RESEARCH ARTICLE

Transmediality: Weaving Paths to Autonomous Learning in Algeria

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Abstract
This study aims at investigating the effectiveness of implementing transmedia storytelling in fostering autonomous learning in English as a Foreign Language (EFL) education. To obtain satisfactory results, a true experimental research design was conducted on a sample of 36 third-year pupils at Zerrougui Amar Secondary School-Tebessa, Algeria. Results of the experimental design provided evidence on the efficacy of transmedia storytelling in cultivating learners' autonomy.

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1. Introduction

Current educational reforms in language programmes worldwide, including those in Algeria, have been pursued to meet the urge to develop learners' 21st century skills. Central to these skills is the building of learner autonomy. As such, educators in the field of language learning and teaching are exploring innovative and active pedagogies that offer opportunities for English as a Foreign Language (EFL) learners to develop their learning autonomy and, therefore, meet the demands of the 21st century skills. Within the educational transformation in this digital era, transmedia storytelling has emerged as a promising approach in the field of language education (Fast & Örnebring, 2015).

Transmedia storytelling entails the dissemination of narratives across multiple platforms; each medium uniquely contributes to the overall narrative experience (Jenkins, 2006). This approach not only harmonizes with the multimedia preferences of today's digital-native learners but also leverages the interconnected nature of modern media consumption habits (Gambarato, 2012). By integrating transmedia storytelling techniques in EFL instruction, educators can engage students in immersive learning experiences that extend beyond traditional classroom models that rely on teacher-centeredness and passive learning.

Subsequently, this research aims at exploring the effectiveness of transmedia storytelling in cultivating EFL learners' deeper engagement, critical thinking, and creative expression. By integrating multimedia elements across various platforms, this study seeks to determine how transmedia storytelling can enhance language proficiency and promote autonomous learning among EFL learners. In the light of the research problem and the aim of the study, two research questions are addressed:

1. How does transmedia storytelling influence EFL learners' engagement in language learning?

2. To what extent does transmedia storytelling contribute to the development of autonomous learning skills among EFL

learners?

Therefore, it is hypothesized that integrating transmedia storytelling into EFL classrooms will increase engagement and motivation due to the interactive nature of transmedia narratives and, hence, develop EFL learners' autonomy. By addressing these research questions and testing this hypothesis through a true experimental design, the present study aims to not only validate the theoretical underpinnings of transmedia storytelling but also to present empirical grounds on the efficacy of transmedia storytelling as a catalyst for fostering autonomous learning in EFL contexts.

2. Literature Review

2.1. Transmedia Storytelling: A Multifaceted Interactive Experience

The concept of Transmedia Storytelling gardened noticeability in 2006 when it was primarily introduced by Henry Jenkins to refer to the narratives that extend across multiple media. Optimally, each of the medium's narrative contributes to the whole story (Jenkins, 2010). Jenkins' definition of the term denoted that transmedia storytelling is a procedural narrative that is depicted across different platforms to foster a harmonized narrative experience. Upon its initial use by Jenkins, the forms of transmedia stories include virtual experiences and complex franchise. However, the twenty-first century transmedia storytelling is bolstered by recent transmedia literature to further include television, photography, games, music, webtoons, and other forms of transmediality (Javanshir et al, 2018).

It is worth reiterating that each generated medium is self-contained and thus it is enriching to the original text with respect to its own media strategies. Herman (2004) mentioned some instances with regard to their specific strategies that contribute to the whole storyworld including: Description in literary texts, visualization in films, aurialization in audiobooks, performances in plays and interactivity in games (p. 54). One of the most cited examples of transmedia storytelling that would better clarify Herman's classification is *Harry Potter* where one firstly goes through the books. Then, the movie is built to target wider audience through visual materials, while video games make the narrative more immersive as the fans participate in the storyline. According to Jenkins (2006), this interactive experience that the audience has with transmedia storytelling refers to participatory culture.

