

Role of Classroom Learning Environment in Students' Engagement at O Levels

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Abstract: The objectives of this study were to explore the elements of classroom learning environment at O Levels, to measure the student's engagement at o levels and to investigate the role of classroom learning environment in students' engagement at o levels. The conceptual framework of this research was based on classroom learning environment model by Hussain (2011) and Students' Engagement Model by Lam et al. (2014). The model of classroom learning environment was based on three dimensions i.e. role of teachers, role of students' responsibilities and classroom facilities. Furthermore, students' engagement model was based on three dimensions i.e. affective engagement, behavioral engagement and cognitive engagement as well. Researcher chosen quantitative research approach, predictive correlational research design and survey method. For the current study, population was based on male and female students of O-levels, Tehsil Rawalpindi (session: 2024-2025). Researcher chosen convenient sampling technique and collected data from 91 students as per convenience. For data collection, researcher adapted two types of questionnaires i.e. classroom learning environment questionnaire and student's engagement questionnaire. Data was analyzed by using SPSS 20th version. Researcher delimited this study in O-levels students Tehsil Rawalpindi. Findings indicated the most founding element in class was classroom facilities. It also indicated that classroom learning environment had negative role in students' engagement at O-levels. On the basis of findings, it was recommended that teachers may give group work to students so it will help to increase students' interaction and competition among students and help in students' engagement.

Key Words: School Management Committees (SMCs), School Administration, Educational Governance, Community Participation

Introduction

Classroom is the place where students spend 6 to 7 hours a day with their age fellows and learn different knowledge and skills. According to Akomolafe and Adesua (2014), classroom is an effective and powerful tool of socialization where students from different socio-economics status come and socialize with each other. Classrooms can be categorized from small numbers to larger number of students. Structuring a good classroom setting put a great impact on students' learning. It helps to absorb the information and stay happy but if class is not managed properly, it became the reason of torment for students and teachers as well (Wahyono, 2024). Positive and conducive classroom environment put great impact on students' personality, their engagement and academic achievement too. Classroom learning environment depends on the interaction of the pupils, their behavior with teachers and class infrastructure. Khatimah (2021) cited that conducive learning environment is depend on the students' interaction in the class and in conducive learning environment infrastructure and facilities are very important. According to Qamar and Nawaz (2021) that physical

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environment of the class put great impact on students' engagement and it includes infrastructure, classroom lightening, artwork and coloration of the class and electricity too. Furthermore, he indicated that unmotivated teachers influence very badly to their students and they do not take interest in studies. Students' engagement can be judge through students' active participation, academic achievement and involvement in the class. As Kuh (2009) cited by Subramainan and Mahmoud (2020) described students' engagement as participation of students in educational activities which lead towards the outcomes. In other words, students' engagement can be guessed through students' level of participation the class in different activities, enthusiasm and completion of task timely. The target of the classroom must be to increase students' engagement instead of hindrance. Those teachers who create the environment where students can participate actively, students feel relatedness, comfort and autonomy, they engaged much in the discussion of the class (Jordano, n.Jordanod).

Classroom environment put great impact on students' engagement as if students will get all the facilities in the classroom, having good interaction with their peers and teachers, teachers will teach in a well-mannered way and listen students' problem so it would automatically increase students' engagement in the class.

Rationale of the Study

Different environmental factors play a key role in motivating the students toward learning. If social interaction between teacher and students, learners and learners is going well, in classroom there is nothing any kind of distractor and enough lightening is available so these things help in students' learning and engagement (Khatimah, 2021). As Kamoet and Mbirithi (2024) cited that a positive and healthy classroom environment help students in their academic achievement, increase student's engagement and lead towards positive attitude in studies. Malik and Rizvi (2018) recommended that future researchers can investigate the classroom environment at elementary level and other grades. As classroom environment play significant role in students' engagement so keeping in view the importance of classroom learning environment, the researcher chosen the topic role of classroom learning environment in students' engagement at o levels.

