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Studying flow in writing tasks from different genres: A pilot study

This pilot study aimed at examining the reliability of a flow questionnaire that could potentially be used for investigating flow during writing tasks in the future. Moreover, it investigated the relationship of different flow components with learners' performance on specific English writing tasks and attempted to use the flow construct to examine the relationships between different writing genres and the amount of language output produced by the participants. To achieve these aims, a quantitative study was conducted using two different writing tasks; narrative and argumentative essays, followed by a flow questionnaire which was filled out by 103 English language learners (ELLs) studying in Hungarian schools and universities. According to the results of the reliability analysis, the piloted instrument is reliable and can be used for further research. Moreover, ELLs reported a moderate flow experience in writing regardless of the genre of the task, and the level of flow learners experienced while performing either of the tasks had no correlation with the length of paragraphs produced by them. The results of this study have apparent implications for language teachers to use writing tasks from the persuasive essay genre as it has been found that students feel more in control of their performance and have a clearer vision of what they need to achieve in such writing tasks.

Keywords**:** flow, task-specific flow, engagement, writing genres, pilot study.

1. Introduction

1.1 Flow theory

In recent decades, the psychological phenomenon known as *flow* has garnered attention as one of the factors resulting in a positive language learning experience (e.g., Czimmermann & Piniel, 2016). The concept of flow, introduced and popularized by Csíkszentmihályi (1990), describes a state of mind in which individuals feel fully engaged and immersed in an activity. He also describes flow as an experience during which tasks and activities seem effortless, even when considerable physical or mental resources are required. Other researchers consider flow to be the highest level of what has been called *engagement* (e.g., Aubrey et al., 2022; Lambert et al., 2017). According to Aubrey et al. (2022), learners can reach flow when their engagement elevates to a high level as they consider flow to be an ultimate state of engagement. Moreover, Schmidt (2010) defined flow as "a state of optimal experience characterized by total absorption in the task at hand; a merging

of action and awareness in which the individual loses track of both time and self" (p. 605).

Given the observable benefits of flow in various fields including sports and art (Csikszentmihalyi, 1990), its impact on other fields, including language learning and production, has drawn attention. A foundational study by Egbert (2003) investigated how flow theory can be integrated into the foreign language classroom to enhance students' language learning experiences by monitoring and analysing the experiences of 13 students enrolled in a college-level Spanish language course in the United States. Participants had to perform seven language learning activities targeting various skills (i.e., reading, discussion, electronic chats, and e-mail exchange), with data gathered through student questionnaires, interviews, and classroom observations. The objectives of this study were to determine the characteristics leading to the occurrence of flow in the language learning process and to identify the possible benefits which flow may provide. Egbert's findings highlighted that several factors could promote flow in the foreign language classroom, including clear objectives and immediate feedback, challenging tasks appropriate for students' ability levels, a supportive and dynamic learning environment, opportunities for active engagement, and a sense of autonomy and control over the learning process. Moreover, the results showed that reading and computer-based chat tasks were the activities most conducive to flow.

Building on Egberts' (2003) results, subsequent research has investigated the existence of flow and its effect on learner performance in both L1 and L2 language learning tasks. Azizi and Ghonsooly (2015) explored the flow experiences of language learners during specific language learning tasks, such as reading tasks. Their findings indicate that text genre affects the level of flow experienced by their learners: participants reported higher levels of flow when engaging with expository texts compared to persuasive texts. Abbott (2000) undertook a four-month study to understand how two fifth-grade students expressed their flow experiences while engaged in non-academic writing outside the classroom. The author deduced that a sense of control in areas of writing such as ownership, genre, style, and length enabled students to achieve a state of flow. This finding raises intriguing questions: if L1 writing can be inferred to be a flow-inducing activity, does it include writing in a second language, as well? Furthermore, what characterizes these flow experiences?

1.2 Flow dimensions and measurements

The nature of the flow experience can be characterized by a set of specific dimensions. Jackson and Csíkszentmihályi (1999) introduced a comprehensive list of nine potential flow dimensions, listed below:

(1) Challenge-skills balance: Flow arises from a balance between the difficulty of a given task and the skills of the individual. If the task is too easy or too difficult, anxiety or boredom may occur.
(2) Action-awareness merging: In a flow state, there is a seamless integration of action and awareness. This occurs when the actor and the action become one, with the actor carrying out the task spontaneously and automatically.
(3) Clear goals: Flow experiences include the presence of well-defined goals and objectives which create a sense of purpose and direction.
(4) Unambiguous feedback: Flow experiences are supported by immediate and clear feedback. Such feedback helps individuals enhance their performance.
(5) Concentration on the task at hand: A flow experience is characterized by a state of intense focus or concentration while performing a task or activity.
(6) Sense of control: Flow is accompanied by a sense of control over the task at hand. Individuals believe they have the requisite talents and abilities to complete the given activity. This sense of control fosters confidence and motivation and helps generate flow.
(7) Loss of self-consciousness: In a flow experience, focus shifts from the self to the immediate task. Flow "frees the individual from self-concern and self-doubt" (Jackson & Csíkszentmihályi, 1999, p. 27).
(8) Transformation of time: Those in a flow state often experience a distorted perception of time while performing a task, with time appearing to pass more slowly or quickly.
(9) Autotelic experience: An experience becomes autotelic when it becomes inherently rewarding and worth repeating for the actor. This is similar to the concept of 'intrinsic interest' (Alsayed Ahmad & Albert, 2022; Egbert, 2003).

