

Procedure for Defining Learning Outcomes and Measuring their Attainment

The following steps are being adopted for defining learning outcomes and measuring their attainment.

- Step 1 :** Defining the vision and mission of the college
- Step 2 :** Defining Programme Outcomes (POs) and Programme Specific Outcomes (PSOs) of programme
- Step 3 :** Defining Course Outcomes (COs) of each course in a programme
- Step 4 :** Defining relation between COs and POs/PSOs for each course to obtain overall CO mapping with each POs and PSOs (Course Articulation Matrix)
- Step 5 :** Calculating overall level of relation of a course with POs and PSOs (Program Articulation Matrix)
- Step 6 :** Defining the methodology for measuring the attainment of learning outcomes and setting up the target level
- Step 7 :** Measuring attainment levels of learning outcomes
- Step 8 :** Comparison of obtained attainment level with the target and action taken.

The above steps are elaborated below:

Steps 1, 2 and 3: Defining the Vision and Mission of the Department, Defining Programme Outcomes (POs) and Programme Specific Outcomes (PSO) of programme, Defining Course Outcomes (COs) of each course in a Programme.

College has defined vision, mission, and goals. The vision is envisaged in the form of vision document, perspective plan and college development plan. College's vision and mission ensures consistency with parent institution's (Rayat Shikshan Sanstha) vision and mission.

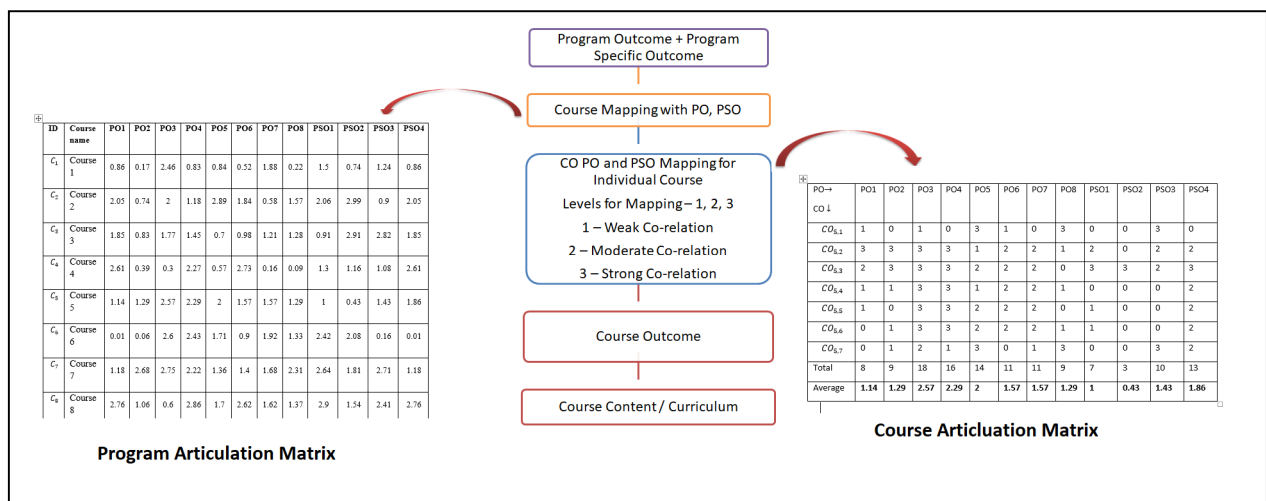
POs are assertions regarding the knowledge, skills, and characteristics that a university graduate should possess after successfully completing the programme. POs deal with the overall element of graduation for a certain programme, as well as the competences and expertise that a graduate will have after completing it. Every programme provided by the university has its own set of POs. PSOs are statements that specify what graduates of a particular programme should be capable of. Each programme also has its own set of specific outcomes.

COs are measurable statements which state what students are expected to learn in a specific course. For each of course of programme these measurable statements are defined.



The Model is implemented effectively by defining PO, PSO, and CO, CO-PO mapping, designing attainment levels and target attainment levels, calculating CO-PO attainments, and developing teaching learning strategies at the course and programme levels.

Overall process of mapping of COs with POs and PSOs is shown in following diagram with formulation of Course Articulation matrix and Program Articulation matrix.