Within the same vein, Raybourn (2014) defined four basic components in outlining transmedia storytelling: The development of characters, the story, worldbuilding, and equally important the audience. In fact, transmedia storytelling encourages its audience to interact with the narrative by searching for more information in new and different forms. Transmedia stories provide participants with the interactive experience wherein they can engage in the narrative and communicate across different platforms (Graves, 2011). In simpler terms, instead of being passive, audiences are encouraged to actively engage with the narrative by interacting with the different media platforms. Participants contribute and influence the direction of the narrative through their action and feedbacks. This fosters a participatory culture where fans become co-creator rather than passive receivers (Pearson & Smith, 2015; Ryan & Thon, 2014; Lambert, 2013).

2.2. The Adaptation of Transmedia Storytelling in Educational Contexts

The development of modern technologies has reshaped how stories are told and shared (Van Gils, 2005). Hence, the concept of transmedia storytelling which entails telling stories through various platforms has been widely discussed and thoughtfully considered by media scholars using narrative and qualitative methodologies. Despite its growing importance, limited researches in the field of education spot the potential benefits of transmediality for educational purposes.

Transmedia approach has significant benefits in education by shifting the sphere towards students and their preferences. As learners increasingly rely on media platforms for social interactions, integrating transmedia storytelling into classrooms can motivate them through multimedia materials that resonate with their daily experiences and, therefore, promote continuous learning. Furthermore, the nature of transmedia storytelling matches learners' preferences by creating constant access to online sources including videos, book clubs and games (Faria-Ferreira et al., 2021).

On a similar note, transmedia learning consolidates the 21st century focus on learners' autonomy as learners build the ability to synthesize the information from multiple media sources to become "active publishers of knowledge" (Jenkins, 2009, p. 46). Additionally, transmedia storytelling broadens the modes they receive by mixing them with their schematic knowledge to create a participatory culture (Kalantzis & Cope, 2012). Thus, it becomes apparent that transmedia storytelling and autonomous learning are increasingly interrelated concepts in modern education and media consumption.

2.3.Learners' Autonomy within Transmedia Storytelling

Because of its interdisciplinary nature, providing a straightforward definition of autonomy is, therefore, framed within an educational perspective. Noted that autonomy is defined as the ability to develop self-guidance skills within the learning process, this ability is learnt and not acquired. In describing autonomy, being an autonomous learner requires the learner's ability to set an aim, choose the appropriate educational materials, and evaluate his/her achievements. Accordingly, autonomy is a quality that learners develop, rather than a learning situation. In simpler terms, learners are required to develop this lifelong skill rather than being involved in an activity whereby s/he becomes autonomous (Holec, 1981).

The multimedia nature of transmedia storytelling offers an opportunity to promote learners' autonomous skills (Benson, 2001). In fact, transmediality provides EFL learners with a prospect to extend their learning outside the classroom through its richness of websites, online videos, electronic books, ...etc (Ahmed et al., 2020; Ubaedillah & Pratiwi, 2021). Schemenk (2005) added that the immense spread of the autonomous learner concept is mainly because of the multiplication of the media landscape in language education.

3. Research Method and Procedure

The aim of present study is to investigate the effectiveness of transmedia storytelling in empowering autonomous learning environments in EFL classrooms. To test the transmedia storytelling efficacy in raising EFL Learners' learning autonomy, a true experimental design was conducted.

3.1. Choice of the Method

In this current study, a true experimental design was selected to rigorously explore the effectiveness of transmedia storytelling in developing EFL learners' autonomous learning. Conducting a true experimental design was mainly due to its high internal validity and ability to manipulate variables. Besides, participants were randomly assigned to be part of either the experimental group or the control group. The two groups underwent measurements before (a pretest) and after (a post-test) the intervention.

3.2. Population and Sampling

As mentioned, the participants in this study were randomly chosen out from a larger population of third year pupils at Zerrougui Amar Secondary School-Tebessa. The total number of population under study is 107 pupils; all of them have studied English as a Foreign Language for at least seven years. Adopting a stratified random selection, 36 pupils were selected and randomly allocated either to be part of the experimental group or the control group. Beside the fact that the findings of a true experimental design are generalizable, the random assignment of participants ensures that any observed differences between groups are likely due to the treatment rather than preexisting factors. It is worth mentioning that the stratified sampling was used to adequately represent the subgroups (strata) with the population.

