

## CONSTRUCTION AND VALIDATION OF STUDENT SATISFACTION SCALE

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### ABSTRACT

This paper describes the process of development and validation of the scale to measure the satisfaction derived by students in a class on four dimensions namely: 1) Instruction, 2) Interaction, 3) Feedback, and 4) Overall Learning Satisfaction. The preliminary draft of the scale was administered to 100 senior secondary students. After conducting item-analysis, 53 items were developed on the above mentioned four dimensions. The reliability of the scale with Cronbach Alpha method was found to be 0.89. The scale possesses content validity as it was modified according to the valuable opinions of the experts in the field of education.

**KEYWORDS:** Business Studies, Commerce, Satisfaction Scale, Senior Secondary School Students, Student Satisfaction

### INTRODUCTION

Students are dynamic in nature and can be viewed as both consumers and product when looked from different angles. It has become very necessary to satisfy them when looked from marketing point of view in this era of cut-throat competition (Badiyani, 2009). Zeithaml, Parasuraman and Berry (1990) defined satisfaction as an overall judgment, perception or attitude on the superiority of service. The judgment is based on the difference between expectations and actual experiences of the customer.

Student satisfaction can be defined as the outcome of the expectations and experiences of the subject and/or course (Markham & Hagan, 2001). According to Astin (1993, as cited in Askar & Altun, 2008) student satisfaction can also be defined as the student's perception about the college experience and perceived worth of the education received in an educational institution. It refers to the range of feelings, from positive to negative, about a learner's accomplishments and learning experiences. In the opinion of Grossman (1999), a student should be treated like a customer within the college and the college should serve the students on a priority basis in order to fulfill their expectations.

The measurement of student satisfaction can prove helpful to educational institutions in identifying their strengths and locating the areas needing improvement. Satisfaction ratings are a broader concept that goes beyond teaching assessments which have a narrow focus. To understand the complexity of satisfaction experience, knowing the degree to which students are satisfied is not enough, rather it is important to identify the factors that contribute to student satisfaction.

### METHODS

The following steps were taken in the process of developing Student Satisfaction Scale:

#### Developing Preliminary Draft of the Scale

The first step was to identify the items that attribute to student satisfaction. These items were selected after going

through various studies on student satisfaction including books, Ph. D thesis, M. Ed dissertations and abstracts available on internet. After reviewing the literature, investigator identified a large number of variables that attribute to student satisfaction and grouped them into the following dimensions:

### **Instruction**

Moll (1992) mentioned that “Vygotsky regarded education not only as central to cognitive development but as the quintessential socio-cultural activity. That is, he considered the capacity to teach and to benefit from instruction a fundamental attribute of human beings” (p.1). The basic feature of instruction is that the students, with the deliberate and planned assistance by the teacher, develop strategies to become active and conscious learners. The teacher designs a lesson format with the aim to promote the emerging skill in the students, thus, allowing them to work with the familiar then proceed towards the unfamiliar in an organized way, and deals constructively with the gaps in learning.

### **Interaction**

Student-teacher interaction is an essential component in student’s learning experience. Many researchers have demonstrated the importance of interaction between faculty members and students, both in and outside of the classroom (Astin 1999; French, Olrech, Hale, & Johnson 2003; Cox & Orehovec 2007). Astin & Mckelfresh (1993) found that student-teacher interaction had a positive effect on both cognitive and affective student development and that student-teacher interaction is the variable most strongly related to student satisfaction.

Astin & Mckelfresh (1993) also recognize peer group as an important factor which have an impact on students’ affective development. A student’s values, beliefs and aspirations change in the direction of the dominant values, beliefs and aspirations of other students. Therefore, an educational institution should devise ways of making judicious and imaginative use of student-student interaction that can substantially strengthen its impact on student learning and personal development.

### **Feedback**

Effective feedback has been frequently identified as a key strategy in the process of teaching and learning (Poulos & Mahony, 2008). Rowntree (1987) describes it as the “lifblood of learning”. Feedback is an interactive process which aims to provide learners with insight into their performance (Clynes & Raftery, 2008). The impact of constructive feedback extends beyond the teaching-learning process. It acts as a catalyst in student’s growth process by providing direction, boosting confidence, increasing motivation and self-esteem (Atkins & Williams, 1995; Baard & Neville, 1996; Begley & White, 2003) which ultimately results in student satisfaction.