Step 4: Defining relation between COs and POs/PSOs for each course to obtain overall CO mapping with each POs/PSOs (Course Articulation Matrix)

In this step, COs of each course are mapped with POs and PSOs. A correlation is established between COs and POs/PSOs in the scale of 1 to 3, 1 being the low, 2 being moderate (medium) and 3 being substantial (high). The meaning of ‘0’ is no correlation between CO and PO/PSO.

For example, programme XYZ (say) has 8 POs and 4 PSOs. Then, course articulation matrix for a course-1 (say) with seven COs is as follow.

PO→ CO ↓	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
CO1	1	0	1	0	3	1	0	3	0	0	3	0
CO2	3	3	3	3	1	2	2	1	2	0	2	2
CO3	2	3	3	3	2	2	2	0	3	3	2	3
CO4	1	1	3	3	1	2	2	1	0	0	0	2
CO5	1	0	3	3	2	2	2	0	1	0	0	2
CO6	0	1	3	3	2	2	2	1	1	0	0	2
CO7	0	1	2	1	3	0	1	3	0	0	3	2

In the same way we have course articulation matrices for all the courses in that programme.

Step 5: Calculating overall level of relation of a course with POs and PSOs (Program Articulation Matrix)

The CO levels corresponding to each PO/PSO in course articulation matrix are averaged to obtain overall level of relation of course with each PO and PSO. For example, the overall relation of course-1 (say) are reported the following matrix.

PO→ CO ↓	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
CO1	1	0	1	0	3	1	0	3	0	0	3	0
CO2	3	3	3	3	1	2	2	1	2	0	2	2
CO3	2	3	3	3	2	2	2	0	3	3	2	3
CO4	1	1	3	3	1	2	2	1	0	0	0	2
CO5	1	0	3	3	2	2	2	0	1	0	0	2
CO6	0	1	3	3	2	2	2	1	1	0	0	2
CO7	0	1	2	1	3	0	1	3	0	0	3	2
Average	1.14	1.29	2.57	2.29	2	1.57	1.57	1.29	1	0.43	1.43	1.86

Similarly, the overall level of relation of all the courses in the programme is established. These levels are reported in the matrix form and this matrix is called as the programme articulation matrix. For example if the programme XYZ has 12 courses then the programme articulation matrix will be as follows.

Program Articulation Matrix

ID	Course name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
C ₁	Course 1	1.14	1.29	2.57	2.29	2.00	1.57	1.57	1.29	1.00	0.43	1.43	1.86
C ₂	Course 2	2.05	0.74	2.00	1.18	2.89	1.84	0.58	1.57	2.06	2.99	0.90	2.05
C ₃	Course 3	1.85	0.83	1.77	1.45	0.70	0.98	1.21	1.28	0.91	2.91	2.82	1.85

