



EXTENT OF INTEGRATION CHALLENGES OF NEW TECHNOLOGIES IN TEACHING BUSINESS EDUCATION COURSES IN TERTIARY INSTITUTIONS

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Abstract

The study focused on challenges of integrating new technologies for teaching in business education courses in tertiary institutions in North-East, Nigeria. Three research questions guided the study and two hypotheses were tested. A descriptive survey design was adopted. The population consisted of 107 business educators. No sample was taken, as the population size was manageable. A 24-items structured questionnaire validated by three experts was used for the study. The reliability of the instrument was ensured using test-re-test technique and data collected were analyzed using Pearson Product Moment Correlation Co-efficient formula which yielded an overall reliability co-efficient value of 0.89. Data related to the research questions were analyzed using mean and standard deviation in respect to research questions, while t-test was used to test the null hypotheses at 0.05 level of significance. The findings of the study revealed that financial and pedagogical issue constraints affected integration of new technologies in teaching business education courses in tertiary institutions to a high extent. The study revealed that business educators from federal and state owned tertiary institutions do not differ significantly on the extent financial and pedagogical issue constraints affected integration of new technologies in teaching business education courses in North-East, Nigeria. Thus, some suitable measures for improving integration of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria were highlighted as well. It was concluded that new technologies should be integrated and various ways of improving on the integration of new technologies in teaching business education courses include in-services training, installation of internet facilities, provision of electricity supply and organizing workshops/seminars in related areas among others. Based on the findings of the study, it was recommended that government should grant permission to business educators to undertake in-service training (locally and internationally) workshops, seminars and conferences in order to keep them abreast with the use of the new technologies and more funds should be provided among others.

Key words: New technologies, integration, challenges, business education courses, tertiary institutions

Introduction

Technology has become an integral part of the instructional process resulting in the development of new concepts in the logistics of instruction. The use of Information and Communications Technology (ICT) resources have made teaching and learning easier, concrete, real and more result-oriented. Since the introduction of ICT, there has been a growing concern for the use of new technologies such as Internet, computer, scanner, e-mail, and projectors for teaching and learning.

Technology is defined by Redmann and Kotlik in Ile, Udegbonam and Odimmega (2015) as the making modification, usage, and knowledge of tools, machines, techniques, crafts, systems and methods of organization in order to solve a problem. Technology improves a pre-existing solution to a problem, achieve a goal, handle an applied input or output relation or perform a specific function.



Many are just beginning to explore the true assistance technology offers for teaching and learning. When properly used, technology help students acquire the skills they need to survive in a complex, highly technological knowledge-based economy. Thus, technologies are applied in classroom situation to enhance teaching and learning processes.

Ekpenyong in Ile, Udegbunam and Odimmega (2015) asserted that old technologies such as manual typewriters, black boards, chalk, text books, duplicating machines, dictating machines, franking machines, tape recorders, manual libraries used in teaching have their origin from Paul Frefor banking of knowledge. At the period when educators were seen as the custodians, givers and distributors of knowledge, whatever, the educators said were right and students followed strictly all the dictates of their teachers. They were also teacher-centered and resulted in low retention of knowledge. A business educator who by today has not been trained in the new technologies cannot be effective, efficient or able to deliver the knowledge and skills required by the students to succeed in the new work environment that is increasingly becoming ICT based. It is in keeping with the dynamics of social change and the demands on education that the Federal Government of Nigeria (FRN, 2013) in National Policy on Education came up with some policy innovations and changes, one of which was the introduction of information and communications technology (ICT) into the school system. In realization of this fact, the federal government of Nigeria has put in place a robust transformation agenda in education intended to put Nigeria in a better position to be a competitive player and in the process transform all sectors of its economy through tertiary education.

Tertiary education in Nigeria recognize the fact that mastering the basic skills and concepts of new technologies as the core of education must be the major plank through which transformation agenda in education could be realized. This is because education is a catalyst for any meaningful change in the society. Education, according to Adesina in Umoru (2015) is the tool for integration of individual effectively into a competitive society so that the individual can achieve self-realization, develop national consciousness, promote unity, and strive for social, economic, political, scientific, cultural and technological process. In the opinion of Alufohal and Ezeani (2012), education is vital instrument that liberates the people from ignorance and stimulates development. From the forgoing, this can be achieved through business education programme.

