbers of students

Sr.	Gender	BS	Total
1	Male	153	153
2	Female	247	247
3	Total	400	400

The data in the table 2 showed that data were collected from 153 male students and 247 female students of BS program from different departments of University of Sargodha.

**Table: 3.** Gender and semester wise description of number of students

Sr.	Gender	6 <sup>th</sup>	8 <sup>th</sup>	Total
1	Male	44	109	153
2	Female	43	204	247
3	Total	87	313	400

Table 3 explained that out of 400 students, (204) female students belonged to 8<sup>th</sup> semester and (43) female students belong to semester 6<sup>th</sup>. Similarly the male students (109) belonged to 8<sup>th</sup> semester and (44) male students belong to semester 6<sup>th</sup>.

**Table 4.** Faculty wise distribution of gender

Department	Male	Female	Total
Science student	84	141	225
Social science student	69	106	175
Total	153	247	400

Table 4 showed the faculty wise distribution of gender. There were 84 male and 141 female students from faculty of sciences. Similarly, there were 69 male and 106 female students were from faculty of social sciences. Majority of students were from faculty of sciences.

**Table 5.** Distribution of Sample Related to CGP

Sr.no	Level of CGPA	Range	Frequency
1	Low	1 to 1.33	0
2	Medium	1.34 to 2.66	67
3	High	2.67 to 4.00	333
Total			400

Table 5 showed distribution of sample according to level of CGP of students. There were 67 students whose CGP was medium ranging from 1.34 to 2.66. Similarly, there were 333 students who had high level of CGP ranging from 2.67 to 4.00. Majority of students have high level of CGP.

#### Factor wise Mean and Standard Deviation analysis

**Table 6.** Mean and standard deviation of factor habitual action

Sr.	Statement	N	Mean	S.D
1	When I am working on some activities, I can do them without thinking about what I am doing.	400	3.68	1.159
2	The course work requires us to understand concepts taught by the teachers.	400	3.48	1.097
3	I sometimes question the way others do something and try to think of a better way.	400	3.63	1.132
4	As a result of the studies I have changed the way I look at myself.	400	3.65	1.107

Table 6 showed the factor wise mean and standard deviation of factor habitual action. The highest mean (3.68) and standard deviation (1.159) was found of the statement when I am working on some activities, I can do them without thinking about. Similarly minimum mean (3.48) and standard deviation (1.097) was found of the statement the course work requires us to understand concepts taught by the teachers.

**Table 7.** Mean and standard deviation of factor understanding

Sr.	Statement	N	Mean	S.D
1	In the course work we do things so many times that I started doing them without thinking about it.	400	3.63	1.165
2	To pass the courses you need to understand the content.	400	3.56	1.219
3	I like to think over what I have been doing and consider alternative ways of doing it.	400	3.45	1.308
4	The courses have challenged some of my firmly held ideas.	400	3.40	1.368

Table 7 showed the factor wise mean and standard deviation of factor understanding. The highest mean (3.63) and standard deviation (1.165) was found of the statement. In the course work we do things so many times that I started doing them without thinking about it. Similarly minimum mean (3.40) and standard deviation (1.368) was found of the statement. The courses have challenged some of my firmly held ideas.

**Table 8** Mean and standard deviation of factor reflection

Sr.	Statement	N	Mean	S.D
1	As long as I can remember handout material for examinations, I do not have to think too much.	400	3.47	1.264
2	I need to understand the material taught by the teacher in order to perform practical tasks.	400	3.31	1.251
3	I often reflect on my actions to see whether I could have improved on what I did.	400	3.39	1.346
4	As a result of my studies I have changed my normal way of doing things.	400	3.65	1.107

Table 8 showed the factor wise mean and standard deviation of factor reflection. The highest mean (3.65) and standard deviation (1.107) was found of the statement As a result of my studies I have changed my normal way of doing things. Similarly minimum mean (3.31) and standard deviation (1.251) was found of the statement I need to understand the material taught by the teacher in order to perform practical tasks.