C_4	Course 4	2.61	0.39	0.30	2.27	0.57	2.73	0.16	0.09	1.30	1.16	1.08	2.61
C_5	Course 5	0.86	0.17	2.46	0.83	0.84	0.52	1.88	0.22	1.50	0.74	1.24	0.86
C_6	Course 6	0.01	0.06	2.60	2.43	1.71	0.90	1.92	1.33	2.42	2.08	0.16	0.01
C_7	Course 7	1.18	2.68	2.75	2.22	1.36	1.40	1.68	2.31	2.64	1.81	2.71	1.18
C_8	Course 8	2.76	1.06	0.60	2.86	1.70	2.62	1.62	1.37	2.90	1.54	2.41	2.76
C_9	Course 9	1.40	0.50	2.43	2.34	1.88	0.67	0.82	1.42	1.83	2.45	1.82	1.40
C_{10}	Course 10	2.59	0.28	1.17	0.61	0.05	1.77	1.87	1.73	2.60	2.14	0.99	2.59
C_{11}	Course 11	2.86	1.24	0.48	2.73	1.42	1.51	0.07	2.53	0.45	0.96	1.22	2.86
C_{12}	Course 12	1.05	2.25	0.15	2.10	2.11	2.47	0.68	2.05	1.33	1.32	0.87	1.05
C_{13}	Course 13	2.51	0.81	0.34	2.07	1.81	0.68	0.38	2.98	1.17	1.23	1.48	2.51
C_{14}	Course 14	1.20	2.91	2.08	1.18	0.35	2.55	2.64	2.20	1.46	1.46	1.82	1.20
C_{15}	Course 15	1.07	0.31	1.29	1.65	1.13	0.90	1.13	1.99	1.64	0.14	1.54	1.07
C_{16}	Course 16	1.71	2.17	0.43	2.70	2.68	1.71	1.75	1.50	2.50	0.45	1.37	1.71
C_{17}	Course 17	1.83	2.89	0.92	0.02	1.38	2.04	2.69	1.09	1.82	0.44	1.94	1.83
C_{18}	Course 18	1.59	1.40	1.96	1.85	2.40	2.36	0.09	1.80	1.74	2.09	0.40	1.59
C_{19}	Course 19	2.86	0.50	2.09	2.37	2.84	1.94	1.53	0.27	2.02	2.54	0.61	2.86
C_{20}	Course 20	1.33	1.70	0.64	2.51	1.36	0.86	2.22	1.78	1.81	0.15	1.38	1.33
C_{21}	Course 21	2.04	0.47	2.63	0.97	2.80	1.75	2.95	2.80	0.99	2.90	0.93	2.04
C_{22}	Course 22	2.70	2.95	1.00	1.93	1.00	2.43	2.23	1.17	0.26	1.70	2.95	2.70
C_{23}	Course 23	0.80	0.89	1.94	0.77	1.84	2.96	1.08	1.18	2.94	0.49	2.30	0.80
C_{24}	Course 24	2.83	1.83	0.63	2.93	2.65	2.35	2.18	0.64	0.88	1.24	1.27	2.83

Step 6: Defining the methodology for measuring the attainment of learning outcomes and setting up the target level.

In this step, methodology for measuring the attainment level of learning outcomes is defined and the target levels for the batch are defined.

- **Methodology for the attainment of learning outcomes for this year**

Details of a programme:

- Programme name XYZ
- Programme has n_1 POs, say, $PO_1, PO_2, \dots, PO_{n_1}$
- Programme has n_2 PSOs, say, $PSO_1, PSO_2, \dots, PSO_{n_2}$

Let $n = n_1 + n_2$, total number of POs and PSOs. For convenience, let us denote the POs & PSOs, $PO_1, PO_2, \dots, PO_{n_1}, PSO_1, PSO_2, \dots, PSO_{n_2}$ by P_1, P_2, \dots, P_n

- Programme has m courses, say, C_1, C_2, \dots, C_m
- Each course C_i has k_i course outcomes (COs) denoted as $CO_{i,1}, CO_{i,1}, \dots, CO_{i,k_i}, i = 1, 2, \dots, m$.

Course articulation matrices and programme articulation matrix are obtained as discussed in previous steps. Let $X_{i,j,l}$ be the level of correlation of CO, $CO_{i,j}$ (j^{th} CO of course C_i) with P_l where $i = 1, 2, \dots, m, j = 1, 2, \dots, k_i, l = 1, 2, \dots, n$. Let $Y_{i,l}$ be the overall CO levels of course C_i with P_l and is calculated as $Y_{i,l} = \frac{1}{k_i} \sum_{j=1}^{k_i} X_{i,j,l}$ where $i = 1, 2, \dots, m, l = 1, 2, \dots, n$

Attainment of COs

The CO attainment levels are measured based on the results of the internal assessment and external examination conducted by the university. The CO attainment level based on internal assessment and external assessment are computed separately.

Attainment levels based on internal/external assessment method are defined as follows:-

Level 1: 30% of students scored more than class average for that assessment method

Level 2: 40% of students scored more than class average for that assessment method

Level 3: 50% of students scored more than class average for that assessment method

Let ALC_E and ALC_I be the CO attainment level of the course based on external assessment and internal assessment respectively. The overall CO attainment of the course is calculated by taking 80% weightage to external assessment and 20% weightage to external assessment.

$$ALC = 0.8 * ALC_E + 0.2 * ALC_I.$$

Let $ALC_1, ALC_2, \dots, ALC_m$ be the CO attainment levels of the courses C_1, C_2, \dots, C_m respectively.