Specifically, business education as a component of vocational technical education programme prepares individuals for careers in business; and to be intelligent economic consumers of goods and services (Ugwoke, 2011). Therefore, Business education is one vital programme in Nigeria tertiary institutions that has the capacity to bring about the required liberation and stimulation of the citizens for global competition and national development. It is believed that for any nation to help in promoting sustainable economic growth or development, effort shall be made to invest sufficient amount of financial resources on education particularly for teaching and learning in business education course. Therefore, for the business education programme to sustain its relevance in providing the needs of individuals and that of the society, it must embrace current trends in modern technologies in the academic and economic demands of the society.

New technologies needed for teaching and learning of business education courses according to Ezenwafor (2012) include broadcast materials or CD-Rom for information collection and storage; micro-computers with software applications to write or produce documents; keyboards, e-mail messaging; internet browsing using search engines, windows messengers and yahoo chat room. Others are opaque projectors, slide projectors and multimedia projectors, e-banking, e-commerce and e-economies. There are also computer software and applications such as word processors, spreadsheets, power-point, desktop publishing and graphics.



Other technological devices available for teaching and learning outlined by Osuala (2009) include media typewriter or automated typewriter, closed circuit TV, word processor, video tape recorder, sound on paper system, e-commerce, advanced calculators, dial access system, digital library, individual audio application and audio-visual retrieval system. Furthermore, Osuala stated that these technologies are not new in many advanced countries; they are relatively new in Nigeria. Nwazor and Udegbunam (2016) found that only few new technologies were available for teaching of business education courses in college of education in South-western, Nigeria.

However, Reigeboth and Joseph in Nwazor and Udegbunam (2016) saw technology integration as focusing on “how” to use technology to support the way teaching and learning is currently being done in schools. It also enhances the use of modern instructional mode of teaching and learning in tertiary institutions to meet the demands of the current trends in academics. Integrating technology into classroom instruction means more than teaching basic computer skills and software programs in a separate computer class. Some of them are already being integrated in some schools but they are yet to be used in many of Nigeria educational institutions.

Similarly, Agyei and Voogt in Ile, Udegbunam and Odimmega (2015) lamented that teachers are not integrating new technologies in classroom instruction in spite of government and private efforts in the procurement of new technology facilities for tertiary institutions in Nigeria. Ile, Udegbunam and Odimmega further viewed current teaching strategies used in tertiary institutions, and lack of teachers' knowledge of ways to integrate new technologies in instruction as major barriers to technology integration. Oliver (2009) also observed that, ICT has not been extensively integrated in the education system in Nigeria when compared to other fields such as business and engineering. Reasons for the low integration of new technologies in education system, according to the Oliver, include high costs associated with implementing these technologies that prevent schools rural and urban, private and public owned from using them for instruction. Other factors highlighted are limited information sharing, limited skills of teachers in new technology integration, epileptic power supply, internet network failure, management attitude, and lack of technical assistance.

Integration is a combination of parts that work well together. It is an art of combining or adding parts to form a unified whole. Integrating new technologies into teaching and learning involves incorporating new technology into day-to-day instruction as part of processes through which curriculum objectives are met (Fan, 2014). New technologies integration requires teachers' knowledge in the subject area, as well as an understanding of how students learn using new technology, and a good level of new technology technical expertise among the teachers. Effective technology integration must happen across the curriculum in ways that deepen and enhance the learning process. In particular, it must support four key components of learning: active engagement, participation in groups, frequent interaction and feedback, and connection to real-world experts. Effective technology integration is achieved when the use of technology is routine and transparent and when technology supports curricula goals. Technology also changes the way teachers teach, offering educators' effective ways to reach different types of learners and assess students' understanding through multiple means. It also enhances the relationship between teachers and students. When technology is effectively integrated into subject areas, teachers become advisers, content experts, and coaches. Technology helps to make teaching and learning more meaningful and fun.