### **Overall Learning Satisfaction**

Sweeney and Ingram (2001) view student satisfaction as, “the perception of enjoyment and accomplishment in the learning environment.” Moore (2009) also shares the same opinion and defines student satisfaction as, “students are successful in the learning and are pleased with their experience.” Both definitions focus on accomplishment and success in learning, and pleasure and enjoyment with the learning experience. Thus, it can be concluded that student satisfaction is a baseline requirement for successful implementation of any teaching method.

The first draft of Student Satisfaction Scale was developed containing a total of 82 items written under five dimensions i.e. (i) Instruction, (ii) Student-Teacher Interaction, (iii) Student-Student Interaction, (iv) Feedback and, (v)

Overall Learning Satisfaction. Then the scale was discussed with the ten experts in the field of education ranging from university professors to school teachers residing in India as well as abroad. Their views, suggestions and corrections were duly taken into account and the scale was modified as follows:

**Table 1: Corrections in the First Draft of Student Satisfaction Scale**

Domain	Corrections	No. of Items
Dimensions	Following are the corrected dimensions: I. Instruction a) <i>Teacher (What teacher does)</i> b) <i>Students (What students do)</i> II. Interaction a) <i>Student-Teacher Interaction</i> b) <i>Student-Student Interaction</i> III. Feedback IV. Overall Learning Satisfaction	-
Deletion	Items no. 1, 2, 9, 10 and 22 were deleted	05
Modification	Items no. 3, 4, 5, 6, 7, 12, 14, 17, 18, 20, 23, 25, 26, 29, 50, 72, 75 and 82 were modified.	18
Addition	Two new items were made (Item no. 2 and 3 in the second draft of the scale.)	02

The second draft of the scale comprised of 79 items written under four dimensions namely - (i) Instruction, (ii) Interaction, (iii) Feedback, and, (iv) Overall Learning Satisfaction. Out of these 79 items, 49 items were positive statements and the remaining 30 were negative statements. These statements were arranged in a five-point Likert type of scale and were assigned categories namely- Strongly Agree (SA), Agree (A), Neutral (N), Disagree (DA) and Strongly Disagree (DA). Following scores were allotted to different categories keeping in view the scoring procedure as suggested by Likert (1932):

**Table 2: Scoring Procedure of Student Satisfaction Scale**

Categories/ Scores	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Positive Statements	5	4	3	2	1
Negative Statements	1	2	3	4	5

The second draft of the Student Satisfaction Scale has been placed in the following table:

**Table 3: Second Draft of Student Satisfaction Scale**

S. No	STATEMENT
<b>I.</b>	<b>Instruction</b>
	<i>a) Teacher (What teacher does)</i>
1.	Teacher mentions about the objectives of the topic before starting it.
2.	Teacher makes use of PowerPoint presentations while teaching Business Studies.
3.	Teacher makes use of videos while teaching Business Studies.
4.	Teacher explains the content in English as well as in Hindi and Punjabi.
5.	Teacher does not provide lecture notes in the class.*
6.	Teacher provides clear guidelines on how to do an assignment.
7.	Teacher reminds us of the important dates like assignment submission, tests etc.
8.	At the end of each topic, short objective-type questions are asked.
9.	No questions are asked at the end of the topic.*
	<i>b) Students (What students do)</i>

