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Subtitle Edit vs. Aegisub: A Comparative Study in the Persian Subtitling Classroom[1]

Ali Shojaei[2]
& Sima Ferdowsi[3]

Abstract

This study compares Subtitle Edit and Aegisub to identify the optimal subtitle software and investigates the correlation between participants' theoretical knowledge of subtitling and their practical software competency, providing insights for academic and professional use. Guided by a task-based approach and framed within Kirkpatrick's Model of Evaluation, the research involved 31 translation students who underwent a structured three-phase training program. The participants received theoretical instruction, followed by hands-on practice with both software tools. Data were collected through performance assessments, subtitling tasks, and a validated questionnaire. The results revealed that Subtitle Edit significantly outperformed Aegisub in educational potential and user-friendliness, with higher scores in professionalism and interface intuitiveness. Additionally, a positive correlation was found between theoretical knowledge and practical subtitling performance. The findings advocate for the prioritization of Subtitle Edit in academic settings due to its enhanced pedagogical utility and alignment with industry standards, offering valuable insights for curriculum design and translator training.

Keywords: Aegisub, AVT, Kirkpatrick Model of Evaluation, Subtitle Edit, Subtitle software

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2. M.A. Graduate in English Translation, Department of Foreign Languages, Faculty of Literature and Humanities, Shahid Bahonar University of Kerman, Kerman, Iran; email: alishojaei3114@ens.uk.ac.ir

3. Corresponding Author: Assistant Professor, Department of Foreign Languages, Faculty of Literature and Humanities, Shahid Bahonar University of Kerman, Kerman, Iran; email: sima.ferdowsi@uk.ac.ir

1. Introduction

Individuals aiming to integrate subtitles into audiovisual content face difficulty in choosing appropriate software from the numerous subtitle editing platforms available. Thoroughly testing each tool is impractical, so users need an efficient approach to select software and begin subtitling without spending excessive time on tutorials or reviews. This challenge also applies to educators, who must choose instructional tools that meet varied classroom requirements. Free, offline desktop applications are preferred for their accessibility, ease of instruction, and compatibility with common operating systems. Effective tools should be user-friendly, intuitive, and capable of supporting Persian language. Limited research on subtitle software effectiveness, especially in the Iranian context, further complicates software selection (Daneshgar, 2019). Assessing software functionality and determining the most effective tool can optimize workflows and reduce resource costs for translators, students, and educators.

The present research compares Aegisub and Subtitle Edit by analyzing students' user experiences through a task-based approach. The findings provide practical guidance for students and educators in selecting subtitling software, while also contributing valuable insights to the field of Audiovisual Translation (AVT) research. The software deemed most effective can be integrated into translator training curricula and participants may continue using their preferred tool professionally, thereby enhancing their career readiness. It is reported that AVT training research has barely focused on technology and software due to high degrees of complexity that require a certain level of software proficiency in order to proceed (Khoshsaligheh & Ameri, 2017). This study addresses this gap in AVT research, drawing on the researchers' professional expertise as subtitlers with over two years of experience and mastery of both tools. The study also provides a foundation for future research on new subtitling editors, including cloud- and mobile-based platforms. Specifically, the study attempts to address the following questions:

RQ1. Which software, Subtitle Edit or Aegisub, is most suitable in terms of educational potential and academic application?

RQ2. Which of the five characteristics identified by Daneshgar (2019) predominantly affects the participants' selection of one software over another?

RQ3. To what extent does participants' theoretical knowledge of subtitling principles correlate with their practical performance in using the software?

2. Review of the Literature

2.1. Subtitling Software in Academic Contexts

Research on student perspectives and user experience with subtitling software in academic settings is limited. Daneshgar (2019) highlights this gap, noting a lack of comparative studies. Agulló (2020) emphasizes the importance of usability testing and providing structured tutorials, as demonstrated in the development of the ImAc web-based subtitle editor for 360° videos, where professional subtitlers were given guides instead of self-directed learning. Similarly, Ávila-Cabrera and Talaván Zanón (2021) found that when students were instructed using video tutorials for tools like Amara, Aegisub, Subtitle Workshop, and ClipFlair, an overwhelming majority (95%) preferred Aegisub for its practicality and user-friendliness.

