Journal of Pedagogy, Andragogy and Heutagogy in Academic Practice (JPAHAP)
ISSN: 2708-261X, *Vol 5. No.2 (2024) pp 1-14* http://uonjournals.uonbi.ac.ke/ojs/index.php/pedagogy

LEARNER PREPAREDNESS FOR ICT INTEGRATION ON ACHIEVEMENT IN ENGLISH LANGUAGE PHONETICS AMONG SECONDARY SCHOOL LEARNERS, LIKUYANI, KENYA.

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ABSTRACT

The study explored the Influence of learner preparedness for Information Communication and Technology (ICT) integration on achievement in English Language Phonetics in secondary schools in Likuyani, Kenya. The study's objective was to assess the Influence of learner preparedness for ICT integration on achievement in English Language Phonetics. The sample for the study comprised four secondary schools and 200 from two learners. Stratified and simple random sampling was used to select schools while learners were purposively determined.

Solomon Four Group design by Solomon (1949) was adopted and anchored on the Unified Theory of Acceptance and Use of Technology by Venkatesh, Moris, Davis, and Davis (2003). Questionnaires and interview schedules were used to collect views, and the observation schedules determined the extent to which ICT is applied in phonation learning. Data collected was coded and analyzed using Statistical Package for Social Sciences, version 25.0.

Data analysis yielded cross-tabulations, frequency distributions, and multiple linear regression, which actuated the interpretation and discussion of results. A linear regression model was used to demonstrate the significance of the relationship between dependent and independent variables.

Additionally, English Language Phonetics Pre-test and Post-test achievement results affirmed statistically significant variance between post-test scores of the Control and Experimental cohorts. Findings unearthed a significantly intensified relationship between Learner Preparedness and achievement in ELP at (B=0.116, p=0.032). Supported by these findings, the study concluded that adequate learner preparedness for ICT integration enhances achievement in ELP. This study recommends appropriate preparedness for technology usage in English language phonetics classes, which has a likelihood of improved oral skills.

Keywords: Achievement; English language phonetics; ICT integration; Learner preparedness;

INTRODUCTION

Entrenching appropriate Information Communication and Technology into language classes marks an opportune cradle for learner-centered experiences, which may actuate internalization of English sounds for practical communication skills. Appropriate usage of Information Communication Technology (ICT) may provide an interactive environment for language learners, intensifying phonation exercises for improved pronunciation. As averred in Kvasyuk et al. (2021), consistent verbalization practice, realized by the provision of suitable technology in class, tends to boost understanding of English sounds among learners.

Notably, the attainment of intelligible pronunciation may be anchored on a proper understanding of English language phonetics (ELP), which is likely strengthened by the effective adoption of ICT among learners. Arifin et al. (2020) suggest that the innovative application of top-notch gadgets in ELP is most likely to catapult the perception and production of sounds for comprehensible communication. In furtherance, with a universal target of Vision 2030, digital competence becomes mandatory for rapid economic achievement, and a suitably digitized learning arena can accelerate this. In resonance, Mavu (2021) notes that Kenya's National Policy on ICT is mandated by ensuring customized content for schools, leveraging technological devices in class, promoting ICT awareness among learners, and advancing effective technological adoption in the educational sphere. These constructs of ICT policy underscore the indispensable role that learner preparedness tends to play as a critical variable in productive ICT-embedded learning. On the other hand, cases of unstable pedagogical structures may limit access to exceptional learning experiences, further limiting communication and collaboration skills.

Relatedly, adequate learner preparedness, as an integral component of effective ICT integration in class, will likely enhance the attainment of English Language Phonetics (ELP) for comprehensible pronunciation. According to Muchui, Ngaruiya, Ganira, and Kinyua (2022), learner readiness comprises sufficient skills and an appropriate attitude toward ICT usage for sustained learning. To expound on that, basic skills, ICT usage, and learner attitude as components of preparedness may encourage learner utilization of educational technology, accentuating focus on English phonation for competent communication skills. On the other hand, when learners are not ready for technology usage in class, sufficient practice in vowel production and perception tends to be limited, with further weakening of oration skills.