It is important to note that while these dimensions are commonly cited by those in the field, different researchers may emphasize different aspects or propose additional dimensions to the above framework. For example, Egbert (2003) identified four main flow dimensions (i.e., balance of challenge and skill, focused attention, intrinsic interest, and a sense of control) and a secondary dimension (i.e., enjoyment). This framework informed Ibrahim's (2020) work on sustained flow in language learning. Moneta (2012) offers a different perspective on Jackson and Csíkszentmihályi's

(1999) nine flow dimensions, categorizing these nine flow components as flow antecedents and flow aspects. Flow, he claims, is governed by goals, feedback, and challenge-skill balance, all of which boost focus and facilitate a flow state. Once in this state, the different characteristics of flow develop and vary in degree from person to person, including control, merging of awareness and action, autotelic experience, loss of self-consciousness, and distortion of the sense of time.

Flow theory incorporates various measurements to assess the flow experience. Moneta (2012) presents the three primary methods: the flow questionnaire (FQ), the experience sampling method (ESM), and the standardized scales of the componential approach.

In the FQ, which is the first tool designed to measure flow, respondents are asked to name the definitions of flow explaining the situations and activities in which they experience flow and evaluate their subjective experiences while engaging in flow-inducing activities. These questionnaires are usually designed by selecting and synthesizing some of the intuitive and profound descriptions of flow and its dimensions. In contrast, the ESM measures time spent in a flow state throughout the course of a day, as well as the spectrum of subjective experiences which accompany it (Moneta, 2012). The method seeks to gather a sample of experiences typical of the population by periodically prompting subjects to complete a questionnaire at random points while undergoing their daily routines. Lastly, the standardized scales of the componential approach examines the balance between a task's perceived challenges and an individual's perceived skills or abilities by quantifying the two aspects. According to this approach, individuals are more likely to experience flow when the challenges of a given task match their skills level.

As this study aims at describing English language learners' flow experiences during a specific writing task, the FQ approach was deemed the most fitting instrument for measuring task-specific flow. As Moneta (2012) highlights, the FQ provides a precise and unambiguous definition of flow, enabling comparisons of its prevalence across demographics such as gender, age group, occupation, and culture. Furthermore, it does not assume a universal or specific experiences of flow, making it apt for assessing the prevalence of flow in particular situations.

Additionally, in crafting a suitable FQ the author of the present study combined the flow dimensions from Jackson and Csikszentmihalyi (1999) and Egbert's Flow State Scale (2003). The unambiguous feedback dimension was not included since the participants did not receive feedback regarding their writing task performance. Moreover, the autotelic experience dimension was replaced by intrinsic interest construct, which was deemed more pertinent to the task the participants were

required to perform. The remaining dimensions were adjusted and adopted in the task-specific FQ due to their relevance to the present study.

1.3 Flow in writing

Writing is often deemed the most difficult language skill to acquire (Husna, 2017; Tangpermpoon, 2008). This is especially the case for learning academic writing (Dalsky & Tajino, 2007), which serves as a primary medium through which individuals develop and demonstrate their academic literacy. As emphasized by Spack (1997) and Pawan and Honeyford (2009), without academic literacy— which equips learners with essential linguistic and cultural tools for producing and comprehending diverse text genres—university entrance is unattainable.

Writing is an inherently complex process. Bazerman et al. (2017) posit that each instance of writing involves multiple interconnected processes which rely on different areas of development and are influenced by various elements such as biology, culture, social interactions, and language. The act of writing not only produces context-specific meanings which align with the writer's goals, but also occurs internally, drawing on the writer's accumulated experiences of meaning-making, linguistic experiences, social connections, and communicative encounters. This internal process interacts with the external world, encompassing interactions with others, the use of technology, and engagement with relevant texts. The writer's thinking incorporates knowledge about the world, the topic at hand, and text forms and structures, as well as high-level executive functions (i.e., planning, monitoring, evaluating, and revising the writing process) and low-level functions such as inhibition and rapid automatic switching (Bazerman, 2013; Berninger & Chanquoy, 2012).