Suggesting the most appropriate and suitable subtitling editors among many others as potential teaching material for a specific context is also an issue not emphasized enough in the body of literature. With that being said, regarding pedagogical effectiveness, several papers recommended and proved the usefulness of teaching and incorporation of subtitle software to translation classroom environments and academic institutions (Basari & Nugroho, 2017; Asmawati, 2020; Bekafigo, 2022). On a similar note, Bekafigo (2022) sought to investigate the educational and didactic potential of desktop-based and cloud-based software to prove her study's first hypothesis, claiming that cloud-based systems such as OOONA

are more efficient than the former at the level of university according to current market demands. While this hypothesis was confirmed to some extent, the differences in results were reportedly insignificant and OOONA EDU cloud-based editor's teaching potential was proved to be almost equal to desktop-based editors such as Subtitle Edit. This study is also closely connected to the present research, in that it has attempted to compare three desktop-based subtitle software, Subtitle Workshop, Subtitle Edit, and Aegisub, and list the positive, as well as negative features of each one. In terms of usability factors, Subtitle Workshop and Aegisub were criticized for their user-unfriendly interfaces. In contrast, the main drawbacks of Subtitle Edit—an imprecise waveform and poor accessibility for visually impaired students—were relatively minor.

Furthermore, from an accessibility standpoint, Subtitle Edit waveform feature has since been improved to a level of precision suitable for spotting, and the software benefits from ongoing developer support (Bekafigo, 2022).

A more recent study conducted by Alaboud (2024) aimed at collecting university students' opinions based on their experience with four subtitling tools, named CaptionHub, Amara, Aegisub, and Subtitle Edit from an activity theory standpoint to discover how translator experiences are shaped during their training process. Similar to the previous studies, a table of strengths and challenges of each tool is provided by the researcher. It is important to note that Subtitle Edit and Aegisub were both praised for their synchronization options, most likely due to their audio waveform features which make the spotting process much simpler and quicker. One participant even went as far as claiming Subtitle Edit as the "perfect" platform since it is capable of translating almost anything (p. 220). This is in contrast to the previous article, in which one participant commented that both Subtitle Workshop and Subtitle Edit have their strengths and weaknesses and that none of them can be called "perfect" (Bekafigo, 2022). Research on subtitle software remains under-explored in

AVT studies in Iran, with a limited body of literature from which to draw comprehensive conclusions. This study addresses this gap by investigating previously unexamined aspects of software comparison. Furthermore, it proposes a structured framework for evaluating subtitle software, thereby contributing a valuable tool for future AVT research.

2.2 Theoretical Framework: Kirkpatrick's Model

This study employs Kirkpatrick's (2006) Model of Evaluation so as to systematically assess the pedagogical effectiveness of Subtitle Edit and Aegisub. The model's four-level structure enables a comprehensive analysis of both immediate usability and long-term educational value, aligning with the research aim of identifying optimal software for academic and professional subtitling contexts. At the Reaction level, participants' subjective experiences—such as interface navigation, Persian-language support, and right-to-left (RTL) script compatibility—were evaluated, linking directly to Daneshgar's (2019) factors of user-friendliness and requirements while addressing RQ1. The Learning level measured acquired skills through task-based assessments, examining participants' mastery of core functions like synchronization and text formatting, thereby informing RQ1 and RQ3. The Behavior level assessed real-world application, including timing accuracy and adherence to Persian typographic norms, to identify factors influencing sustained software use (RQ2). Finally, the Results level considered broader impacts, such as curriculum integration and professional adoption, addressing the study's goal of optimizing workflows and reducing resource costs. This structured approach ensures a holistic evaluation of the software's pedagogical suitability.