According to Nagel (2013), despite increasingly widespread adoption of technologies in virtually every aspect of education, significant challenges are preventing widespread affective implementation. Nagel observed that key among all the challenges is the lack of sustainable



professional development for business educators who are required to integrate the new technologies into classroom practices include financial constraints and pedagogical issue constrains, among others. Financial constraints refer to inadequate funding by institutions. A risk factor related to the institutions inability to provide sufficient financial resources to meet minimum needs of investing or purchasing of new technology resources. According to Gbadamosi (2009), inadequate equipment, insufficient training and retraining of teachers on the new technology, lack of maintenance of the existing equipment and upgrading, and infrastructure deficit are effect of financial challenges by institutions. Pedagogical issue constrains refer to a practice whereby many business educators do not see change and growth as an integral part of their profession and they are not willing to swim against the tide of conventional operating procedures often at considerable personal cost (Center for the Use of Research and Evidence CUREE, 2012). Many of the business educators resisted changing from traditional pedagogical methods to more innovative technology-based teaching and learning.

Influencing factors on new technologies integration challenge for teaching of business education courses could be ownership of institutions. Ownership of institutions in this study means federal and state owned tertiary institutions were business education courses are offered in North-East, Nigeria. Udegbunam (2016) noted that a great dichotomy existed between business educators federal and state tertiary institutions with regards to new technology integration. Udegbunam maintained that federal owned tertiary institutions and state tended to have more ICT personnel and resources. ICT resources integration has high influence in teaching and learning of business education.

However, Nagel (2013) observed that key among all the challenges is the lack of sustainable professional development for business teacher educators who are required to integrate the new technologies into classroom practices. Therefore, in developing countries like Nigeria, integration of new technologies is challenged with the problem of finance to purchase equipment such as computer, computer laboratories, internet and e-mail facilities, videophone systems and teleconferencing devices, fax and wireless applications, digital library, digital classrooms, multimedia systems and the problem of multimedia courseware development among others (Global Information Technology Report, in Nwana, 2012). Other studies indicated that there is dearth of trained teachers for new technologies, pedagogical issues constraints, lack of facilities, infrastructures and equipment (Jegede Owolabi, 2008). It is against this background that this study was carried out to ascertain the challenges and to find out ways of improving the integration of new technologies in teaching business education courses in tertiary institutions in North-East Nigeria.

Statement of the Problem

One of the aims of integrating new technologies is to improve the quality of education and expand access to education. The education sector is expected to be technologically driven and requires that technological resources are fully integrated in it. Unfortunately, the education sector seems to be lacking the necessary technological resources needed to bring the Nigerian education sector at par with international standards. Business education programme being a skills development programme seem to be worst hit by the dearth of requisite technological tools on one hand and the skills needed to effect the integration on the other. The consequence is that the programme is faced with the challenge of producing the needed manpower for the world of work. For technology to be successfully useful and deliver the goods expected of it such as making business education graduates global workers, it should be made part of the educational delivery of learning.



Purpose of the Study

The main purpose of this study was to ascertain the challenges of integrating new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria. Specifically, the study sought to:

- Ascertain the extent of financial constraints affect integrating of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria.
- Ascertain the extent of pedagogical issue constraints affect integration of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria.
- Find out the ways of improving the integration of new technology in teaching business education courses in tertiary institutions in North-East, Nigeria.

Research Questions

The following research questions guided the study:

- To what extent do financial constraints affected integrating of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria?
- To what extent do pedagogical issues constraints affected integrating of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria.
- In what ways can the integration of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria be improved?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

- There is no significant difference in the mean responses of business educators in federal and state owned tertiary institutions on the extent financial constraints affected integrating of new technologies in teaching business education courses in North-East, Nigeria.
- There is no significant difference in the mean responses of business educators in federal and state owned tertiary institutions on the extent pedagogical issue constraints affected integrating of new technologies in teaching business education courses in North-East, Nigeria.