According to a study by Kiyeng, Kimamo, and Njoroge (2021) on the effect of ICT adoption on learner achievement in subject areas, adequate preparedness tends to boost engagement with educational technology for raised learning outcomes. The study, conducted in Likuyani, Kenya, on secondary school learners using a mixed method approach, underscored the role of ICT readiness in class for raised achievement across learning areas. However, Anyiendah, Odundo, and Ganira (2023) observe that although usage of educational technology tends to heighten the comprehensibility of English language concepts, ineffective adoption may be occasioned by unstably structured ICT preparedness. Premised on the suggested centrality of readiness for technology in a language class, this study sought to establish the Influence of learner preparedness for ICT-enhanced pedagogy on achievement in ELP for raised intelligibility in pronunciation.

Proper employment of essential skills when engaging with technology may actuate the acquisition of significant oral skills for communication. Adequate technological skills among learners may encourage constructive exercises in language learning for noteworthy sound articulation. As averred by Alamrani (2020), basic skills are digital literacies requisite for efficient manipulation of educational technology, leading to raised scores in speaking tests.

On the other hand, restricted digital awareness may slacken the acquirement of English vowels for fluent speech patterns. Similarly, it is voiced in Roman and Haripriya (2021) that impaired application of technology, occasioned by lower ICT competence, poses a consequential challenge to the maximal attainment of comprehensible pronunciation. More still, Ben, Dahmani, and Ragni (2022) argue that learners' basic ICT skills tend to raise levels of motivation and engagement in ELP classes for achievement in pronunciation. Conversely, Atika et al. (2021) suggest that less balanced ICT literacy may impair learner perception of pedagogical technology, with a resultant weaker realization of exemplary phonation skills. Basic skills, assessed in terms of hardware manipulation, software usage, and internet access, were examined as key dimensions most likely to enhance learner achievement in ELP.

Meaningful application of technology in language class may actuate the acquisition of exceptional oral skills for intelligible communication. Educational technology provides learners with audio and visual content, which enable collaborative learning, further leading to exceptional accomplishment in English phonetics. Relatedly, Amini and Oluyide (2020) suggest that frequent usage of technology in class is likely to promote the acquisition of intelligible consonant pronunciation for well-

articulated verbal presentations. On the other hand, subverted technological employment may negatively steer learners' attainment of pronunciation prowess for suitable speaking skills. This observation is reiterated by Perdomo et al. (2022) that impaired integration of ICT may destabilize learner engagement with audio-visual devices, leading to lower achievement in language skills. Still, Alakrash et al. (2022) assert that the proper arrangement of educational technology is likely to scaffold ICT usage in language classes for the accelerated realization of minimal pairs in English language pronunciation.

In view of Byiringiro and Mukamazimpaka (2022), although educational technology tends to refocus pedagogy to learner-centered activities, inadequate ICT skills tend to derail collaboration in language learning, further constraining effective oration skills. Therefore, ICT usage as a construct of learner preparedness was measured in terms of learner engagement in ELP research, audio-visual activities, and collaborative learning using appropriate educational technology.

Learners' positive attitude towards technological resources tends to encourage productive interactions for a broad conceptualization of English language sounds. Additionally, exceptional oral skills are realized when learners' favorable cognitive perception of ICT promotes autonomous class activities for accomplished English sound production. In view of Al Shammari (2020), learner self-efficacy, which enhances perception towards ICT usage, is likely to heighten interest in technology-induced ELP classes for the rapid conceptualization of consonants. On a countering note, Amsal et al. (2020) voice that learner technological appreciation may become negatively skewed due to unfavorable Influence by other technology users. It should be noted that reliably constituted techno-structures may enhance learner perception of ICT integration in class for noteworthy verbal expressions. In concordance, Sariani et al. (2022) argue that learner accessibility to suitable software and hardware structures is likely to boost the rating of ICT applications in learning English language vowels. Raised technological rating, an indicator of learner behavioral reaction towards learning devices, may actuate seamless ICT integration in ELP class, with subsequent comprehensible vowel pronunciation.

However, Poudel (2022) established that inappropriately established technological structures tend to negatively orient learner attitudes towards ICT adoption, leading to impaired acquisition of English speech patterns. To this end, learner attitude as a dimension of preparedness for ICT-induced ELP pedagogy was gauged based on suitable cognitive perception, affective component,

and behavioral aspect, which may support the productive acquisition of English oral skills.