Statement of the Problem

Classroom environment put great impact on students as students spend seven to eight hours in the class with their teachers and peers. If classroom lightening, air quality, other infrastructure, teacher-students relationship and peers' relations would be good so it will put great impact on students' engagement and students also take interest in studies. But it is common practice that teachers just focused on delivering the lectures in the class and think that they fulfilled their responsibility and not show interest in students' problems. Schools also just focus on studies of the children and do not invest money on infrastructure of the school so keeping in view this thing, researcher selected this area of study. This research was designed to explore the classroom learning environment at O-Levels, to measure the students' engagement at O-Levels and to investigate the role of classroom learning environment in students' engagement at O-Levels.

Research Objectives

The following objectives were developed by the researcher for this study:

1. To explore the elements of classroom learning environment at O-Levels.
2. To measure the students' engagement at O-Levels.
3. To investigate the role of classroom learning environment in students' engagement at O-levels.

Null Hypothesis

Ho1: There is statistically no significant role of classroom learning environment in students' engagement at O-levels.

Significance of the Study

This study would be fruitful for policy makers, school administration, teachers and students. Policy makers come to know the importance of classroom in students' engagement and they may allocate the budget for school infrastructure



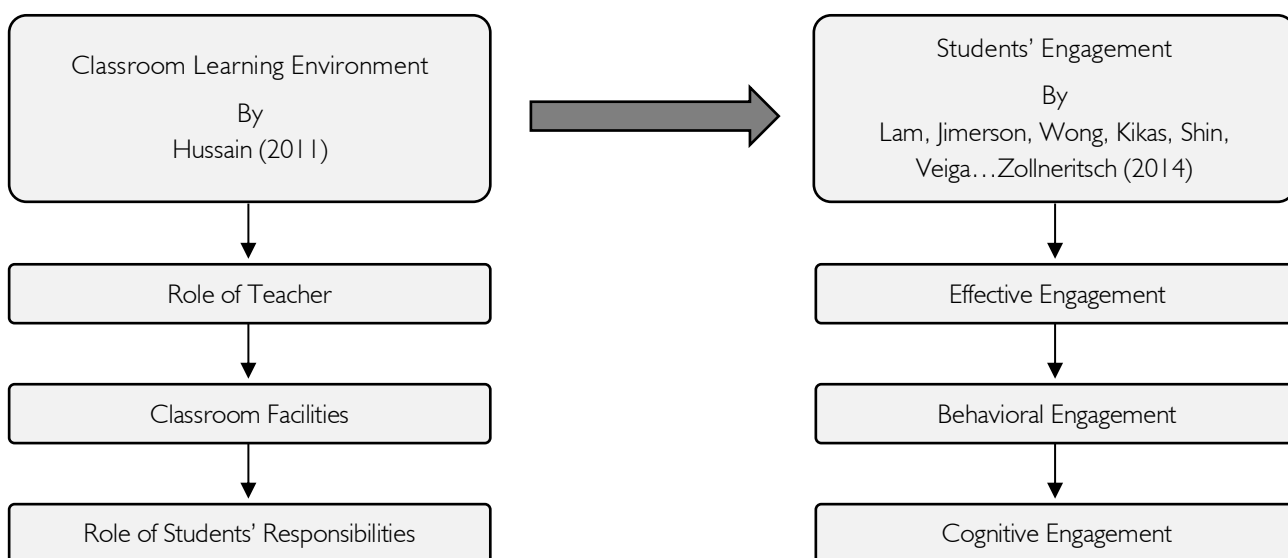
so it will enhance classroom environment. This study would be fruitful for school administration in this way that they may make sure all the basic facilities in the class are provided to the students so students may feel happy and take interest in studies. This study would be fruitful for teachers in this way that teachers may create activity-based lesson plan, friendly atmosphere in the classroom and listen students' problems patiently so it would help in students' engagement and interest in studies and students will be enthusiastic and show great result in the class. This study would be worthwhile for students as well. Students may create friendly atmosphere in the class with peers so it would help them in their studies and engagement in class learning.

Conceptual Framework

For developing conceptual framework of this study, researcher took classroom learning environment dimensions by Hussain (2011) and students' engagement dimensions by Lam, Jimerson, Wong, Kikas, Shin, Veiga...Zollneritsch (2014) were considered. The following diagram explained the direction of the study.

Figure 1

Conceptual Framework



Classroom Learning Environment Model by Hussain (2011)

Classroom learning environment model given by Hussain (2011) and it is based on three dimensions such as: role of teacher, role of students' responsibilities and classroom facilities.