Attainment of POs and PSOs

The attainment of POs and PSOs are calculated using direct and indirect method. In direct method the attainment of POs and PSOs are calculated through the attainment levels of COs. The CO attainment values ($ALC_1, ALC_2, \dots, ALC_m$) and the overall level of relation of course with each PO and PSO ($Y_{i,l}, i = 1, 2, \dots, m, l = 1, 2, \dots, n$) are used to compute direct attainment level of each PO and PSO. The direct attainment level of the l^{th} , PO/PSO is calculated as follows.

$$DALP_l = \frac{1}{\sum_{i=1}^m Y_{i,l}} \sum_{i=1}^m Y_{i,l} * ALC_i, l = 1, 2, \dots, n$$

For determining indirect attainment level of POs and PSOs, every year college conducts feedback surveys on curriculum of all stakeholders (Parent, teachers, students, alumni and employers). The feedback on the points related to the curriculum and its execution are used to calculate indirect level of attainment. Let $IALP_l$ be the indirect attainment level for the l^{th} , PO/PSO.

Overall attainment level of the l^{th} , PO/PSO is calculated by taking 80% weightage to direct attainment level and 20% weightage to indirect attainment level that is,

$$ALP_l = 0.8 * DALP_l + 0.2 * IALP_l, l = 1, 2, \dots, n.$$

The overall PO attainment levels are categorized as below.

Level I: greater than 0 and less than 1.0 (0>1)-Poor

Level II: 1.0>1.5-Average

Level III: 1.5>2.0-Good

Level IV: 2.0>2.5- Very Good

Level V: 2.5>3.0-Excellent

For every programme, the target level is set. We have set level IV as target level that is we are aiming minimum level-IV (very good) in the performance of abilities of students.

Step 7: Measuring attainment levels of learning outcomes

This step includes the calculation of attainment levels of learning outcomes after result declaration.

Step 8: Comparison of obtained attainment level with target and action taken.

In this step the target levels of PO attainment are compared with obtained PO attainment levels.

PO	Overall Attainment	Attainment Level	Target Level	Remark
PO1	2.40	Level-4	Level-4	Fully attained
PO2	2.16	Level-4	Level-4	Fully attained
PO3	1.81	Level-3	Level-4	Partially attained
PO4	2.12	Level-4	Level-4	Fully attained
PO5	2.50	Level-4	Level-4	Fully attained
PO6	2.47	Level-4	Level-4	Fully attained
PO7	1.61	Level-3	Level-4	Partially attained
PO8	1.57	Level-3	Level-4	Partially attained
PSO1	2.46	Level-4	Level-4	Fully attained
PSO2	1.63	Level-3	Level-4	Partially attained

PSO3	1.72	Level-3	Level-4	Partially attained
PSO4	2.4	Level-4	Level-4	Fully attained

If the target level is not achieved, some remedial actions are taken to achieve the target level in the next year. The remedial actions include additional assignment/tutorials/remedial teaching.



Rayat Shikshan Sanstha's

Abasaheb Marathe Arts and New Commerce, Science College, Rajapur.

**Course Outcomes, Program Outcomes and Program Specific Outcomes Attainment Reports of
the Institute 2022 - 2023 Batch**

**CO PO Attainment
Report
Department of Hindi
(2022-23)**

Name of the Programme: B.A. - Bachelor of Arts

Name of Department: Hindi

Program Outcomes (POs)

Graduates of the B.A. Hindi program will be able to:

I. Program Outcome of Bachelor of Arts (B.A.)

Student seeking admission for B.A. programme is expected to imbue with following quality which helps them in their future life to achieve the expected Goals.

- a. Realization of human values.
- b. Sense of social service.
- c. Responsible and dutiful citizen.
- d. Critical temper
- e. Creative ability.

II. Program Specific Outcomes B.A. (Hindi)

On completion of B.A (Hindi), Students are able to:

1. To understand the basic concept and subject of Hindi & its origin
2. To make or not the importance of subject Hindi & its Branches.
3. To understand various aspect of Hindi literature with a process to reach method and giving new mode and direction.
4. To make a attempt in different area and theory such as vocabulary and vice versa
5. To understand in the Literature more in a border areas then Mary confined to subject.
6. To know about Hindi literature its roots cause perspectives and methods.
7. Elaborating and understanding its philosophical methods of Hindi Literature.
8. Evaluating the concept of Hindi from past to present and making the society more closely through literature.