English Language Phonetics studies the production of English speech sounds and subsequent perception by the listener. As expounded in Ndung'u (2013), production, which is articulation, involves the study of air movement over speech organs resulting in the realization of phones; auditory highlights the ability to hear English segments and decode the meaning of utterance while acoustic phonetics examines how sound is sent from speaker to listener through waves, effecting productive communication. Appropriate ELP skills may most likely raise learner pronunciation awareness for effective conversational skills.

This profound relationship between pronunciation and phonetics is underscored by Tatsenko (2020), who states that phonetics is the study of sounds in terms of physical characteristics, manner, and place of assibilation, while pronunciation is the manner of speech sound articulation for effective interlocution. The teaching of ELP can be traced back to the classical period, during which Grammar translation was embraced in English Language teaching. During the 1950s and 1960s, English language teaching was based on pattern drills in the Audio Lingual method, emphasizing contextual language use with subsequent narrowly acquired phone awareness. According to Priya and Prasanth (2020), further revolution in English language pedagogy was sparked by Henry Sweet in the late 19th century, during which the relationship between sound production and vocal cords was analyzed, enhancing literacy in phonation skills. Previously, ELP was concretized in Gimson (1962) by outlining the teaching of English pronunciation for intelligible assibilation. Segmental and supra-segmental features were underscored as central in predicting productive communication, with the further establishment of innovative ways of ELP instruction for comprehensible pronunciation. Relatedly, Ganira**'s** (2022) study on adopting STEAM Development Strategies suggests inventive integration of devices in ELP classes to enhance learner achievement in ELP.

On the other hand, shaky technological embedment in class is likely to constrain adequate mastery of English sounds. This suggestion is mirrored in Yermekkyzy (2022), that inadequate balancing of suitable ICT in class tends to limit access to wide pronunciation practice leading to narrow awareness of English sound production. In summation, teaching and learning ELP plays a vital role in boosting awareness of vowels and consonants in terms of perception and production for seamless interlocution.

Suitable ICT incorporation in pedagogical institutions may enhance learner acquisition

of English language phonetics for improved speaking skills. Premised on this, leaner preparedness, as an integral component of productive ICT integration in class, tends to support learners' comprehensive acquisition of ELP skills. However, the imbalanced provision of this pivotal dimension in institutions tends to slow down the realization of English pronunciation, which may slacken accomplishments in exceptional oral skills performance. In addition, innovative balancing of requisite basic skills, ICT usage, and learner attitude, which constitute learner preparedness, may stabilize ICT integration in class, with the likelihood of raised learner achievement in vowel sound perception.

However, in case of unregularized learner readiness through inadequate ICT literacy, regular adoption of technology, and favorable preconception of instructional technology, learner understanding of English phones is most likely compromised, leading to weaker ability in verbal exchanges. Although sufficient learner preparedness for educational technology tends to boost achievement across subject areas, this has yet to be instituted in Likuyani, resulting in limited acquisition of English pronunciation. This is anchored on the proposition that insufficient learner readiness for ICT tends to limit the acquisition of comprehensible English phonation skills for exemplary grades in national exams achievement. Therefore, this study sought to address gaps in language learning processes occasioned by inadequate learner preparedness for ICT-induced classes, which may subsequently revolutionize ELP pedagogy for enhanced achievement in successful communications skills.