1. **Role of Teacher:** Role of teacher refers teacher student's relationships, teacher's authority in the class and their way of teaching.
2. **Role of Students' Responsibilities:** Role of student's responsibilities refers students' attendance, classmates' behavior and communication skills.
3. **Classroom Facilities:** Classroom facilities refer classroom space, chairs comfortability and cleanliness of classroom.

Students' Engagement Model by Lam et al. (2014)

Students' engagement model given by Lam et al. (2014) and it is based on three dimensions such as: affective engagement, behavioral engagement and cognitive engagement.

1. **Affective Engagement:** Affective engagement refers that what are the feelings of students about learning activities and towards school as well.
2. **Behavioral Engagement:** Behavioral engagement refers students' determination towards schoolwork and participation in co-curricular activities.
3. **Cognitive Engagement:** Cognitive engagement refers the different strategies of cognition, which learner use for learning.

Literature Review

A child most of the time in classroom, and classroom is the place where child learn the different concepts which help to excel in there later life or to compete the global world. Classroom is the place where child realize that what he wants to achieve in his life. So, classroom atmosphere is very important because if atmosphere of classroom is healthy and sound, so it will enhance the student's engagement and learning but if the classroom atmosphere is conservative, then student's will not be able to engage in studied so healthy classroom is very important for students to excel in every field (Qamar & Nawaz, 2021). Ahmed et al., (2020) conducted study on effect of classroom environment for improving students' learning at secondary level in Punjab province, Pakistan so results revealed that availability of the resources in the class, good instructional classroom help to improve student's learning.

Students' engagement means the willingness, desire and need to participate in the class to be better in the learning process. Students would be engaged in the class, if classroom will fulfill their needs. Researchers are paying attention on high school student's engagement as compare to primary school students because at high level, drop-out rate increases so what are the reasons of drop out (Yang & Lamb, 2014). Students' engagement also means the levels of interest towards studies. There are affective, behavioral and cognitive factors effects on students' engagement. Affective factors cover attitude, personality, motivation and self-confidence. By considering the affective factors, teacher can make the lesson plan and activities which will encourage students to be more activate participant in the class and help in learning engagement (Gray & DiLoreto, 2016). Behavioral engagement means students participation in the classroom during lecture and co-curricular activities too. It is a multi-dimensional concept of participation if students. Meanwhile, students' involvement is the essential requirement for effective learning and engagement as well. Many studies revealed that when instructions were communicated to the students in a good way and learning environment was supportive so it showed the higher-level student's engagement in the class (Gul et al., 2022). Cognitive engagement means the study are going to give output on the given task. It also includes student's thinking about the task. Meanwhile, Sharan and Than (2008) cited by Sesmiyanti (2018) that cognitive engagement of students are related to the self-regulation learning and motivation that how students engaged themselves and motivate towards learning. Furthermore, it is also indicated Sesmiyanti (2018) in his research work, that students who engaged in cognitive learning engagement, they deeply think about the information and make understanding about the given information.

It is concluded from the above discussion that classroom learning environment play an important and significant role on students affective, behavioral and cognitive engagement. Many studies are conducted in Pakistan to measure the classroom learning environment on students' academic achievement and learning, but very few studies conducted on engagement, so the researcher want to fill this gap by identifying the role of classroom learning environment in student's engagement at O-levels.

Methodology

Number of paradigms are identified by the researchers in education field but Kivunja and Kuyini (2017) noted that Candy (1989) one of the educationists, classified all paradigms in three groups such as: positivist, interpretivist or critical paradigms. According to Saunders, P. Lewis and A. Thornhill (2016) Positivist research is used the already existed theory to develop hypotheses and later these are hypotheses are tested to confirm its acceptance or rejection so the researcher chosen positivist philosophical approach in this research.

For this research study, researcher used quantitative research approach. In quantitative research, data is gathered through standardized instrument. It aims to get the data in numbers and generalize the results from a sample in different perspectives (Ghanad, 2023).

According to Khanday and Khanam (2019) Research design normally depends on the research questions that whether we are getting the answers to research questions accurately or not. It is based on the types of analysis which is carry out to get the desired results So keeping in view the importance of research design, research chosen prediction correlational research design. In prediction correlational research design, researcher predict or forecast the outcome or criterion variable. In this research, researcher chosen one or more than one predicts variable and an outcome variable. The researcher forecast the future performance (Devi et al., 2022).