10.	I feel that inclusion of images and videos in the content of Business Studies have no effect on learning.*
11.	When I am stuck on a word, I can easily find its meaning.
12.	I feel very proud and satisfied with answering the questions in this class.
13.	I feel that I have a better understanding of the basic concepts of Business studies taught in this class.
14.	I feel that the teaching in this class makes the subject boring.*
15.	I am satisfied that whenever I want, I can view the lecture video/PowerPoint presentations etc any time.
16.	I do not feel any need to involve technology (like PowerPoint presentations, videos, websites etc) in learning Business Studies.*
17.	This class makes me punctual with my homework.
18.	I feel that the absence of other learning opportunities in this class is responsible for my not getting good marks in Business Studies.*
19.	Learning Business Studies in this class helps me to relate it to real life easily.
20.	This class encourages me to find more information about business and allied activities outside of the classroom.
21.	I feel that learning Business Studies in this class does not improve my critical thinking in the subject.*
<b>II. Interaction</b>	
<i>a) Student-Teacher Interaction</i>	
22.	I like to communicate with the teacher only during the actual lesson.
23.	I feel the need to communicate with the teacher outside the class, too.
24.	I am satisfied that I can communicate with the teacher 24*7.
25.	I feel that teacher motivates us to ask questions.
26.	Teacher makes us sit quietly and listen to him/her.*
27.	I feel that it is difficult to get help when I have a doubt.*
28.	I feel reluctant to ask teacher as it will expose my lack of knowledge.*
29.	I feel comfortable in communicating with the teacher face-to-face.
30.	I feel comfortable in communicating with the teacher online.
31.	I am afraid to approach the teacher as it makes him/her angry.*
32.	I feel that the amount of interaction between the teacher and the students in the class is sufficient.
33.	I feel that teacher encourages me to get actively involved in the class discussions.
34.	I feel that the teacher does not listen to our doubts patiently.*
<i>b) Student-Student Interaction</i>	
35.	I am allowed to interact with my friends during the class.
36.	I feel that students in this class care about each other.
37.	I feel that everyone is connected in this class.
38.	I do not feel a spirit of community in this class.*
39.	I feel that this class is like a family.
40.	I feel shy interacting with the person of opposite gender.*
41.	I feel lonely in this class.*
42.	I trust others in this class.
43.	I feel that I can depend on others in this class.
44.	I feel that students in this class depend on me.
45.	I feel uncertain about other students in this class.*
46.	I feel confident that other students will help me.
47.	I feel too shy to speak openly.*
48.	I feel comfortable in communicating online with others.
49.	I feel that other students do not help me learn.*
50.	I feel that teacher encourages class discussion among students.
51.	I feel that active participation of students in this class results in effective understanding of the subject.
<b>III. Feedback</b>	
52.	I am not provided feedback in the class.*
53.	I am satisfied by the way the teacher gives feedback to me in the class.
54.	I feel encouraged by the feedback that is provided to me.
55.	I don't care about any type of feedback.*

56.	Regular feedback is provided to me in the class.
57.	Teacher gives collective feedback in the class.
58.	Teacher provides individual feedback in the class.
59.	I feel that I get timely feedback.
60.	Teacher provides me feedback on my work through comments.
61.	Whenever I perform well in the tests, teacher gives me reward.
62.	I feel that teacher takes too much time in providing feedback on tests, assignments etc.*
63.	I feel satisfied that I can access my marks of previous tests/assignments etc easily.
<b>IV.</b>	<b>Overall Learning Satisfaction</b>
64.	I feel that this class results in only modest learning.*
65.	I feel that I am given sufficient opportunities to learn in this class.
66.	I feel that my educational needs are not being met.*
67.	I feel that this class does not promote a desire to learn.*
68.	I would like to study in this type of class in future.
69.	I enjoy going to the class.
70.	I feel the class is boring.*
71.	I am afraid that I will be left behind in this class in case I take leave from the school.
72.	This class motivates me to study independently.
73.	I feel this class is more teacher-centred.*
74.	I feel that this class offers me the flexibility to learn at my own pace.
75.	I feel burdened with the learning activities in this class.*
76.	I eagerly wait for this class.
77.	I feel stressed in this class.*
78.	I feel that learning in this class is a time-consuming process.*
79.	I feel that learning in this class is not rewarding in comparison to efforts put into it.*

\* Negative Statements

**Table 4: Distribution of Positive and Negative Statements**

Item Type	Item No.	Total Items
Positive Statements	1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 15, 17, 19, 20, 22, 23, 24, 25, 29, 30, 32, 33, 35, 36, 37, 39, 42, 43, 44, 46, 48, 50, 51, 53, 54, 56, 57, 58, 59, 60, 61, 63, 65, 68, 69, 71, 72, 74, 76	49
Negative Statements	5, 9, 10, 14, 16, 18, 21, 26, 27, 28, 31, 34, 38, 40, 41, 45, 47, 49, 52, 55, 62, 64, 66, 67, 70, 73, 75, 77, 78, 79	30
		79

**Try-Out of the Scale**

The second draft of Student Satisfaction Scale was administered to 100 senior secondary students of Commerce studying Business Studies. Scoring was done according to the specifications given in the Table-1.