PURPOSE OF THE STUDY

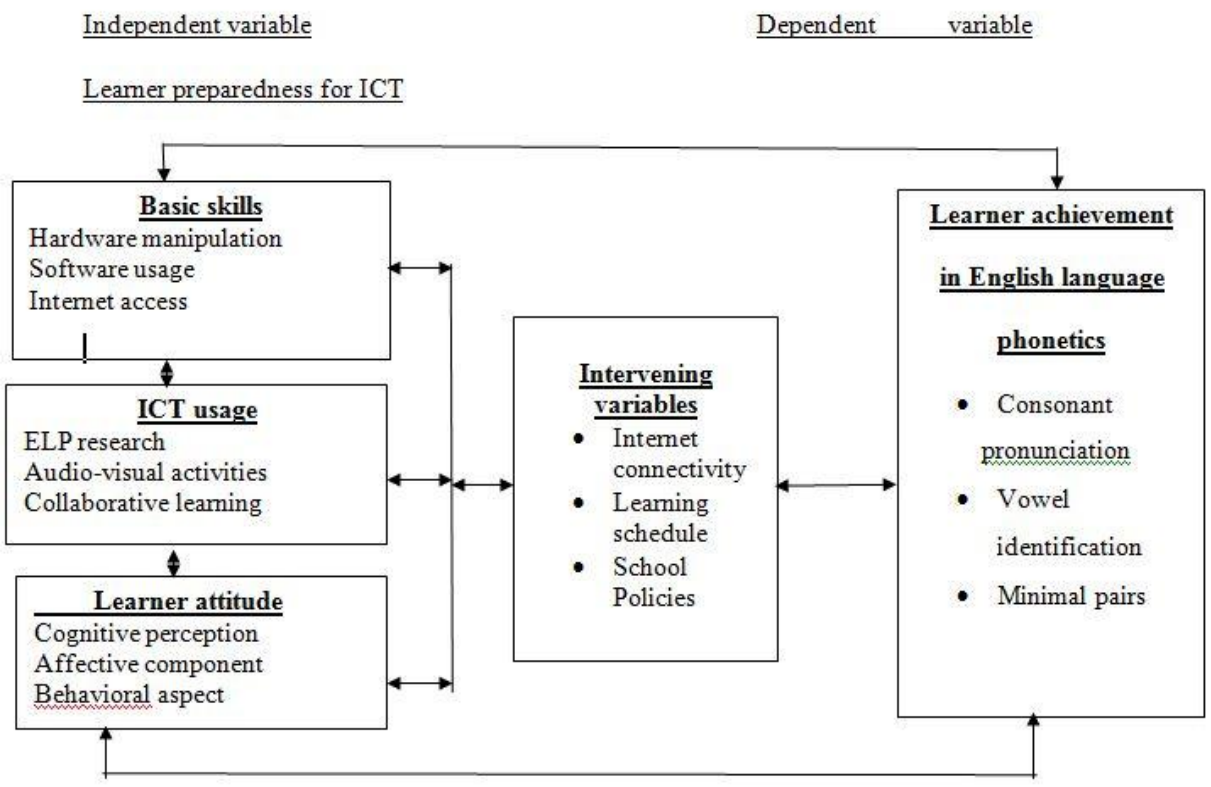
This study aims to establish the influence of ICT integration on learner achievement in English language phonetics in Likuyani, Kenya.

THEORETICAL APPROACH

This study is supported by the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh, Moris, Davis, and Davis (2003). According to Ahmad (2014), UTAUT was formulated after a number of theories and models were used to explain technology acceptance across subject areas. The theory is established on four variables that influence behavioral intention (BI) and use behavior (UB), identified as performance expectancy (PE) effort expectancy (EE) social influence (SI), and facilitating conditions (FC). Additionally, moderating factors like experience, gender, and age are considered in ICT adoption. This study focused on three constructs: PE, EE, and SI. Performance expectancy addresses learners' view that ICT usage is likely to boost achievement in ELP for competent communication skills.

Additionally, EE emphasizes the degree of ease in manipulating ICT devices during learning of ELP for rapid mastery of oral skills. Still, SI highlights socialization in teaching and learning environments anchored on learner attitude towards implementing ICT during instruction of English segmental features. Notably, though, when the social environment is negatively skewed towards the infusion of ICT in learning, attainment of intelligible vowel sounds may be compromised, which may be the cause of less productive oral skills. The constructs in this theoretical framework work in a cyclic process, each feeding into the other, highlighting the process of acquiring competent ELP skills in ICT-integrated classes for sustainable learning.

CONCEPTUAL FRAMEWORK



METHODOLOGY

This study adopted both quantitative and qualitative methods, informed by pragmatists, and applied a quasi-experiment method involving the Solomon Four-Group design by Solomon (1949). Solomon Four group design effectively checks the Influence of pre-test on post-test scores after experimental intervention. The study's target population was 3600 secondary school learners in Likuyani, Kenya, and information was gathered from 200 participants. Respondents were purposively sampled and randomly assigned to one of each group's codes named SS1, SS2, SS3, and SS4. Two groups in the experimental category received treatment, while the other two (control groups) did not. One of the experimental groups was exposed to a pre-intervention test (pre-test), while another received none. All four groups were exposed to post-tests after treatment, which was the incorporation of ICT in English language phonetics instruction.