3. Methodology

3.1 Research Design

This study employs a quantitative, comparative research design (Saldanha & O'Brien, 2014) to objectively evaluate the performance and usability of Aegisub and

Subtitle Edit through statistical analysis. As an empirical and product-oriented (Munday, 2016) investigation, it focuses on analyzing concrete outcomes derived from participants' practical interactions with the software, ensuring a data-driven comparison of their pedagogical effectiveness.

3.2 Participants

The study involved 31 (22 female, 9 male) translation undergraduates selected through convenience sampling based on their availability and willingness to participate. All participants were enrolled in the 'Audiovisual Translation' course at the time, where they received systematic instruction on the theoretical foundations of subtitling based on Díaz-Cintas and Remael (2020), hence it was an appropriate period to participate in this research.

3.3 Instruments

The study employed three instruments for software training, evaluation, and data collection. The two subtitle editors under evaluation, Subtitle Edit (v4.0.8) and Aegisub (v3.4.0), were selected based on five key criteria to ensure a controlled and meaningful comparison: their free availability, cross-platform compatibility, comprehensive support for Persian language and RTL script, intuitive user interfaces, and integrated audio waveform visualization for precise synchronization. To standardize training, two custom instructional video tutorials were developed by the researchers—one for each software. A 60-minute foundational tutorial covered core subtitling principles and essential functions, while a 35-minute advanced tutorial reinforced complex techniques; both were presented in-class and provided for at-home review to ensure consistent exposure. Finally, the participants' perceptions were captured using a Persian-language questionnaire (Daneshgar, 2019), which measured software functionality across five dimensions—usability, user-friendliness, speed, professionalism, and requirements—through 40 Likert-scale items (1 = strongly disagree, 5 = strongly agree). The reliability of the multi-item scales was satisfactory, with Cronbach's alpha coefficients ranging from 0.67 to 0.77.

3.4 Data Collection Procedure

Data collection was structured around a task-based framework, comprising three sequential phases. In the pre-task phase, the participants received six hours of theoretical instruction on subtitling principles based on Díaz-Cintas and Remael (2020), followed by a written examination to assess comprehension. The task phase involved hands-on training with both Subtitle Edit and Aegisub, including in-class demonstrations via video tutorials, supervised lab practice subtitling a standardized clip, and an analogous unsupervised home task with a different video to reinforce learning. The post-task phase immediately followed each software's practice cycle, during which a validated questionnaire—adapted from Daneshgar (2019)—was administered to capture participants' perceptions across the five predefined dimensions of software functionality.

3.5 Data Analysis

Data analysis was conducted on three fronts. The participants' theoretical knowledge was evaluated via mid-term examination scores. Practical performance was assessed through the analysis of the submitted subtitle files, evaluating criteria such as synchronization accuracy, subtitle positioning, line breaks, adherence to duration limits, and correct implementation of Persian RTL formatting. Finally, questionnaire responses were analyzed using SPSS (Version 28) to evaluate user perceptions across Daneshgar's (2019) five criteria: usability, user-friendliness, speed, professionalism, and requirements.

4. Results

Prior to statistical analysis, the normality of the data distribution for all research variables was confirmed using both the Kolmogorov-Smirnov and Shapiro-Wilk tests. As presented in Table 1, the significance values for all variables—usability, user-friendliness, speed, professionalism, and requirements—exceeded the threshold of 0.05, indicating that the data for each variable were normally distributed.

Table 1. Normality Test of Research Variables

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Usability	.24	5	.11	.95	5	.72
User-friendliness	.22	5	.2	.97	5	.86
Speed	.23	5	.2	.93	5	.55
Professionalism	.22	5	.12	.92	5	.51
Requirements	.25	5	.10	.94	5	.6

This fulfillment of the normality assumption validated the use of parametric tests, such as the independent samples t-test, which was subsequently employed to address the first research question comparing the two software tools.