**Item Analysis**

The individual scores of all 100 senior secondary students on the scale were found out and arranged in descending order. Then the investigator formed two groups – one, comprising 27% of high scores and another one, comprising 27% of low scores. Item analysis was carried out by employing t-test in SPSS software version-20 for each of the 79 statements between high and low groups. Only those items which showed a significant difference between high and low groups at least at 0.05 level of confidence were retained for inclusion the final draft of the Student Satisfaction Scale as shown in the table below:

**Table 5: T-Ratio and Remarks for Items of Second Draft of Student Satisfaction Scale**

S. No	STATEMENT	T-Ratio	Remarks	Polarity
1.	Teacher mentions about the objectives of the topic before starting it.	3.717*	Retain	Positive
2.	Teacher makes use of PowerPoint presentations while teaching Business Studies.	8.671*	Retain	Positive
3.	Teacher makes use of videos while teaching Business Studies.	3.688*	Retain	Positive
4.	Teacher explains the content in English as well as in Hindi and Punjabi.	1.696	<i>Reject</i>	Positive
5.	Teacher does not provide lecture notes in the class.	14.99*	Retain	Negative
6.	Teacher provides clear guidelines on how to do an assignment.	3.309*	Retain	Positive
7.	Teacher reminds us of the important dates like assignment submission, tests etc.	5.553*	Retain	Positive
8.	At the end of each topic, short objective-type questions are asked.	5.371*	Retain	Positive
9.	No questions are asked at the end of the topic.	1.803	<i>Reject</i>	Negative
10.	I feel that inclusion of images and videos in the content of Business Studies have no effect on learning.	3.323*	Retain	Negative
11.	When I am stuck on a word, I can easily find its meaning.	3.812*	Retain	Positive
12.	I feel very proud and satisfied with answering the questions in this class.	1.755	<i>Reject</i>	Positive
13.	I feel that I have a better understanding of the basic concepts of Business studies taught in this class.	3.261*	Retain	Positive
14.	I feel that the teaching in this class makes the subject boring.	1.442	<i>Reject</i>	Negative
15.	I am satisfied that whenever I want, I can view the lecture video/PowerPoint presentations etc any time.	7.858*	Retain	Positive
16.	I do not feel any need to involve technology (like PowerPoint presentations, videos, websites etc) in learning Business Studies.	1.442	<i>Reject</i>	Negative
17.	This class makes me punctual with my homework.	3.007*	Retain	Positive
18.	I feel that the absence of other learning opportunities in this class is responsible for my not getting good marks in Business Studies.	5.292*	Retain	Negative
19.	Learning Business Studies in this class helps me to relate it to real life easily.	3.135*	Retain	Positive
20.	This class encourages me to find more information about business and allied activities outside of the classroom.	2.280*	Retain	Positive
21.	I feel that learning Business Studies in this class does not improve my critical thinking in the subject.	4.132*	Retain	Negative
22.	I like to communicate with the teacher only during the actual lesson.	1.803	<i>Reject</i>	Positive
23.	I feel the need to communicate with the teacher outside the class, too.	1.442	<i>Reject</i>	Positive
24.	I am satisfied that I can communicate with the teacher 24*7.	2.550*	Retain	Positive
25.	I feel that teacher motivates us to ask questions.	3.633*	Retain	Positive
26.	Teacher makes us sit quietly and listen to him/her.	3.323*	Retain	Negative
27.	I feel that it is difficult to get help when I have a doubt.	4.228*	Retain	Negative
28.	I feel reluctant to ask teacher as it will expose my lack of knowledge.	14*	Retain	Negative
29.	I feel comfortable in communicating with the teacher face-to-face.	1.755	<i>Reject</i>	Positive
30.	I feel comfortable in communicating with the teacher online.	1.442	<i>Reject</i>	Positive
31.	I am afraid to approach the teacher as it makes him/her angry.	3.229*	Retain	Negative
32.	I feel that the amount of interaction between the teacher and the students in the class is sufficient.	4.121*	Retain	Positive