3.3. Research Instruments

In a true experimental design, a pretest and a post-test are the main research tools that are used to accurately assess changes and measure the effectiveness of the intervention. To establish a baseline and ensure group equivalence, a pretest was conducted on all participants before the treatment was employed. After engaging the experimental group with transmedia storytelling materials, both groups were subjected to a post-test to measure changes.

3.4. Research Procedures

Our true experimental design unfolded in three distinct phases. In the pre-experimental phase, selected participants were assessed through a pretest that took the form of engagement metrics that test learners' autonomy. Unlike the control group, the experimental group received the treatment that has been set up in December, 2023 and ended in March, 2024. It was held in the school library and further work was carried out outside the school. The 18 participants met for 30 to 45 minutes once a week so as to have enough time to develop new autonomous skills and discuss their advance. To know how transmedia storytelling was approached and how learners coped with it, a description of the treatment condition is needed. Concerning the setting, the area was comfortable and the library assistant was friendly and welcoming. The setting was arranged in an informal soft setting in which pupils could freely stay in the library or in the front garden. The teacher motivated learners to share and discuss what they have done as well as put forward recommendations. The organization of sessions and the choice of materials are demonstrated in the following table (table 1).

Table 1. The Experimental Procedure

Week 1	**Week 2**	**Week 3**
-The pretest -Introducing learners to the materials	- Overview-*The Matrix*- Self-assessment on existing storytelling	-Engagement Strategies with *Pokemon Go* -In-depth Analysis of *Avatar*
Week 4	**Week 5-6**	**Week 7-8**
-Developing an interactive storytelling element (a game or social media challenge).	-Worldbuilding *Harry Potter* -Writing character bios: a cross-platform narrative outline.	-Leveraging platforms with *Hunger Games* -Design a social media campaign.
Week 9-10	**Week 11-12**	**Week 13-14**

-Leading a discussion-Ethical consideration *Lord of the Rings.*	-Analytics with *Fortnite* - *The Blair Witch Project* -Creating media storyline.	-Emerging Trends- *Star Wars/Resident Evil* -Create a world-building document for a fictional universe.

Week 15-16
-Self-evaluating the projects-The posttest.

After the treatment period, participants in both groups passed the post-test. It is worth stating that the type of testing in the pretest resembles the post-test (engagement metrics).

4. Results

This study is an attempt to highlight the effectiveness of transmedia storytelling in developing EFL learners' autonomous learning. As such, data from the pretest and the post-test were collected for follow-up analysis.

4.1. The Pretest

The experimental group and the control group were pretested through engagement metrics (a task completion rate) that target learners' ability to drive their own learning. Assessing engagement metrics was on 20-point scale. The two groups' scores of the pretest are presented in the following table (table 2)

Table 2. Scores of the Pretest for the Experimental Group (EG) and the Control group (CG)

The EG ID	Scores	The EG ID	Scores	The CG ID	Scores	The EG ID	Scores
1001	11,00	1010	10,00	1019	10,00	1028	13,00
1002	15,00	1011	9,00	1020	9,00	1029	7,00
1003	6,00	1012	11,00	1021	11,00	1030	7,00
1004	9,00	1013	18,00	1022	7,00	1031	6,00
1005	8,00	1014	7,00	1023	8,00	1032	8,00
1006	12,00	1015	6,00	1024	10,00	1033	12,50
1007	11,00	1016	5,00	1025	6,00	1034	7,00
1008	13,00	1017	8,00	1026	14,00	1035	10,25
1009	9,00	1018	7,00	1027	9,00	1036	9,00

Source: Prepared by the Researcher based on the Prettest Scores

Prior to any statistical analysis, the pretest results indicated that participants in both the experimental group and the control group had low autonomous learning skills. To ensure the homogeneity assumption, the results were processed using SPSS version 25 to obtain the mean and the standard deviation for subsequent comparison.