Method

Descriptive survey design was adopted for the study. The researchers considered this design appropriate for this study since it intended to collect data from practicing business educators regarding the challenges of integrating new technologies in teaching business education courses in North-East tertiary institutions, Nigeria. The population of this study comprised 112 business educators in tertiary institutions that offer business education in North-East, Nigeria. Data collected was a 24 items structured questionnaire. The instrument for data collection was a structured questionnaire titled Challenges of Integrating New Technologies for Teaching Business Education Courses in Tertiary Institutions (CINTTBEC). The instrument was validated by three experts-two in business education and one in measurement and evaluation from Nnamdi Azikiwe University, Awka. Their comments enhanced the content validity of the instrument. Test re-test method was used to establish the reliability of the instrument, and the Pearson Product Moment Correlation Coefficient was used to test the reliability of the instrument. The analysis yielded a co-efficient value of 0.89 indicating that the instrument was reliable for the study using the application of Statistical Package for Social Sciences (SPSS) version 21. The questionnaire was structured on a five-point scale, with response categories as "Very High Extent", "High Extent", "Moderate Extent", "Small Extent" and "Very Small Extent" for research question one and two while research question three have four-point scale, with response categories as Strongly Agree, Agree, Disagree and Strongly Disagree.

The administration of the instrument was carried out personally by the researchers with the help of four research assistants. Out of 112 copies of the questionnaire administered on the respondents, a total of 107 copies of the questionnaire were successful retrieved and were used for data analysis. Data collected regarding the research questions were analyzed using mean and standard deviation while the t-test was used to test the null hypotheses at 0.05 level of significance. In order to determine the challenges of integrating new technologies for the teaching business education courses in tertiary institutions in North-East, Nigeria, a decision rule was based on mean ratings between 4.50-5.00 were regarded as very high extent, items with mean ratings of 3.50-4.49 were considered as high extent and items with 2.50-3.49 were regarded as moderate extent. Furthermore, items with mean ratings of 1.50-2.49 and 0.50-1.49 were considered as small extent and very small extent respectively in research question one and two while for three any item whose mean score was 2.50 above to 4.00 qualify to be accepted. On the other hand, any item with a mean score below 2.50 did not qualify to be accepted. In testing the null hypotheses, where the calculated p-value is less than the stipulated level of significance (0.05), it meant that there was a significant difference and the hypothesis was rejected. Conversely, where the calculated p-value is equal to or greater than the stipulated level of significance (0.05), it meant that there was no significant difference and the hypothesis was not rejected.

Results

Research Question 1:

To what extent do financial constraints affected integrating of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria?

Table 1: Mean ratings responses of respondents on the extent financial constraints affected integration of new technologies for teaching business education courses in tertiary institutions.

(N = 107)

S/N	Extent financial constraints affected integration of new technologies in teaching business education courses	X	SD	Remark
1.	Lack of funds for procurement of computers	4.30	.64	High Extent
2.	Low purchase level of technology for teaching in the country	4.10	.70	High Extent
3.	Insufficient educational infrastructure to aid teaching and learning process	4.00	.45	High Extent
4.	Lack of funds for procurement of lab equipment	4.19	.39	High Extent
5.	Lack of funds for training /retraining of teachers	4.09	.54	High Extent
6.	Lack of funds for consumables	4.20	.75	High Extent
7.	Lack of support from the business community and government	4.29	.78	High Extent
8.	Dearth of grants from donor agencies	4.19	.75	High Extent
Grand Mean		4.17		High Extent

Data in Table 1 show that the respondents reveal that financial constraints affect integration of new technologies in teaching business education courses in tertiary institutions to a high extent. The item by item analysis shows that all the items achieved mean scores ranging from 4.00 4.30 which indicate high extent. It is observed that the standard deviation show homogeneity in responses of the respondents. The grand mean score of 4.17 indicates that financial constraints affect integration of new technologies for teaching business education courses in tertiary institutions in North-East, Nigeria to a high extent.

Research Question 2

To what extent do pedagogical issue constraints affected integrating of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria?

Table 2: Mean ratings responses of respondents on the extent pedagogical issue constraints affected integration of new technologies for teaching business education courses in tertiary institutions.