33.	I feel that teacher encourages me to get actively involved in the class discussions.	3.917*	Retain	Positive
34.	I feel that the teacher does not listen to our doubts patiently.	9.915*	Retain	Negative
35.	I am allowed to interact with my friends during the class.	10.326*	Retain	Positive
36.	I feel that students in this class care about each other.	1.363	<b>Reject</b>	Positive
37.	I feel that everyone is connected in this class.	14.652*	Retain	Positive
38.	I do not feel a spirit of community in this class.	4.481*	Retain	Negative
39.	I feel that this class is like a family.	1.755	<b>Reject</b>	Positive
40.	I feel shy interacting with the person of opposite gender.	5.385*	Retain	Negative
41.	I feel lonely in this class.	4.862*	Retain	Negative
42.	I trust others in this class.	1.803	<b>Reject</b>	Positive
43.	I feel that I can depend on others in this class.	8.630*	Retain	Positive
44.	I feel that students in this class depend on me.	2.567*	Retain	Positive
45.	I feel uncertain about other students in this class.	1.442	<b>Reject</b>	Negative
46.	I feel confident that other students will help me.	1.755	<b>Reject</b>	Positive
47.	I feel too shy to speak openly.	1.654	<b>Reject</b>	Negative
48.	I feel comfortable in communicating online with others.	1.803	<b>Reject</b>	Positive
49.	I feel that other students do not help me learn.	3.638*	Retain	Negative
50.	I feel that teacher encourages class discussion among students.	6.436*	Retain	Positive
51.	I feel that active participation of students in this class results in effective understanding of the subject.	4.533*	Retain	Positive
52.	I am not provided feedback in the class.	1.803	<b>Reject</b>	Negative
53.	I am satisfied by the way the teacher gives feedback to me in the class.	5.356*	Retain	Positive
54.	I feel encouraged by the feedback that is provided to me.	1.688	<b>Reject</b>	Positive
55.	I don't care about any type of feedback.	1.755	<b>Reject</b>	Negative
56.	Regular feedback is provided to me in the class.	1.803	<b>Reject</b>	Positive
57.	Teacher gives collective feedback in the class.	1.0	<b>Reject</b>	Positive
58.	Teacher provides individual feedback in the class.	1.363	<b>Reject</b>	Positive
59.	I feel that I get timely feedback.	4.511*	Retain	Positive
60.	Teacher provides me feedback on my work through comments.	8.272*	Retain	Positive
61.	Whenever I perform well in the tests, teacher gives me reward.	3.854*	Retain	Positive
62.	I feel that teacher takes too much time in providing feedback on tests, assignments etc.	5.967*	Retain	Negative
63.	I feel satisfied that I can access my marks of previous tests/assignments etc easily.	10.696*	Retain	Positive
64.	I feel that this class results in only modest learning.	4.469*	Retain	Negative
65.	I feel that I am given sufficient opportunities to learn in this class.	4.476*	Retain	Positive
66.	I feel that my educational needs are not being met.	1.727	<b>Reject</b>	Negative
67.	I feel that this class does not promote a desire to learn.	3.748*	Retain	Negative
68.	I would like to study in this type of class in future.	5.882*	Retain	Positive
69.	I enjoy going in the class.	1.755	<b>Reject</b>	Positive
70.	I feel the class is boring.	3.075*	Retain	Negative
71.	I am afraid that I will be left behind in this class in case I take leave from the school.	3.502*	Retain	Positive
72.	This class motivates me to study independently.	7.858*	Retain	Positive
73.	I feel this class is more teacher-centred.	4.261*	Retain	Negative
74.	I feel that this class offers me the flexibility to learn at my own pace.	6.814*	Retain	Positive
75.	I feel burdened with the learning activities in this class.	8.840*	Retain	Negative
76.	I eagerly wait for this class.	1.755	<b>Reject</b>	Positive
77.	I feel stressed in this class.	1.688	<b>Reject</b>	Negative
78.	I feel that learning in this class is a time-consuming process.	2.040*	Retain	Negative

79.	I feel that learning in this class is not rewarding in comparison to efforts put into it.	2.644*	Retain	Negative
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\* Significance at 0.05 level of confidence