Berninger and her colleagues have examined several aspects of writing in both multilingual and monolingual writers, highlighting several factors influencing the writing process and development. Among these factors, transcription (i.e., handwriting and typing skills), vocabulary and syntactic development, social and emotional awareness, cognitive aspects such as IQ and Rapid Automated Naming (RAN) of letters or words, as well as reading comprehension and its relationship to text production, have all been shown to influence an individuals' writing process and development (Berninger & Chanquoy, 2012; Berninger & Winn 2006; Berninger et al., 2002; Berninger et al., 2010). For a comprehensive discussion, see Berninger and Chanquoy’s (2012) and Berninger and Winn (2006). With these insights in mind, key questions might arise: How does with the concept of flow fit into this context, and how can learners benefit from the flow state to better understand and improve their writing?

Given the complex nature of the writing process and its development, it is important for language instructors to assist writers in managing these various internal and external processes and circumstances to facilitate effective writing. Recognizing this, as it has been shown to have a positive impact on language learning and production (Egbert, 2003), several researchers have investigated the possibility of experiencing flow in writing, as well as the kinds of writing tasks which evoke flow in language learners (e.g., Dewaele & Maclyntyre, 2018; Perry, 1999; Robinson, 2009). Leahy (1995), for instance, explored the concepts of flow and writing enjoyment, aiming to understand their implications for both writers and tutors. Leahy conducted a survey among students in his technical classes and Writing Centre staff using a questionnaire which focused on participants' positive writing experiences without explicitly using the term "flow". Instead, the questionnaire prompted participants to recount moments when they had had an enjoyable writing experience or when the writing process had gone particularly smoothly. The responses from both groups revealed characteristics similar to those of flow, such as an easy flow of ideas, sustained energy, and a diminished awareness of time passing. Leahy suggests that asking writers about their flow experiences can offer insights into their strengths and build upon them.

Examining a different context and with a different population, Perry (1999) conducted research on flow in creative writing. Utilizing qualitative methods, she interviewed professional writers to gather their experiences, which were synthesized to explore their underlying causes and commonalities. Her findings suggested that intrinsic motivation and self-choice were key factors for initiating and sustaining flow, while external pressure produced negative effects. The presence of consistent and relevant feedback, combined with established routines and writing practices, was shown to be beneficial for maintaining focus and flow over time. However, Perry emphasized that there is no universal method for achieving flow in writing, as each writer must develop their own habits and routines tailored to their individual writing processes. A technique which benefits one writer may not be effective or may even be detrimental for others.

Furthermore, Abbott (2000) studied how two fifth-grade students described their flow experience during self-sponsored writing (i.e., non-academic writing which occurs outside the university or classroom setting). She found that these students reported experiencing flow when they had control over different aspects of writing, such as ownership, genre, style, and length. In a recent interview study on English majors' flow experiences in writing, Alsayed Ahmad and Albert's (2022) participants reported several task features which had an influence on their performance and their flow experiences, such as the required length of the writing task, the clarity of task

instructions, and genre. In connection with task genre, participants reported feeling more engaged when writing texts from particular genres compared to others.

Building on the findings of Alsayed Ahmad and Albert (2022), the current study aims to quantitatively measure the flow experiences of English language learners in the Hungarian context using two distinct essay writing genres: argumentative and narrative. The following section provides a brief overview of these genres and the rationale behind their selection.

1.4 Genre

The term *genre* has previously been used to refer to various literary texts; however, it was later redefined by Swales (1990) as a set of communicative events in which participants share a communicative purpose. These purposes are perceived by "the expert members of the parent discourse community" (p. 39). Elaborating on the concept, Hyland (2008) added that genre "is a term for grouping texts together, representing how writers typically use language to respond to recurring situations. It is, in other words, both a social and a cognitive concept" (p. 544). Regarding its application in writing, Soliday (2011) stated that "genre is a social practice through which writers interact with readers. As a social practice, genre links the expectations of individual readers and writers to those of larger social groups" (pp. 2–3).

Genres can be grouped into different families based on their characteristics and purposes. Nesi and Gardner (2012) identified 13 genre families, which included case study, critique, design specification, empathy writing, essay, exercise, explanation, literature survey, methodology recount, narrative recount, problem question, proposal, and research report. Within the essay genre, the American Psychological Association (APA) (2020) also includes sub-genres or types in its categorization such as cause-and-effect essays, comparative essays, expository essays, narrative essays, and persuasive essays. These classifications aid in highlighting the specific characteristics and expectations associated with different writing genres.

1.4.1 Narrative vs. argumentative genre

Argumentative and narrative texts fall under two separate discourse genres. Each serves a particular communicative purpose and is mastered at a particular stage of language acquisition (Qin & Uccelli, 2016). According to Schleppegrell (2004), the process of acquiring new genres in one's native language can be categorized into three stages: personal genres (e.g., narratives), factual genres (e.g., news reports), and analytical genres (e.g., argumentative essays). This developmental order of genre acquisition is bolstered by empirical research. For instance, Berman and Nir-Sagiv (2007) found that while learners acquire narrative writing patterns around age 10, the

mastery of argumentative writing is a later developmental milestone. Similarly, Scott and Windsor (2000) and Hall-Mills and Apel (2013) found that students in middle or high school tend to demonstrate more strength in narrative writing than in argumentative essay composition. This progression towards acquiring academic literacy is part of what Ravid and Tolchinsky (2002) called 'later language development' (p. 418), which encompasses the linguistic development of learners' post-preschool writing skills.