The scores obtained after the post-test in each group were comparatively analyzed to establish whether differences had statistical significance. A semi-structured questionnaire, interview, and observation schedule were applied to generate primary data. Social science experts guided the study on the validity of tools with further piloting in sub-county schools outside Kakamega to establish instrument construct and content validity. Cronbach's Alpha of 0.733 and inter-item correlation of 0.478 supported the reliability of data collection instruments. In view of Clark and Watson (1995), the ideal range of inter-item correlation coefficient is 0.15 to 0.5. Descriptive statistics were utilized to analyze numerical data, while qualitative data was thematically assessed based on the study's objectives. Data triangulation was adopted to enhance insight into the Influence of learner readiness for ICT on achievement in ELP.

RESULTS AND DISCUSSION

To ascertain any notable disparity in the attainment of English Language Phonetics among learners in the experimental group and those in the control group, using mean scores obtained in the post-test, results of descriptive and t-test for Equality of means are presented in Table 1.

Table 1:U*nivariate Analysis of Dependent Variable*

Cohort	N	M	SD	SE		
Experimental	89	59.38	20.167	2.14		
Control	95	44.47	27.342	2.81		
Statistics						
Equal variances assumed	F	Sig.	T	df	Sig. (2-t)	MD
	10.225	.002	4.186	182	.00	14.91

Table 1 illustrates descriptive statistics for post-test scores in experimental and control cohorts.

Findings indicated that number of participants in the experimental cohort was 89, with a mean score of 59.38 in the post-test assessment (standard deviation = 20.167; standard error = 2.14). The control group comprises 95 respondents with a mean score of 44.47 on the post-test. The standard deviation for the control group's scores is 27.342, and the standard error is 2.81. Analysis suggests that the experimental group (n=89) exhibited a more excellent average post-test score (M=59.38) in contrast to the control group (n=95), which displayed a lesser average post-test score (M=44.47). This implies that, on average, the experimental group exhibited raised performance in the post-test.

This study used three hypothetical constructs to assess the Influence of learner preparedness in terms of basic skills, ICT usage, and learner perception.

Results are presented in Table 2, including the number of respondent agreements and chi-square test results.

Table 2: Chi- square Results

Statement	Pos-test score range <40	40-49	50-59	60-69	70>	X^2	df	sf
I am confident in using ICT when learning English language phonetics	15	8	4	12	13	9.81	12	.032
I frequently use ICT in learning English language phonetics	11	5	12	11	17	9.81	12	.632
I appreciate ICT usage in learning English language phonetics	25	10	21	24	31	6.69	12	0.47

In Table 2, the corresponding chi-square at 9.81, df=12, p= 0.032 demonstrated a statistically significant correlation between ICT confidence and achievement in English pronunciation at 95% CI. Thus, adequate basic skills as a variable in learner preparedness for ICT usage may catapult achievement in phonation skills for effective communication. The outcome of the chi-square analysis revealed a statistically less significant association between learner ICT usage and enhanced articulation of consonant sounds at 95% CI ($\chi 2$=9.81, df=12, p=0.632).

One respondent had this to say:

'*Our teacher uses ICT to teach us; however, we are not allowed to come to school with technological devices, including smartphones. Therefore, I rarely*

use the devices (ICT) on my own when studying English sounds.'

Relatedly, the corresponding chi-square at (6.69, df=12, p= 0.047) demonstrated a statistically significant correlation between learner appreciation of educational technology and achievement in English pronunciation at a confidence interval (CI) of 95%. More still, another respondent observed that:

'I enjoy the utilization of ICT in learning pronunciation. I find it interesting to listen to how words are pronounced. Not only does ICT usage in English language studies enhance the attainment of phonation skills, but my scores in oral skills are also raised.'

Multiple linear regression analysis was performed to assess the Influence of learner preparedness on achievement in ELP Model 1, which corroborates the analysis of control group results. In contrast, Model 2 shows those of the experimental cohort. Table 3 shows regression analysis results.