Table 3. Mean and Standard Deviation Scores of the Experimental and the Control Group's Pretest

Group	N	Mean	Std. Deviation
EG	18	9,7222	3,33970
CG	18	9,0972	2,38429

Source: SPSS ver.25 Outputs

The difference in the pretest means' scores between the experimental and the control group registered 0.62, indicating no statistically significant discrepancy.

To consider variability within the data and ensure that the homogeneity is not likely due to chance, the independent samples t-test was used in the baseline characteristics of the experimental and the control group before the intervention. The following results were obtained by performing the independent samples t-test in SPSS (table 4)

Table 4. Independent Samples T-test for the Pretest Scores

	Levene's Test		t-test for Equality of Means				
	F	Sig.	T	df	Sig.2-tailed	Mean Difference	Std. E Difference
Equal variances assumed	1,407	,244	,646	34	,522	,62500	,96720
Equal variances not assumed			,646	30,756	,523	,62500	,96720

Source: SPSS ver.25 Outputs

As revealed in the above table, the calculated level of significance p-value is **0.52** (sig.>0.05) which exceeds **a=0.05**, affirming that there is no statistical difference between the two groups. Thus, the homogeneity assumption which is crucial for the validity of subsequent comparison is confirmed. Additionally, this is important to ensure that the any post-intervention differences will be attributed to the treatment.

4.2. The Post-test

After the completion of the teaching intervention, both groups (the experimental group and the control group) received the post-test to measure if there is a significant increase in the performance of the experimental group. The post-test scores determines whether the observed changes in the experimental group can be attributed to the treatment. The post-test results passed through the same procedure as in the pretest.

Table 5. Post-test Scores for the Experimental Group and the Control Group

The EG ID	Scores	The EG ID	Scores	The CG ID	Scores	The CG ID	Scores
1001	14,00	1010	12,00	1019	11,75	1028	7,00
1002	15,50	1011	18,00	1020	10,00	1029	7,50
1003	13,00	1012	13,00	1021	9,00	1030	6,00
1004	12,00	1013	14,00	1022	6,00	1031	13,00

1005	12,00	1014	14,00	1023	14,00	1032	11,00
1006	14,00	1015	13,00	1024	11,00	1033	10,50
1007	9,00	1016	17,00	1025	9,50	1034	10,00
1008	16,00	1017	14,00	1026	5,00	1035	8,00
1009	9,00	1018	13,00	1027	8,00	1036	7,25

Source: Prepared by the Researcher based on the Post-test Scores

The table above (table 5) displays the post-test scores of both the experimental and the control groups following the intervention period. Upon initial visual inspection, it is apparent that there is a discernible improvement in the experimental group's scores after being exposed to the transmedia storytelling materials. However, to substantiate this visual observation, it was imperative to conduct a statistical comparison of the means of both groups. This, in fact, was run using SPSS ver.25 which generated the following table (table 6).

Table 6. The Mean and Standard Deviation of the Experimental Group and the Control Group

Group	N	Mean	Std. Deviation
EG	18	13,4722	2,32930
CG	18	9,1389	,49738

Source: SPSS ver.25 Outputs

The mean ranks and standard deviations of the EG and the CG regarding the post-test scores are remarkably different. The experimental group had a mean score (n=18) of (13.47) with a Standard Deviation (SD= 2.32), while the control group (n=18) exhibited a mean score of (9.13) with a Standard Deviation (SD=.49). Unlikely, the pretest results demonstrated no difference between the two groups. On the contrary, the mean ranks of the post-test's results in both groups reveal that there is a statistically significant difference. Since we have two distinct non-overlapping samples of participants (control and experimental), the independent-samples t-test was used so that we uncovered the following results.

Table 7. Independent Samples t-test for the Post-test Scores

	Levene's Test		t-test for Equality of Means				
	F	Sig.	T	Df	Sig. 2-tailed	Mean Difference	Std. Error Difference
Equal variances assumed	,566	,457	5,383	34	,000	4,33333	,80494
Equal variances not			5,383	33,836	,000	4,33333	,80494

assumed						

Source: SPSS ver.25 Outputs

The data that are demonstrated in Table 7 above displays the independent samples t-test of the post-test scores regarding the experimental group and the control group. Employing the independent samples t-test aimed at confirming that there is a significant statistical difference between the experimental and the control group. In the present post-test, the calculated t-test score registers at (5.38), and the level of significance P-value is (0.000) that is less than (0.05). Subsequently, the null hypothesis H0 postulating no statistically significant difference between the Experimental Group and the Control Group in the development of their learning autonomy skills in the post-test is rejected.