This observed developmental sequence can be understood by considering the distinct language and cognitive requirements associated with each genre. Narrative writing, which is centered on individual lives, events, and actions, is more personal and individual-oriented. In contrast, argumentative essays are topic-oriented and necessitate the use of logical linguistic structures to coherently link ideas. Writers are required to organize claims and arguments in a hierarchical format, presenting them in a step-by-step manner (Qin & Uccelli, 2016). From a micro-level language perspective, argumentative texts are characterized by greater syntactic complexity and incorporate more complex structures and less-frequent vocabulary (Berman & Nir-Sagiv, 2007).

The current study employs two writing tasks (representing argumentative and narrative essay genres), to assess the flow experiences of English language learners in Hungarian schools and universities. The selection of these two genres was initially motivated by the authors' desire to 1.) investigate the likelihood of experiencing flow in these two significantly different writing genres and 2.) to determine whether the different stages in which the genres are acquired, and their distinct cognitive and linguistic requirements have an impact on learners' flow experiences. Moreover, according to Alsayed Ahmad and Albert's (2022) interview study which inspired the current research, these two essay genres were preferred by their cohort of English learners. In addition, the APA Publication Manual (2020) cites argumentative essays as predominant essay types in education. Accordingly, these two essay genres were purposefully selected for this investigation.

1.5 Aims and research questions of the study

Given the limited research on flow in writing and the fact that the majority of previous research on this topic focused on either native speakers of the language or professional writers, there is a need to investigate flow in writing in the context of foreign language learning. The importance of this investigation lies in the fact that it can equip language teachers with insights to improve their learners' writing skills by facilitating flow experiences. Moreover, this study aims to determine whether

writing genres affect the fluency of language learners' production and their possible flow experiences.

The current study aims at answering the following research questions:

(1) How reliable is the instrument for measuring the flow experiences of ELLs across different writing tasks?
(2) Does the level of flow experienced by ELLs correlate with the fluency of the essays they produce?
(3) Do different writing genres result in different levels of flow as reported by ELLs?

3. Methodology

3.1 Participants

A total of 103 participants took part in this study, with most of them studying the English language at Hungarian schools and universities. The mean age of the participants was 19.03 (SD = 6.29). High school students participating in the study ranged in age from 16 to 18 and university students from 19 to 40. Due to the convenience sampling method employed in the study, the gender distribution of the sample was not equal: 59.2% (n = 61) of participants identified themselves as females and 40.8% (n = 42) as males. Of the university student participants (n = 22), 12 were international students studying in Hungary. Regarding English proficiency, 81 of the participants were upper-intermediate English language learners studying at a Hungarian high school, and 22 were advanced English language learners from Hungarian universities. The English language proficiency of the high school participants was gauged both by their self-reports and by the assessment of their English teacher. University students also self-reported their proficiency level; these self-assessments were deemed accurate given the strict English language proficiency requirements for admission into the English-language graduate program in which they took part. Prior to filling in the questionnaire, 51 participants completed the narrative essay writing task, while 52 of them were asked to complete the argumentative essay writing task.

3.2 The instrument

To address the research questions, a pilot study was conducted for the quantitative instrument. A 43-item flow questionnaire was developed based on previous literature and by adopting several questionnaire items from the Flow State Scale by Jackson and Marsh (1999). This Flow State Scale consists of 36 Likert-scale items ranging from 1 (strongly disagree) to 5 (strongly agree) spanning the nine different

dimensions of flow introduced by Csíkszentmihályi (1990). For the purposes of the current study, seven dimensions out of the nine were deemed pertinent and adopted from the Flow State Scale. These seven dimensions, which were considered essential in most of the flow studies and were believed to be applicable to the nature of the current study and to be reported by the participants, are the following: challenge-skills balance, action-awareness merging, the transformation of time, clear goals, concentration on the task at hand, sense of control, and loss of self-consciousness. The dimensions of unambiguous feedback and autotelic experience were omitted due to the design of the study. The unambiguous feedback dimension was omitted since the participants completed a task outside the classroom setting and did not receive feedback while performing the task or after finishing it. Furthermore, because most of the participants were not professional writers and because their writing task was relatively short and likely considered a low-stakes assignment as it was not graded, the researcher was skeptical that such a writing task would produce autotelic experiences. In other words, it is unlikely that completing such a task would be intrinsically rewarding in the same way as a sport or physical activity for which the original flow scale was developed. However, writing an essay can still be an enjoyable and engaging activity, which is believed to be part of the notion of autotelic experience; hence, an "interest" dimension was adapted from Egbert's (2013) Perceptions Questionnaire and added to the flow questionnaire in the present study. Several studies have shown that learners' engagement increases when a task provokes their interest and produces a desire to complete it (e.g., Egbert, 2003; Lo & Hyland, 2007). Hence, the questionnaire explored a total of eight dimensions, which were documented in Alsayed Ahmad and Albert's (2022) interview study on English language majors' flow experiences in writing.