Program Outcomes B.A.

1. The student secure knowledge in the field of Social Science, literature and humanities which make them sensitive and sensible enough.
2. The B.A. graduates will be acquainted with the social, economic, historical, geographical, political, ideological and philosophical tradition and thinking
3. The program also empowers the graduates to appear for various competitive examinations or choose the post graduate program of their choice.
4. The B.A. program enables the students to acquire the knowledge with human values framing the base to deal with various problems in life with courage and humanity.
5. The students will be ignited enough to thick and act over for the solution of various issues prevailed in the human life to make this world better than ever.
6. Program provides the base to the responsible citizen.
7. A graduate student in arts/social sciences/humanities shall be confident to speak, write, read, listen and understand the English language and one or more Indian languages.
8. Program Develops clear, rational and progressive thinking.
Participating in decision-making concerning the society and upholding
National development, integrity, unity and fraternity.

B.A. Hindi

Program Specific Outcomes

1. Knowledge about Political system of the nation.
2. Study of national and international political affairs.
3. Study from competitive examination point of view.
4. Understanding the government mechanism, its functions, duties and responsibilities.
5. Creating appropriate and efficient Political leaders.
6. Getting knowledge of political law.

7. Getting knowledge of Constitution of India.

Course Outcomes

Class: - F.Y.B.A. (Sem. I)

Paper Name:-Optional Hindi (Paper I)

On completion of the course, students are able to

1. To able to understand 'Mahabharata Ki Ek Saanj' by Bharatbhushan Agrawal
2. To able to understand the eassy by Kubernath Roy.
3. To able to understand the stories by Kamaleshwar and Udayprakash.
4. To able to understand the stories by Sudha Arora and Yashpal

Class: - F.Y.B.A. (Sem. II)

Paper Name:-Optional Hindi (Paper II)

On completion of the course, students are able to

1. To able to understand the eassy by Addhyapak Purnasingh.
2. To able to understand the one act play by Jagadishchandra Mathur
3. To able to understand novel by Bhagwaticharan Varma.
4. To able to understand the characters in Chitrlekha Novel.

Class: - S.Y.B.A.(Sem. III)

Paper Name:-Functional Hindi

On completion of the course, students are able to

- 1.To able to Understand the meaning, concept and importance of Functional Hindi.
2. To able to understand various forms of Functional Hindi according to its area of application
3. To able to understand the importance of translation
4. To able to understand various forms of writing in media

Class: - S.Y.B.A. (Sem. IV)

Paper Name:-Functional Hindi

On completion of the course, students are able to

1. To able to understand various forms of Functional Hindi language relating to internet.
2. To able to understand use of Functional Hindi language for newspaper, cinema and radio.
3. To able to understand the concept of Right to information.
4. To able to understand the concept of fundamental rights of Indian Constitution.

Class: -T.Y.B.A. (Sem. V)

Paper Name:-History of Hindi literature

On completion of the course, students are able to

1. To able to understand the origin of Hindi language and its literature.
2. To able to understand Identifying the dialects of Hindi language family.
3. To able to Analyse the development of Khariboli Hindi.
4. To able to understand the concept of history of literature.

Class: -T.Y.B.A. (Sem. VI)

Paper Name:-History of Hindi literature

On completion of the course, students are able to

1. To able to understand the basis of the classification of Hindi literature.
2. To able to understand the importance and basis of the names given to each period of Hindi literature.
3. To able to understand the features of Adikal, Bhakti kal, Ritikal and Adhunikkal, in context of socio - cultural and political condition of that period.
4. To able to understand the reason of emergence of Adhunikkal in Hindi literature.

Class: -T.Y.B.A. (Sem. V)

Paper Name:-Functional Hindi

On completion of the course, students are able to

1. To able to understand the concept of information technology.
2. To able to use study material from websites of Hindi literature
3. To able to understand the importance and problems of information technology.
4. To able to understand the role of information technology in employment generation.

Class: -T.Y.B.A. (Sem. VI)

Paper Name:-Functional Hindi

On completion of the course, students are able to

1. To able to understand the importance of social media.
2. To able to understand the impact of social media on society.
3. To able to understand the relation between social media and law.
4. To able to understand the problems of social media and their remedies.