(N=107)

S/N	Extent pedagogical issue constraints affected integration of new technologies in teaching business education courses	X	SD	Remark
	Resistance to change from traditional methods to technology-based method of teaching	3.90	.70	High Extent
	Teachers attitude toward the use of new technologies e.g. non-challant	3.90	.54	High Extent
	Lack of technical support	4.30	.46	High Extent
	Lack of access to ICT resources	4.19	.39	High Extent
	Lack of ICT skills for teaching	4.00	.44	High Extent
	Grand Mean	4.06		High Extent

The item by item analysis in Table 2 shows that all the items achieved mean scores ranging from 3.90 4.30 which indicate high extent on how pedagogical issue constraints affect integration of new technologies in teaching business education courses in tertiary institutions in North-East Nigeria. It is observed that the standard deviation showed homogeneity in responses of the respondents. The grand mean score of 4.06 indicates that pedagogical issue constraints affected integration of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria to a high extent.

Research Question 3

In what ways can the integration of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria be improved?

Table 3: Mean score and standard deviation of respondents' on the ways of improving the integration of new technologies in teaching business education courses in tertiary institutions in North-East,

(N=107)

S/N	Ways of Improving the Integration of New Technologies in Teaching Business Education Courses	Mean	SD	Remarks
1.	Through in-service training	3.35	0.77	Accepted
2.	Through installation of internet facilities	3.16	0.85	Accepted
3.	Through provision of electricity	3.29	0.82	Accepted
4.	Through workshop/seminar in relevant areas	3.10	0.97	Accepted
	Private sector should be partnered with to invest in the provision of new technologies for business education	3.57	0.55	Accepted
	Business educators should demonstrate competencies in integrating new technologies	3.51	0.66	Accepted
7.	There should be adequate new technologies	3.16	0.93	Accepted
8.	There should be functional new technologies	3.09	0.94	Accepted

9.	Provision of Digital Library	3.38	0.83	Accepted
	There should be a law to enforce maintenance of new Technologies in business education	3.26	0.80	Accepted
	Employment of business educators should be based on demonstrable competencies in new technologies	3.43	0.91	Accepted
Grand Mean		3.30		Accepted

Data in Table 3 shows that all the variables have mean scores above 3.50. The respondents accepted all the items as suitable measures for improving the integration of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria.

Testing of Hypotheses

Null Hypothesis 1:

There is no significant difference in the mean responses of business educators in federal and state owned tertiary institutions on the extent financial constraints affected integrating of new technologies in teaching business education courses in North-East, Nigeria.

Table 4: Summary of t-test responses of business educators in federal and state owned tertiary institutions on the extent financial constraints affected integrating of new technologies in teaching business education courses in North-East, Nigeria.

N=107								
Ownership of Institution	N	\bar{X}	SD	α	Df	t-val	p-val	Remarks
Federal	36	3.12	.14	0.05	105	.89	.27	Not Significant
State	71	3.08	.11					

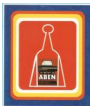
Source: Field Study, 2018.

Data in Table 4 indicate that the aggregate mean ratings of business educators in federal and state owned tertiary institutions on the extent financial constraints affected integrating of new technologies in teaching business education courses is 3.12 and 3.08 while the corresponding standard deviation is .14 and .11. The Table indicates that the t-value is .89 at degree of freedom of 105, while the p-value is 0.27. Testing at alpha level of 0.05, the p-value is not significant, since the p-value is greater than the alpha value (0.05). Therefore, the null hypothesis is not rejected; hence, the mean responses of business educators in federal and state owned tertiary institutions do not significantly differ on the extent financial constraints affect integrating of new technologies in teaching business education courses in North-East, Nigeria.

Null Hypothesis 2

There is no significant difference in the mean responses of business educators in federal and state owned tertiary institutions on the extent pedagogical issue constraints affected integrating of new technologies in teaching business education courses in North-East, Nigeria.

Table 5: Summary of t-test responses of business educators in federal and state owned tertiary institutions on the extent pedagogical issue constraints affected integrating of new technologies in teaching business education courses in North-East, Nigeria.