Out of the 43 items of the Flow State Scale (Jackson & Marsh, 1999), 15 items were adopted to the Task-specific Flow Questionnaire developed for the present study; 5 items were adopted from Egberts' (2003) Perceptions Questionnaire. The remaining items were developed by the author based on existing literature on flow. The developed questionnaire has been titled Task-specific Flow Questionnaire, reflecting the performance of the specific writing task that the students were asked to complete. The instrument consists of five-item Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree) and concludes with a section collecting biographical information.

In order to ensure the content validity of the instrument, the items were peer debriefed by two researchers. Additionally, expert judgements were solicited from two experienced and well-known researchers in the field of Applied Linguistics. After the items were pooled, a think-aloud protocol was conducted before

distributing the questionnaire, which resulted in the rephrasing of two potentially problematic items.

The eight dimensions investigated by the instrument and a sample item for each are presented below:

(1) **Task-specific challenge-skills balance:** This scale consists of 5 items, e.g., "My abilities matched the challenge of the task.", measures whether participants' perceived skills when performing the task and the perceived challenge presented by the task are balanced.
(2) **Task-specific interest:** This scale measures the level of interest and engagement in the task at hand. It consists of 6 items, e.g., "This task was fun."
(3) **Task-specific attention:** This scale consists of 6 items, assesses learners' level of concentration on the task at hand, e.g., "While doing the task, I was concentrating on my performance only."
(4) **Task-specific control:** Measures the feeling of being in control of the situation and able to make decisions regarding how to proceed in a certain task to facilitate experiencing flow. This scale consists of 5 items, e.g., "I was in control of my performance during this task."
(5) **Action-awareness merging:** This scale consists of 5 items, e.g., "I did things spontaneously without having to think." It measures the feeling of loss of awareness and feeling united with the action one is performing.
(6) **Loss of self-consciousness:** This scale consists of 6 items, e.g., "I was not worried about what others might think of my performance.", measures the extent to which participants lose their ego when they are engaged in a task.
(7) **Transformation of time:** This scale measures participants' perception of time and its possible distortion when they are in a flow state, and it consists of 5 items, e.g., "The way time passed seemed to be different from normal."
(8) **Clear goals:** This scale consists of 5 items, e.g., "I knew clearly what I wanted to do.", assesses the extent to which participants felt that having clear task goals helped them to experience flow.

To examine the effect of task genre on learners' flow experiences and task performance, the questionnaire was preceded by a writing task from one of two essay genres (see Appendix B). Here, the term *genre* refers to the social practices writers employ to communicate with their readers (Soliday, 2011). Essentially, genre is used in this study to describe different ways of communicating through writing. Prior to filling out the questionnaire, half of the sample completed the narrative essay writing

task while the other half were tasked with the argumentative essay writing task. The narrative essay task (i.e., writing a short story) was taken from Sun and Nippold's (2012) study and was altered to suit the proficiency level of the participants. The argumentative essay task, which prompts students to discuss the benefits and drawbacks of the Internet, was taken from Ong and Zhang's (2010) study without modification. Participants were encouraged to write a minimum of 150 words for both tasks to ensure that they spent enough time brainstorming, organizing, and writing down their ideas. However, this was merely a suggestion, and individuals who chose to write fewer words were still able to submit their essays.

3.3 Data collection

Two separate Google forms were utilized for data collection, each containing the task-specific flow questionnaire. One form included the narrative essay writing task while the other featured the argumentative task. Both forms were distributed evenly among the 103 participants. All participants were asked to confirm their voluntary participation before filling out the questionnaire through a consent form included at the beginning of the 76uestionnnaire. In addition, an English language teacher served as a gatekeeper, facilitating communication between me and the students at the Hungarian high school. Given that all the participants were over 15 years old and that no personal information about them was collected, parental consent forms were not required for the data collection process (European Union Agency for Fundamental Rights (FRA), 2014). Both the questionnaire and the writing task were completed online. The data collection process lasted approximately two weeks and took place in April 2021.

3.4 Data analysis

The responses of the 103 participants were automatically exported into an Excel spreadsheet. After the data was manually cleaned and prepared, it was analyzed with the Statistical Package for the Social Sciences (SPSS) version 25. All the negative items were reversed except for the items of the Loss of Self-consciousness scale, as all the items in the scale were negative and there was no need to reverse them. All the 43 Likert-scale items were coded as follows: (1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree). Descriptive statistical procedures were used to describe the sample (see Participants) while other statistical tests such as Independent Samples t-test and Bivariate Correlations were used to answer the research questions. Furthermore, the fluency of the participants' essays was measured using the *total words produced* measurement. According to Johnson's (2017) synthesis of prior studies, L2 researchers (e.g., Choong, 2014; Johnson, 2011;

Ruiz-Funes, 2015) have mostly employed length-based measures such as total words produced and words per minute as a measure of fluency in written texts. Accordingly, to ascertain the correlation between participants' flow experience and their text fluency, the number of words each participant produced was counted using Microsoft Office Word after checking the texts for typos.