To ensure more validity and reliability, a paired samples t-test is implemented within the group (the experimental group). The results are best summarised in the following table (table 8).

Table 8. Paired Samples t-test

	Mean	Std. Deviation	Std. Error Mean	t	df	Sig 2-tailed
Pretest scores Posttest scores	-1,89583	4,29800	,71633	-3,35007	35	,012

Source: SPSS ver.25 Outputs

According to the results that are generated by an SPSS Ver 25, it is demonstrated that the post-test scores are significantly higher than the pretest scores. Moreover, the mean difference between the experimental group pretest scores and post-test scores (4.29800) suggests more variability. Besides, the confidence interval of the difference highly supports the alternative hypothesis by providing values that registers - ,44160 at its low level and 2,647 at its upper score. The p-value (0.012) which is less than the significance level p=0.05 indicates that there is statistically significant difference that gives confidence to reject the null hypothesis. Equally important, the observed difference (-1.89583) is unlikely to be attributed to chance. This means that the teaching intervention in which transmedia storytelling was used with the experimental group provides positive results in terms of developing Algerian EFL learners' autonomous learning.

5. Discussion of the Findings

The present study aims at investigating the effectiveness of transmedia storytelling on enhancing EFL learners' autonomous learning. Upon analysing the experimental results of the pretest and post-test, it is evident that transmedia storytelling is an effective educational tool for fostering learners' autonomous learning in EFL contexts. Correspondingly, the statistical analysis of the pretest results provided evidence that there was no statistically significant difference between the experimental group and the comparison group. In other words, the homogeneity between both groups in the pre-experimental phase ensured that any future measured progress or change within the experimental group is not due to prior disparities but rather to the treatment. By contrast, the results that were obtained after conducting the post-test supports our alternative hypothesis (H1); since the obtained p-value was well below p=0.05, we had enough confidence to confirm the H1 hypothesis that integrating transmedia storytelling materials into EFL classrooms will develop EFL learners' autonomy.

Through implementing transmedia stories in the EFL classroom, learners who were assigned to the experimental group demonstrated higher engagement and motivation due to the interactive nature of the transmedia storytelling materials. Thus, they demonstrated higher abilities in directing their own learning. This approach to language education encourages EFL learners to independently delve into the available transmedia platforms that tremendously offer a dynamic interactive learning experience.

6. Conclusion and Recommendation

Developing learners' autonomy has sparked the interest of many scholars, pedagogues and educationalists in the field of EFL learning and teaching towards investigating effective approaches that would enhance learners' abilities to take in charge their own learning. Likewise, this present study attempted to test the efficacy of adopting transmedia storytelling

approach in developing EFL learners' autonomy. Transmedia stories are great pedagogical tools in their own right, but when they are implemented in this area of research, their depth, power and variety are immeasurable.

In order to achieve the aim underlying this current study, we have opted for a true experimental design. Accordingly, 36 third-year pupils at Zerrougui Amar Secondary School were randomly assigned to the experimental and the control group. Both of the groups received a pretest in the outset of the experiment and a post-test at its end. Only the experimental group was subjected to a 16-week period treatment; whereas, the control group was taught through the usual teaching approaches. Results that were processed through SPSS Ver 25 showed a statistically significant difference regarding the improvements within the experimental group. On these grounds, the alternative research hypothesis (H1) which calls for the effectiveness of transmedia storytelling in developing EFL learners' autonomous learning is confirmed.

Following these findings, some recommendations are formulated for educators and curriculum developers in the field of EFL teaching and learning. As such, educators are encouraged to integrate transmedia storytelling into EFL curricula to foster autonomous learning. Moreover, encouraging collaboration between EFL researchers and media professionals would advance transmedia storytelling's effectiveness on the 21st century skills in diverse educational settings.

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