Method is the way through which one collect data. As Gounder (2012) cited in his work that researchers collected data through survey, case study, Laboratory experiment or field experiment method. So, keeping in view the nature of research, the researcher used survey method to collect data. Surveys are the famous and best method to answer the descriptive, exploratory research as well. It enables research to make comparison and conclude correlations with the gathered data. Multiple methods covered by the survey research such as questionnaire, observations and interviews as well. So, the researcher used questionnaire to collect the data from respondents to predict the future performance (Murphy, 2023).

Population means a group of people on whom the research wants to apply the findings of the research (Shukla, 2020). Population of this study was based on the students of O-levels, Tehsil Rawalpindi, session (2024-2025). There was total 264 students enrolled in O-levels, among which there were 100 female students and 164 were male students.

The method to choose the sample from the population is known as sampling. There are different techniques to choose the sample but by considering the ease, researcher chosen convenient sampling technique to select the sample. According to Rahi (2017) that in convenience sampling, researcher collect the data without making effort because the sample, which is available, researcher collect data from them. As researcher used convenient sampling technique so as per the convenience, research collected data from 91 students.

For this research work, researcher adapted two types of Questionnaires. One Questionnaire was based on classroom learning environment, adapted from Hussain (2011) and dimensions were (Role of class Teachers, role of Students' Responsibilities and Classroom Facilities). Meanwhile, the other Questionnaire was based on Student's engagement, adapted from Lam et al. (2014) and dimensions were (Affective Engagement, Behavioral Engagement and Cognitive engagement).

Table 1
List of statements in Classroom Learning Environment Questionnaire

Variable	Sr.No	Sub-Dimensions	Total statements in each Dimension
Classroom Learning Environment			23
	1.	Role of Class Teachers	7
	2.	Role of Students' Responsibilities	7
	3.	Classroom Facilities	9

Table 1 revealed that Classroom Learning Environment Questionnaire was based on 23 statements and three dimensions.

Table 2
List of statements in Student's Engagement Questionnaire

Variable	Sr.No	Sub-Dimensions	Total statements in each Dimension
Student's Engagement			27
	1.	Affective Engagement	7
	2.	Behavioral Engagement	7
	3.	Cognitive Engagement	7

Table 2 revealed that Student's Engagement Questionnaire was based on 27 statements and three dimensions.

Table 3*Cronbach Alpha Reliability of Classroom Learning Environment Questionnaire (n=91)*

Variable	Sr. No	Sub-Dimensions	Total No of items in each section	Cronbach Alpha Reliability
Classroom Learning Environment			23	.684
	1	Role of Class Teachers	7	.381
	2	Role of Students' Responsibilities	7	.663
	3	Classroom Facilities	9	.617

Table 3 revealed the reliability of classroom learning environment questionnaire, which was found (.684). furthermore, researcher explored the reliability of sub-dimensions of classroom learning environment, questionnaire, which were role of class teachers, role of students' responsibilities and classroom facilities and their reliability was .381, .663 and .617.

Table 4*Inter-section correlation of Classroom Learning Environment (n=91)*

Sections	Role of Class Teachers	Role of Students' Responsibilities	Classroom Facilities	Classroom Learning Environment
Role of Class Teachers	1			
Role of Students' Responsibilities	.130	1		
Classroom Facilities	.593**	.098	1	
Classroom Learning Environment	.851**	.490**	.802**	1

** Correlation is significant at the 0.01 level (2-tailed)

Table 4 revealed inter-section correlation of classroom learning environment. Where the highest correlation was found between classroom learning environment and role of class teachers (.851**) and the lowest correlation was found between classroom facilities and role of students' responsibilities (.098).