N=107

Ownership of Institution	N	\bar{X}	SD	α	Df	t-val	p-val	Remarks
Federal	36	3.21	.19	0.05	105	.67	.36	Not Significant
State	71	3.18	.15					

Source: Field Study, 2018

Data in Table 5 indicate that the aggregate mean ratings of business educators in federal and state owned tertiary institutions on the extent pedagogical issue constraints affected integrating of new technologies in teaching business education courses is 3.21 and 3.18 while the corresponding standard deviation is .19 and .15. The Table indicates that the t-value is .67 at degree of freedom of 105, while the p-value is 0.36. Testing at alpha level of 0.05, the p-value is not significant, since the p-value is greater than the alpha value (0.05). Therefore, the null hypothesis is not rejected; hence, the mean responses of business educators in federal and state owned tertiary institutions do not significantly differ on the extent pedagogical issue constraints affected integrating of new technologies in teaching business education courses in North-East, Nigeria..

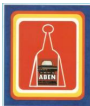
Discussion of Findings

Findings of the study in the first research question revealed that all the items on the extent financial constraints affected integration of new technologies in teaching business education courses in tertiary institutions to a high extent and achieved mean scores ranged from 4.00-4.30. This implies that financial constraints affect integration of new technologies in teaching business education courses in tertiary institutions. This finding is in line with Gbadamosi (2009) who noted that inadequate equipment, insufficient training and retraining of teachers on the new technology, lack of maintenance of the existing equipment and upgrading, and infrastructure deficit are effect of financial challenges by institutions. In support, Nagel (2013) observed that lack of sustainable professional development for business educators who are required to integrate the new technologies into classroom practices.

The result of the study revealed that business educators from federal owned tertiary institutions do not differ significantly from business educators in state owned on the extent financial constraints affected integration of new technologies in teaching business education courses. This means that the ownership of institutions did not affect the extent financial constraints affected integration of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria.

The findings of the study revealed that all the items on the extent pedagogical issue constraints affected integration of new technologies in teaching business education courses in tertiary institutions to a high extent and achieved mean scores ranged from 3.90 4.30. This implies that pedagogical issue constraints affect integration of new technologies in teaching business education courses in tertiary institutions. This findings is in agreement with the view of Center for the Use of Research and Evidence CUREE (2012) that many of the business educators resisted changing from traditional pedagogical methods to more innovative technology-based teaching and learning.

The study revealed that business educators from federal owned tertiary institutions do not differ significantly from their counterpart in the state on the extent pedagogical issue constraints affected integration of new technologies in teaching business education courses. This means that the



ownership of institutions did not affect the extent pedagogical issue constraints affected integration of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria.

Finally, the study also revealed that business educators accepted all the suggested ways as suitable measures for improving the integration of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria.

Conclusion

Based on the findings of the study, it is concluded that new technologies have been recognized as very vital in adding easy teaching and learning in the educational system. Information technologies have always held great promise for transforming our teaching, thinking and learning. In spite of the importance of new technologies in educational sector vis-s-vis the business education, there are quite a number of challenges associated with the integration of new technologies in teaching business education courses in tertiary institutions in North-East, Nigeria. Some of them are financial constraints and pedagogical issue constraints among others. Finally, ways of improving on the integration of new technologies were also highlighted which include in-services training, installation of internet facilities, provision of electricity supply and organizing workshops/seminars in related areas among others.

Recommendations

In the view of findings of the study, it is recommended that:

The government should grant permission to business educators to undertake on in-service training (whether locally or internationally), workshops, seminars and conferences in order to keep them abreast with the use of the new technologies.

More funds should be provided by the government for purchase of relevant new technologies to enhance teaching of business education courses in all tertiary institutions.

Relevant new technologies resources should be provided to enhance teaching and learning of business education courses in all tertiary institutions.

The school administrators such as Provost and National Commission of Colleges of Education, Vice Chancellor and National University Commission (NUC) should acquire grants from donors to purchase and improve on the new technology infrastructure and training of teachers in new technologies integration in the classroom. It would enable the business education students to embrace the integrating of new technologies to improve their thinking and problem solving skills needed to tackle challenges in the modern society.

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