Table 9 showed the factor wise mean and standard deviation of factor critical reflection. The highest mean (3.45) and standard deviation (1.295) was found of the statement If I follow what the teachers says, I do not have to think too much on the course work. Similarly minimum mean (3.22) and standard deviation (1.287) was found of the statement during the course work I discovered faults in what I had previously believed to be right.

**Table 9.** Mean and standard deviation of factor critical reflection

Sr.	Statement	N	Mean	S.D
1	If I follow what the teachers says, I do not have to think too much on the course work.	400	3.45	1.295
2	In the course work you have to continually think about the materials you are being taught.	400	3.39	1.340
3	I often re-appraise my experience so I can learn from it and improve for my next performance.	400	3.49	1.282
4	During the course work I discovered faults in what I had previously believed to be right.	400	3.22	1.287

### Independent sample t test analysis

**Table 10.** Mean Comparison of Male and Female Students on Reflective Practices

Variable	Male		Female		<i>t</i> (371)	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Reflective practices	3.63	.84	3.58	.78	.54	.58

Table 10 indicated the comparison of undergraduate male and female students about reflective practices. There exists insignificant mean difference between undergraduate's male and female students with  $t(371) = .54, p > 0.5$ .

### Correlational analysis

**Table 11.** Relationship between reflective practices and academic achievement of students

Sr.	Variables	Mean	SD	N	Pearson r	Sig (2 tailed)
1	Reflective practices	112.58	12.88	400	.185	0.00
2	Academic achievements	3.02	.424			

Table 11 indicated the relationship between reflective practices and academic achievements of undergraduate students. There exists significant positive relationship between the reflective practices ( $M=112.58, SD=12.88$ ) and academic achievements of students ( $M=3.02, SD=.424$ ) as  $r=.185, N = 400$  and  $p < 0.05$ . This showed that increase in reflective practices also increase in academic achievements of students.

## DISCUSSION

This study purpose was to investigate the relationship between reflective practices and academic achievement of students at university level. The findings of the study revealed that there was no significant difference between the reflective practices of male and female university students and there was significant positive relationship between reflective practices and academic achievement of university students. The findings of this study have confirmed the fact as increase in reflective practices also increase in academic achievement of students. This is because as Cavilla (2017) pointed out a positive correlation exists between application of reflection instrument and level of academic performance of students. The findings of research also aligned with the result of the study conducted by Dahlgren (2019) that many of the students felt that they have organize their thinking-patterns and it also them to self-regulate their learning

Majority of students felt that writing reflections not only helped organize their thinking but also helping to self-regulate their learning. The findings of the study also aligned with the results of Loka et al., (2019) four scale of reflective thinking which were habitual action, understanding, reflection, and critical reflection were showed that had statistically significant difference on the academic achievement of students. The finding of this study was aligned with the results of Loka et al., (2019) which showed that no difference was found on the basis of gender on reflective thinking. To the best of our knowledge there is not any single study in literature which findings is in contrast to the results of our study. Every research has drawn the conclusion that reflective practices have significant association with academic achievement of students.

## CONCLUSION

This study purpose was to investigate the relationship between reflective practices and academic achievement of students at university level. The findings of the study revealed that there was no significant difference between the reflective

practices of male and female university students. Results of research confirmed that there exists significant positive relationship between reflective practices and academic achievement of students. Moreover, the association between reflective practices of student and academic achievement of undergraduate's university student was strong. Although it was a significant factor which contributes towards the academic achievement of undergraduate's university students as increase in reflective practices of students also increase in academic achievement of student but it is not a strong contributor. Hence, it is essential for university students to increase their reflective practices for their maximum academic achievement.

## RECOMMENDATIONS

**Following recommendations were made on the basis of findings of this study:**

1. Replicate the current study on larger sample size using a combined and qualitative research to be better understanding the reflective practices among undergraduates' university students.
2. Encourage the students to work on their reflective practices so that they will develop self-awareness and confidence consequently that help them to maximize their academic achievements
3. University should conduct such activities which should help students in improving their reflective practices.
4. Seminars and workshop would be conducted department wise to enhance the reflective practices of students

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