Table 5*Item-Total correlation of Classroom Learning Environment Questionnaire (n=91)*

Items/Codes	r	Items/Codes	r	Items/Codes	r
Q1/RC1	.508**	Q9/RS2	.097	Q17/CF3	.678**
Q2/RC2	.356*	Q10/RS3	.222	Q18/CF4	.398**
Q3/RC3	.572**	Q11/RS4	.398**	Q19/CF5	.404**
Q4/RC4	.555**	Q12/RS5	.352*	Q20/CF6	.425**
Q5/RC5	.469**	Q13/RS6	.403**	Q21/CF7	.416**
Q6/RC6	.423**	Q14/RS7	.373*	Q22/CF8	.346**
Q7/RC7	.436**	Q15/CF1	.423**	Q23/CF9	.087
Q8/RS1	.132	Q16/CF2	.262		

Table 5 revealed the item-total correlation of all items of classroom learning environment questionnaire. The highest correlation was found of item Q17/CF3 (.678**) and the lowest correlation was found of item Q23/CF9 (.087)

Table 6
Cronbach Alpha Reliability of Student's Engagement Questionnaire (n=91)

Variable	Sr. No	Sub-Dimensions	Total No of items in each section	Cronbach Alpha Reliability
Student's Engagement			27	.840
	1.	Affective Engagement	9	.778
	2.	Behavioral Engagement	9	.778
	3.	Cognitive Engagement	9	.784

Table 6 revealed the reliability of Student's Engagement questionnaire, which was found (.840). Furthermore, researcher explored the reliability of sub-dimensions of student's engagement questionnaire, which were Affective engagement, behavioral engagement and cognitive engagement and their reliability was .778, .778 and .784.

Table 7
Inter-section correlation of Student's Engagement Questionnaire (n=91)

Sections	Affective Engagement	Behavioral Engagement	Cognitive Engagement	Student's Engagement
Affective Engagement	1			
Behavioral Engagement	.479**	1		
Cognitive Engagement	.054	.363**	1	
Student's Engagement	.706**	.846**	.636*	1

** Correlation is significant at the 0.01 level (2-tailed)

Table 7 revealed inter-section correlation of Student's engagement questionnaire. Where the highest correlation was found between student's engagement and behavioral engagement (.846**) and the lowest correlation was found between cognitive engagement and affective engagement (.054).

Table 8
Item-Total correlation of Student's Engagement Questionnaire (n=91)

Items/Codes	r	Items/Codes	r	Items/Codes	r
Q1/AE1	.565**	Q10/AE10	.439**	Q19/AE19	.380*
Q2/AE2	.599**	Q11/AE11	.632**	Q20/AE20	.274
Q3/AE3	.618**	Q12/AE12	.632**	Q21/AE21	.324*
Q4/AE44	.481**	Q13/AE13	.355**	Q22/AE22	.294
Q5/AE5	.280	Q14/AE14	.301*	Q23/AE23	.408**
Q6/AE6	.359*	Q15/AE15	.549**	Q24/AE34	.348*
Q7/AE7	.581**	Q16/AE16	.598**	Q25/AE25	.416**
Q8/AE8	.509**	Q17/AE17	.673**	Q26/AE26	.386*
Q9/AE9	.464**	Q18/AE18	.423**	Q27/AE27	.613**

Table No. 8 revealed the item-total correlation of all items of student's Engagement questionnaire. The highest correlation was found of item Q17/AE17 (.673**) and the lowest correlation was found of item Q14/AE20 (.274).

Objective No. I: To explore the elements of classroom learning environment at O Levels.

Table 9
Classroom Learning Environment (n=91)

Sr.No	Dimensions	n	Mean	Mean of Mean	Status	Std Deviation
1.	Role of Class Teachers	91	18.10	3	Neutral	7.563
2.	Role of Students' Responsibilities	91	17.64	3	Neutral	5.304
3.	Classroom Facilities	91	31.09	3	Neutral	6.310

Table 9 indicated the mean score of elements of classrooms learning environment. Total respondents were 91 and the mean score of roles of class teachers' dimension was found (18.10), role of students' responsibilities was found (17.64) and the mean score of classroom facilities was found (31.09). It was found that highest mean score was possessed by classroom facilities (31.09) and the lowest mean score was possessed by role of students' responsibilities.

Objective No. 2: To measure the students' engagement at O-Levels.

Table 10

Levels of Student's Engagement (n=91)

Sr.no	Score	Level of Student's Engagement	N	Percentage
1.	27-62	Below Average	6	7%
2.	63-98	Average	63	69%
3.	99-135	Above Average	22	24%

Table 10 indicated the levels of student's engagement. Results revealed that mostly students (69%) fall in average level learning engagement at school while 24% students fall in above average category and 7% students fall in below average category.