Class: -T.Y.B.A. (Sem. V)

Paper Name:-Linguistic, Hindi language and Hindi grammar.

On completion of the course, students are able to

1. To able to understand the concepts of linguistic.
2. To able to understand the different flows of Hindi language (Rajbhasha, Bolibhasha)
3. To able to understand the introductory concepts of Hindi grammar.
4. To able to understand the importance of linguistic.

Class: -T.Y.B.A. (Sem. VI)

Paper Name:-Linguistic, Hindi language and Hindi grammar.

On completion of the course, students are able to

1. To able to understand the ancient and medieval period languages.
2. To able to understand the origin and development of Hindi language.
3. To able to understand the different forms of Khadiboli (Hindi, Urdu)
4. To able to understand the introductory concepts of Hindi grammar.

CO Attainment:

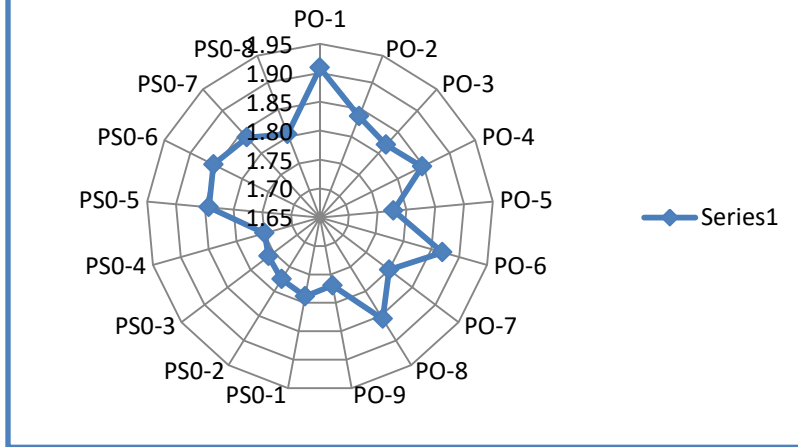
CourseNo	Course Name	CO attainment score	Level	Status
Paper-IV	<i>History of hindi literature Paper-IV</i>	3	Level-3	Attained
Paper-V	<i>Post Independent hindi Literature Paper-V</i>	2	Level-2	Attained
Paper-VI	<i>information technology in hindi-VI</i>	1.4	Level-1	Attained
Paper-VII	<i>Literary criticism prosedy & Rhetorics-VII</i>	3	Level-3	Attained
Paper-VIII	<i>Linguistics hindi language & grammar-VIII</i>	2	Level-2	Attained
Paper-IX	Ideological background of modern hindi literature Paper-IX	1.4	Level-1	Attained
Paper-IV	<i>History of Modern hindi literature Paper-IV</i>	2	Level-2	Attained
Paper-V	<i>History of Modern hindi literature Paper-IV</i>	0	Level-0	Not Attained
Paper-VI	<i>Social Meadia Paper-Vi</i>	1.4	Level-1	Attained
Paper-VII	<i>Social Meadia Paper-Vi</i>	2	Level-2	Attained
Paper-VIII	<i>Linguistics hindi language & grammar-VIII</i>	3	Level-3	Attained

Paper-IX	Ideological background of modern hindi literature Paper-IX	0.6	Level-0	Not Attained
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PO Attainment

PO/PSO	Outcome Value (2022-23)	Level	Attainment
PO1	1.91	Good	Attained
PO2	1.84	Good	Attained
PO3	1.82	Good	Attained
PO4	1.85	Good	Attained
PO5	1.78	Good	Attained
PO6	1.87	Good	Attained
PO7	1.80	Good	Attained
PO8	1.86	Good	Attained
PO9	1.77	Good	Attained
PSO1	1.79	Good	Attained
PSO2	1.78	Good	Attained
PSO3	1.76	Good	Attained
PSO4	1.75	Good	Attained
PSO5	1.84	Good	Attained
PSO6	1.86	Good	Attained
PSO7	1.84	Good	Attained
PSO8	1.80	Good	Attained

PO, PSO Attainment Chart



Remedial Actions Taken: Nil