4. Results

Reliability analysis was employed to assess the reliability of the questionnaire scales. One method of assessing questionnaire reliability is to evaluate its internal consistency through a pilot study — "the extent to which items on the test or instrument are measuring the same thing" (Bolarinwa, 2015, p. 198).

Table 1. Reliability analysis for all scales

Scale	Number of items	Cronbach Alpha
Task-specific challenge-skills balance	5	*0.66*
Task-specific interest	6	0.85
Task-specific attention	6	0.84
Task-specific control	5	0.80
Action-awareness merging	5	*0.70*
Loss of self-consciousness	6	*0.66*
Transformation of time	5	*0.77*
Clear goals	5	*0.80*

Note: Cronbach Alpha values which were changed after the Principal Component Analysis are in italics.

According to Bolarinwa, the coefficient alpha is the most common metric for gauging the internal reliability of multiple-response items with multiple response options, thus proving useful for this pilot study. Cronbach alpha values were computed for each scale (see Table 1). Two of the scales had a Cronbach Alpha value lower than 0.7 but above 0.6, indicating that all the scales were reliable. According to Dörnyei (2007), "we should aim at reliability coefficients in excess of 0.70; if the Cronbach Alpha of a scale does not reach 0.60, this should sound warning bells" (p. 183).

To ensure that each scale in the current study measures a single dimension, Principal Component Analysis (PCA) was carried out on all the scales to identify items which did not load onto their respective scales. Based on the PCA results, one item from each of the following scales was deleted: transformation of time, loss of self-consciousness, clear goals, challenge-skills balance, and action-awareness merging. As a result, there was an increase in the Cronbach Alpha values (see Table 2). According to the reliability analysis, the task-specific interest scale was found to

be highly reliable (6 items; $\alpha = 0.85$). After reaching satisfactory Cronbach Alpha values, the total number of items in the Task-specific Flow Questionnaire was reduced to 38 out of 43 items (see Appendix A).

Table 2. Reliability analysis for all scales after PCA and item deletion

Scale	Number of items	Cronbach Alpha
Task-specific challenge-skill balance	4	0.73
Task-specific interest	6	0.85
Task-specific attention	6	0.84
Task-specific control	5	0.80
Action-awareness merging	4	0.76
Loss of self-consciousness	5	0.79
Transformation of time	4	0.79
Clear goals	4	0.82

As a next step, scales were computed by calculating the mean values of all the items belonging to the same dimensions, culminating in a total of 8 scales. To investigate whether different writing genres result in different levels of flow during the performance of writing tasks, an independent samples t-test was conducted between the task genres and the eight flow dimensions (see Table 3). Based on this t-test, all the scales, except for the Task-specific Control and Clear Goals, yielded a p-value higher than 5%, showing that the differences we see between the two mean values of the narrative and argumentative essay tasks is not significant. However, a significant difference emerged in the scores of the Task-specific Control scale ($t = -2.67$, $p = 0.01$) between the narrative essay writing task ($M = 3.80$, $SD = 0.80$) and the argumentative essay writing task ($M = 4.16$, $SD = 0.58$). In addition, a significant difference was found in the scores of the Clear Goals scale ($t = -2.44$, $p = 0.02$) between the narrative essay writing task ($M = 3.51$, $SD = 0.95$) and the argumentative essay writing task ($M = 3.97$, $SD = 0.93$).

Table 3. Independent Samples T-test results

	Task genre	N	Mean	SD	t	Sig(2-tailed)
Task-specific challenge-skill balance	Narrative	51	3.83	.80	1.39	0.17
	Argumentative	52	4.03	.66		
Task-specific interest	Narrative	51	3.65	.83	0.11	0.91
	Argumentative	52	3.63	.85		
Task-specific attention	Narrative	51	3.59	.93	0.71	0.48
	Argumentative	52	3.47	.75		
Task-specific control	Narrative	51	3.80	.80	2.67	0.01
	Argumentative	52	4.16	.58		
Action-awareness merging	Narrative	51	3.72	.87	0.56	0.57
	Argumentative	52	3.81	.79		
Loss of self-consciousness	Narrative	51	2.85	1.01	1.13	0.26
	Argumentative	52	2.63	1.01		
Transformation of time	Narrative	51	3.08	.96	0.55	0.59
	Argumentative	52	2.98	1.02		
Clear goals	Narrative	51	3.51	.95	2.44	0.02
	Argumentative	52	3.97	.93		

By consolidating all eight flow dimensions, a single variable labelled the "Flow Scale" was created. The mean value of the Flow Scale was calculated individually irrespective of essay genre. The resulting mean value (M = 3.54, SD= 0.50) indicates that the participants reported a moderate flow experience in writing independent of the task genre. An additional independent samples t-test was conducted to compare the task genres in terms of the Flow Scale. According to the results (see Table 4), we can see that p-value for the Flow Scale is higher than 5%, (t = -0.82, p = 0.41), suggesting that the difference we see between the mean values for the narrative essay writing task (M = 3.50, SD = 0.53) and the argumentative essay writing task (M = 3.58, SD = 0.46) is not significant.