Table 3: Influence of learner preparedness on achievement in English Language Phonetics

Group		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Control	(Constant)	-.622	1.039		-.599	.551
	age groups	.039	.308	.014	.125	.901
	Gender	.337	.323	.111	1.044	.300
	technology experience	.062	.313	.020	.197	.844
	ICT integration	.089	.177	.061	.503	.616
	Learner preparedness	**.404**	**.182**	**.266**	**2.223**	**.029**
Experiment	(Constant)	.021	1.246		.017	.986
	age groups	.145	.232	.063	.626	.533
	Gender	.001	.305	.000	.002	.998
	technology experience	.653	.338	.196	1.933	.057
	ICT integration	.068	.172	.039	.394	.695
	Learner preparedness	**.116**	**.177**	**.267**	**2.184**	**.032**

Analysis results validate the realization of a statistically significant relationship between learner preparedness for ICT and achievement in ELP in both models (Model 1: Beta = 0.266, t = 2.223; Model 2: Beta = 0.267, t = 2.184). In summation, there was the empirical establishment of learner preparedness, informed by requisite basic skills, consistent usage, and positive perception, as a lever upon which ICT integration is supported for a broader understanding of ELP.

Moreover, an observation schedule was applied to ascertain learners' engagement with educational technology during ELP class. Findings were recorded under subcomponents of Learner Preparedness for ICT integration in Control and Experimental cohorts, as captured in Table 3.

Table 3: Observation Schedule (Learner engagement with ICT during ELP lesson)

Group	School	Basic skills	ICT Usage	Learner attitude
Experimental	SS1	High	Average	Average
	SS3	Average	High	High
Control	SS2	Average	Low	Low
	SS4	High	Low	Average

Findings from Table 3 indicate the same level of requisite ICT skills in both experimental and control groups. Learners in both experimental and control groups demonstrated basic ICT skills, implying that keeping other factors constant, learner ICT literacy could lead to similar ELP achievement levels in both cohorts. Additionally, usage of ICT was observed to be higher in the experimental group compared to the control group, based on average recordings, and it was high in the group exposed to treatment and low in the No experiment cohort. Relatedly, Ben, Dahmani, and Ragni (2022) argue that the possession of adequate ICT skills tends to deepen the conceptualization of concepts, which may raise pronunciation awareness for exemplary oral skills among learners. Still, learner attitude toward educational technology was observed to be more positive in the experimental cohort than in the control group. This relates to the proposition that a learner's favorable perception may raise engagement with technology for maximal achievement in ELP and improved pronunciation of consonants.

CONCLUSION

This study concluded that learner preparedness, based on basic skills, ICT usage, and learner perception of educational technology, promotes pronunciation of consonant sounds, learner identification of vowel sounds, and differentiation of minimal pairs for competent oration skills. Further, innovative ICT entrenchment in learning sounds raises learner conceptualization of minimal pairs, enhancing pronunciation ability for exemplary oral skills.

The study concluded that requisite technological skills enable productive engagement with ICT devices in learning environments for intelligible English pronunciation among learners. Learners with adequate basic skills tend to readily access relevant ELP content on the internet, leading to improved consonant pronunciation for comprehensible English oral skills.

Further, a study concluded that regularized ICT usage by learners intensifies mastery of English phonation skills for intelligible articulation of sounds. Consistent embrace of educational technology among learners tends to promote oral exercise by boosting access to audio-visual content on language applications.

The study concluded that favorable learner attitude towards educational technology boosts attainment in ELP for improved pronunciation ability. Appropriate attitude encouraged ICT usage when learning sounds for rapid mastery of English pronunciation.

RECOMMENDATIONS

i) The Ministry of Education should establish policy guidelines for all secondary schools, requiring that all institutions ensure technical experts are available in schools to address gaps in ICT skills. This may enhance the entrenchment of technology in the learning arena by boosting the effective manipulation of gadgets for improved pronunciation.

ii) Provide appropriate and adequate ICT resources in English language classes to enable effective adoption by teachers and learners for rapid mastery of ELP skills. This may include providing visual audio ELP content and setting up a language laboratory for effective English sound instruction.

iii. All learners should be equipped with basic ICT skills for maximal engagement with technology in language class. Learners should be encouraged to manipulate technological gadgets and access visual audio content on ELP, which will strengthen mastery of English language consonants, vowels, and minimal pairs

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