Objective No 3: To investigate the role of classroom learning environment in students' engagement at o levels.

Table 11

Role of classroom Learning Environment in Students' Engagement (n=91)

Independent Variable	Dependent Variable	B (Coefficient)	T	Sig.	R Square
Classroom Learning Environment	Student's Engagement	-.374	-3.406	.001	.115

**P < 0.01, *P < 0.05

Table 11 indicated the role of classroom learning environment on student's engagement. Results revealed that independent variable classroom learning environment had 11.5 % role in students' engagement. On the other hand, beta value ($\beta = -.374$) was negative and statistically not significant at 0.01 level. So, hypothesis **Ho1** is failed to reject.

Conclusions

Conclusion is written on the basis of results.

- ▶ **Objective No. 1** was to explore the elements of classroom learning environment at O Levels, so it was concluded that components of classroom learning environment were found on different level. As the highest mean score was found of classroom facilities and the lowest mean score was found of role of students' responsibilities (Finding 1).
- ▶ **Objective No. 2** was to measure the students' engagement at O Levels, so it was concluded that mostly students were engaged in learning at average level (Finding 2).
- ▶ **Objective No. 3** was to investigate the role of classroom learning environment in students' engagement at o levels. So, it was concluded that classroom learning environment had negative role in students' engagement (Finding 3).

Discussion

The research study was to investigate the role of Classroom Learning Environment on Students' Engagement at O Levels. The first objective of this study was to explore the elements of classroom learning environment at o-levels. So, the results indicated that classroom learning environment elements were found at different level. The mean value of classroom facilities was high as compare to role of class teachers and role of students' responsibilities. Teachers who show role model and demonstrate good behavior and attitude towards learning, it enhances student's motivation and students learning engagement. Meanwhile, if classmates of student also possessed good behavior and show interest in studies, it also increases students learning engagement (Khatimah, 2021). Furthermore, it is indicated that teachers who

provide clear instructions in the class and encourage for collaborative work, it helps to engage the students in learning (Cambay & Panglinawan, 2024).

The second objective of this study was to measure the level of student's engagement. Results revealed that mostly students were engaged in classroom at average level. Yang et al., (2014) examined the factors influencing classroom behavioral engagement of first year students so the results revealed that those teachers who had good relationship with students so students showed engagement in classroom while those students who had conflict with students, they were disengaged in the class. Furthermore, Konard et al. (2024) did research on classroom climate and students-teacher relationships so the results indicated less positive classroom environment so they supported this statement in this way that at the age of adolescence, the students become discern about peers. They make just selective peers from outside the class and have closer bond to them.

The third objective of this study was to investigate the role of classroom learning environment in students' engagement so the results revealed that classroom learning environment played a negative role in student's engagement. Research revealed that conducive classroom learning environment in term of teacher's support as a major indicator put great impact on student's engagement. Furthermore, it is indicated that teacher and peer support also help to enhance high learning engagement (Ye, 2024).

Recommendation

On the basis of findings, researcher has suggested a few recommendations are given below:

1. Mean score of classroom facilities element was found highest as compared to role of teachers and students' responsibilities. So, it was recommended that:
 - a. Teachers may plan the activity-based lesson plan in the class for the active participation of students as it will help in students' engagement (Role of Teachers).
 - b. Teachers may give group work to students so it will help to increase students' interaction and competition among students and help in student's engagement (Role of student's responsibilities).
2. It was indicated that mostly students were engaged at average level in classroom learning environment. So, it was recommended that:
 - a. Teachers may give five minutes in the start of the class to their students to listen and solve their problems. So, it will help to enhance student's interest in class.
 - b. School administration may arrange workshops for the teachers training to enhance their teaching skills.
3. It was revealed that classroom learning environment played negative role in students' learning engagement. So, it was recommended that:
 - a. Schools need to provide comfortable chairs, tables, enough lightening in the class, fans, water facility and racks too so that students feel relax and happy. It would help in student's engagement.
 - b. Schools may arrange collaborative activities in each classroom so it would help to create friendly and conducive environment among students.
 - c. Schools may arrange monthly workshops for teachers to enhance their teaching skills.
 - d. School principal may take observation one in a week of every teacher to judge their teaching methodology so it would help to make their instructional methodology better.

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