Table 4. Results of Independent Samples T-test on Task Genre and the Flow Scale

	Task genre	N	Mean	SD	t	Sig(2-tailed)
Flow Scale	Narrative	51	3.50	.53	-.82	0.41
	Argumentative	52	3.58	.46		

Another independent samples t-test was conducted to determine if the participants' level of English language proficiency influenced their flow experiences. The p-value for the Flow Scale exceeded 5% (t = -0.81, p = 0.42), indicating that the difference between the mean values of the B2 (M = 3.52, SD = 0.5) and C1 (M = 3.62, SD = 0.48) proficiency levels was not statistically significant (see Table 5).

Table 5. Results of Independent Samples T-test on Proficiency Level and the Flow Scale

	Proficiency level	N	Mean	SD	t	Sig(2-tailed)
Flow Scale	B2	81	3.52	.50	-.81	0.42
	C1	22	3.62	.48		

Lastly, to examine whether the level of flow experienced by learners affects their performance on the writing task, a correlation analysis was conducted to determine the relationship between the number of words each participant produced and their flow experience (see Table 6). The results from the correlation test suggest that the levels of flow leaners experienced while writing both tasks do not significantly correlate with the length of the produced paragraphs (r= - 0.11, p= 0.27).

Table 6. Correlations between Flow Scale and Number of Words produced by the ELLs

		Flow	Number of words
Flow	**Pearson Correlation**	1	-.110
	Sig. (2-tailed)		.268
	N	103	103
Number of words	**Pearson Correlation**	-.110	1
	Sig. (2-tailed)	.268	
	N	103	103

5. Discussion

This pilot study had several aims. Firstly, it sought to examine the reliability of the developed quantitative instrument. Moreover, it investigated the effect of flow on the performance of English writing tasks. The study also utilized the flow construct to examine the relationship between different writing genres (i.e., narrative and argumentative essay genres in the current study) and task performance. Below, the answers to each research question based on the findings of this pilot study are presented.

The first research question was as follows: How reliable is the instrument for measuring the flow experiences of ELLs across different writing tasks? To answer this question, reliability analysis was conducted to examine the value of Cronbach Alpha for each scale. The results from the reliability analysis showed that the Task-specific Flow Questionnaire utilized in this study is a reliable instrument and can be used for further research. Furthermore, the mean score for flow experience (M= 3.54, SD= 0.50) suggests that the participants in this study experienced moderate flow during the writing tasks irrespective of writing genre or proficiency level. This aligns

with the findings of Dewaele and Maclyntyre (2018) and Alsayed Ahmad and Albert (2022) that students can indeed experience flow in writing.

The second research question investigated whether the level of flow experienced by ELLs correlates with the fluency of their produced texts. Based on the correlation results between flow and word count, there is no significant relationship between the level of flow experienced during writing both tasks and the length of the produced paragraphs. It can thus be concluded that the level of flow had no effect on the amount of written output produced in the specific writing tasks the participants completed. This contradicts Casey's (2019) findings that students who experienced flow produced more sentences than those who did not. The discrepancy between the findings might be related to the fact that the writing task in the present study was ungraded, and thus regarded as a low-stakes assignment.

The third research question was as follows: Do different writing genres result in different levels of flow during the performance of writing tasks? To address the above research question, two independent samples t-tests were conducted. Based on the results, genre-based differences in the sample were identified in connection with having clear goals and the amount of control learners have upon their performance; in other words, learners had clearer goals and felt more in control of their performance during the argumentative essay writing task than during the narrative one. However, based on the second independent samples t-test which was conducted to identify significant differences between the task flow scale and task genres, it can be claimed that there is no significant difference in the level of flow experienced by the participants in relation to writing genre. This finding diverges from Alsayed Ahmad's and Albert's (2022) claim that the genre of the writing task might affect language learners' flow experiences.

6. Conclusion

The main aim of the present study was to assess the reliability of the quantitative instrument intended for future research measuring flow experienced by learners during language tasks. The study also investigated the link between flow and participants' performance on English writing tasks. Utilizing the flow construct, the study also examined the relationship between different writing genres (i.e., narrative and argumentative essay genres in the current study) and task performance. Based on the results, the piloted quantitative instrument proved reliable and valid for use in further research. The most important results which emerged from the data are summarized in the following paragraphs.