### Final Draft of the Scale

The final draft of the Student Satisfaction Scale consisted of 53 items under the following four dimensions:

**Table 6: Final Items in Four Dimensions of the Student Satisfaction Scale along with Their Distribution into Positive and Negative Polarity**

S. No	Dimensions	Positive Polarity Item No.	Negative Polarity Item No.	Total
I	Instruction			
	a) Teacher (What teacher does) b) Students ( What students do)	1, 2, 3, 5, 6, 7 9, 10, 11, 12, 14, 15	4 8, 13, 16	<b>07</b> <b>09</b>
II	Interaction			
	a) Student-Teacher Interaction a) Student-Teacher Interaction	17, 18, 23, 24 26, 27, 31, 32, 34, 35	19, 20, 21, 22, 25 28, 29, 30, 33	<b>09</b> <b>10</b>
III	Feedback	36, 37, 38, 39, 41	40	<b>06</b>
IV	Overall Learning Satisfaction	43, 45, 48, 50	42, 44, 46, 47, 49, 51, 52, 53	<b>12</b>
	<b>TOTAL</b>	<b>31</b>	<b>22</b>	<b>53</b>

### Scoring Procedure

The final Student Satisfaction Scale comprised of 53 items, out of which 31 items are positive statements and 22 items are negative statements. The score of an individual is the sum of all the positive and negative items. The score ranges from minimum 53 to maximum 265. Higher score indicates greater satisfaction and lower score indicates less satisfaction of the students in the class.

### Validity and Reliability of the Scale

The content validity and face validity of the Student Satisfaction Scale was ensured through continuous discussions with the experts ranging from university professors to school teachers, residing in India as well as abroad, right from the first draft up to the final draft of the scale.

The reliability of Student Satisfaction Scale was calculated by Cronbach's Alpha method and is found to be 0.89.

### Norms

The percentile norms, z-scores and t-scores have been calculated and are listed in the following tables:

**Table 7: Percentile Norm of the Entire Sample**

Percentile	Score
P <sub>10</sub>	150
P <sub>20</sub>	171
P <sub>30</sub>	178
P <sub>40</sub>	183
P <sub>50</sub>	186
P <sub>60</sub>	191
P <sub>70</sub>	196
P <sub>80</sub>	200
P <sub>90</sub>	216



**Table 8: The Z-Scores and T-Scores of Student Satisfaction Scale**

Raw Scores	Z-Scores	T-Scores
117	-2.70475	22.95
119	-2.62504	23.75
127	-2.30623	26.94
139	-1.82801	31.72
147	-1.50920	34.91
153	-1.27009	37.30
157	-1.11068	38.89
162	-.91142	40.89
165	-.79187	42.08
169	-.63246	43.68
171	-.55276	44.47
172	-.51291	44.87
173	-.47305	45.27
175	-.39335	46.07
176	-.35350	46.47
177	-.31365	46.86
180	-.19409	48.06
181	-.15424	48.46
181	-.15424	48.46
182	-.11439	48.86
182	-.11439	48.86
183	-.07454	49.25
183	-.07454	49.25
183	-.07454	49.25
184	-.03469	49.65
184	-.03469	49.65
184	-.03469	49.65
188	.12472	51.25
188	.12472	51.25
189	.16457	51.65
189	.16457	51.65
190	.20442	52.04
191	.24428	52.44
192	.28413	52.84
194	.36383	53.64
196	.44353	54.44
196	.44353	54.44
196	.44353	54.44
197	.48339	54.83
198	.52324	55.23
198	.52324	55.23
198	.52324	55.23
199	.56309	55.63
200	.60294	56.03
202	.68264	56.83
202	.68264	56.83
210	1.00146	60.01
213	1.12101	61.21
215	1.20072	62.01
218	1.32027	63.20
224	1.55938	65.59
228	1.71879	67.19
232	1.87819	68.78
234	1.95790	69.58

## CONCLUSIONS

The purpose of this research was to develop a scale which would facilitate the teachers in measuring the satisfaction level of their students. This will help the teachers in knowing their strengths and locating the areas needing improvement. This Student Satisfaction Scale is a valid and reliable instrument that can be applied at every class level-being in school or at higher education level.

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