According to the findings of this pilot study, ELLs experience flow when writing texts of different genres. However, learners' level of flow had no significant

association with the length of their produced paragraphs. Regarding the relationship between writing genre and flow experiences, the findings suggest that ELLs had clearer goals and felt more in control of their performance when engaged in the argumentative essay writing task compared to the narrative one. One potential reason for this might be that participants prefer the argumentative essay genre over the narrative one. Another possible explanation is the distinct nature of the tasks: while the argumentative essay task prompted participants to express their opinions on a specific topic, the narrative essay presented a broader, more general topic. Given these findings, teachers might consider administering more persuasive essay tasks to their language learners to facilitate flow experiences, which, in turn, would result in enhancing their language learning experiences and reinforcing their mastery of the language.

Like any research endeavor, this pilot study is not without its limitations. Given its relatively small-scale quantitative nature, the findings may not be entirely representative. Moreover, the current pilot study compared only two genres of writing due to the small sample, and used a task performance measurement, namely fluency, to determine the associations between flow and written language production, making it difficult to judge the quality of the produced texts based on the results. Lastly, it proved challenging to persuade students to invest their time into writing an ungraded essay and completing the flow questionnaire; thus, it proved difficult to convince the same students to perform another writing task and fill in the same questionnaire in a relatively short period of time. This limitation prevents a comparison of individual students' performance and their flow experiences across different writing tasks.

The limitations highlighted above provide clear direction for further research. A mixed method approach, comprised of a questionnaire study followed by qualitative interviews, would provide deeper insight into English language learners' flow experiences when writing texts from different genres, and would aid in the investigation of this area of knowledge from different angles. In addition, future studies should examine the differences between writing genres beyond those explored in the current study in terms of their association with language learners' flow experiences and language production. Such studies could also utilize more comprehensive measurers of task performance, including complexity, accuracy, and fluency. Finally, other variables, such as task characteristics, individual differences, and the effect of the writing medium (e.g., typing versus handwriting) can also be examined in the context of flow theory.

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APPENDIX A

Task-specific flow questionnaire

Now please think about the task you have just done. How did you feel during the task?

(Strongly disagree/ Disagree/ Neither agree or disagree/ Agree/ Strongly agree)

1. This task was challenging.
2. I felt that I could meet the requirements of the task.
3. The task was difficult.
4. My abilities matched the challenge of the task.
5. This task made me curious.
6. This task was fun.
7. I felt that I performed the task smoothly.
8. I don't feel I was very much involved in this task.
9. This task was interesting.
10. This task made me think in a creative way.
11. When doing this task, I was completely absorbed in what I was doing.
12. I was thinking about other things while doing this task.
13. When doing this task, I noticed that I was distracted.
14. My attention wandered while doing this task.
15. While doing the task, I was concentrating on my performance only.
16. I had total concentration while performing the task.
17. During this task I could make my own decisions about how to proceed.
18. I knew exactly what I had to do while performing this task.
19. I was in control of my performance during this task.
20. I felt very confident of my performance.
21. I felt I knew how to do well in this task.
22. I made the correct steps while performing the task without thinking about trying to do so.
23. Things seemed to be happening automatically while performing the task.
24. I could perform the task effortlessly.
25. I did things spontaneously without having to think.
26. I does not bother me if I have not performed well in the task.
27. I was not worried about my performance during the task.
28. I was not concerned with how I was presenting myself in the task.
29. I was not worried about what others might think of my performance.
30. I'm not concerned about how others might judge my performance.
31. The way time passed seemed to be different from normal.

32. It felt like time stopped while I was performing the task.
33. Time seemed to speed up while I was performing the task.
34. Time seemed to pass in a different way than it does usually.
35. I knew clearly what I wanted to do.
36. I knew what I wanted to achieve.
37. My goals were clearly defined.
38. The purpose of the task was very clear to me.

Now please provide the following biographical information:

Gender: female ( ) male ( )
Your age: ___ years
How long have you been learning English? For ___ years.
Do you have an English language exam? yes ( ) no ( )
If *yes*: what kind of exam is it? _____.
If you are interested in participating in an additional interview (online, or in person). please provide your contact your phone number or email address: _____. Thank you for your participation!

APPENDIX B

Pre-questionnaire writing tasks

Narrative essay task:
Before you start filling in the questionnaire, I would like to ask you to write a short story about something funny, sad, or scary that happened to you (a minimum of 150 word)**.** You get to decide what to write about. It can be anything that was funny, sad, or scary. It can also be about a trip that you once went on. If you can't think of something that really happened, you can make it up. It doesn't have to be a true story. You can use your imagination. The title of your story is:
"What Happened One Day"

Argumentative essay task:
Before you start filling in the questionnaire, I would like to ask you to read the following statement and provide an argument (a minimum of 150 word) to support your point of view:
Some people argue that the internet has caused a lot of harm to young people. Others argue that the internet has brought a lot of benefits to young people. What is your opinion? Use specific reasons and examples to support your answer.