Table 2. Descriptive Statistics of Both Software Tools in Educational Potential

Group	N	Mean	SD	Std. Error Mean
Subtitle Edit	31	35.96	3.77	.67
Aegisub	31	33.41	4.91	.88

As shown in Table 2, the Subtitle Edit group obtained higher mean scores in the view of their educational potential (35.96 vs. 33.41). The following table shows the possible difference between them.

Table 3. Independent Samples T-Test for Educational Potential

	Levene's Test for Equality of Variances		t-test for Equality of Means					
							95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	1.54	.21	2.28	60	.02	2.54	1.11	.32	4.77
Equal variances not assumed			2.28	56.22	.02	2.54	1.11	.32	4.77

There was a significant difference in educational potential scores of the Subtitle Edit (M = 35.96, SD = 3.77) and Aegisub groups (M = 33.41, SD = 4.91; t (60) = 2.28, p = .02). The magnitude of the differences in the means (mean difference = 2.54, 95% CI [.32, 4.77]) was small (eta squared = .07). In general, the Subtitle Edit group had higher educational potential.

The usability, user-friendliness, and speed of the two tools were compared to determine which had greater academic applicability.

Table 4. Descriptive Statistics of Both Software Tools in Terms of Usability

Group	N	Mean	SD	Std. Error Mean
Subtitle Edit	31	35.48	3.62	.65
Aegisub	31	35.09	3.37	.6

As Table 4 shows, both groups, i.e., Subtitle Edit and Aegisub obtained rather equal mean scores in terms of usability (35.48 vs. 35.09). The following table shows the possible difference between them.

Table 5. Independent Samples T-Test for Usability

	Levene's Test for Equality of Variances		t-test for Equality of Means					
							95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	.15	.69	.43	60	.66	.38	.88	-1.39	2.16
Equal variances not assumed			.43	59.71	.66	.38	.88	-1.39	2.16

There was no significant difference in usability scores of the Subtitle Edit (M = 35.48, SD = 3.42) and Aegisub groups (M = 35.09, SD = 3.37; t (60) = .43, p =

.66, two-tailed). In other words, the two software tools were perceived as equally usable.

Table 6. Descriptive Statistics of Both Software Tools in Terms of User-friendliness

Group	N	Mean	Std. Deviation	Std. Error Mean
Subtitle Edit	31	40.77	4.63	.83
Aegisub	31	36.7	3.12	.56

As shown in Table 6, the Subtitle Edit group obtained higher mean scores in the view of their user-friendliness (40.77 vs. 36.7). The following table shows the possible difference between them.

Table 7. Independent Samples T-Test for User-friendliness

	Levene's Test for Equality of Variances		t-test for Equality of Means					
							95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	5.2	.02	4.04	60	.00	4.06	1	2.05	6.07
Equal variances not assumed			4.04	52.55	.00	4.06	1	2.04	6.07

A significant difference in user-friendliness was found between Subtitle Edit (M = 40.77) and Aegisub (M = 36.7), t (60) = 4.04, p < .001. The mean difference of 4.06 (95% CI [2.05, 6.07]) indicates Subtitle Edit was perceived as significantly more user-friendly, though the effect size was small (eta squared = 0.21).

Table 8. Descriptive Statistics of Both Software Tools in Terms of Speed

Group	N	Mean	Std. Deviation	Std. Error Mean
Subtitle Edit	31	22.61	2.66	.47
Aegisub	31	22.29	2.86	.51

Subtitle Edit and Aegisub obtained rather equal mean scores in terms of speed (22.61 vs. 22.29) (Table 8). The following table shows the possible difference between them.

Table 9. Independent Samples T-Test for Speed

	Levene's Test for Equality of Variances		t-test for Equality of Means					
							95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	.17	.67	.45	60	.64	.32	.7	-1.08	1.72
Equal variances not assumed			.45	59.69	.64	.32	.7	-1.08	1.72

No significant difference was found in perceived speed between Subtitle Edit (M = 22.61) and Aegisub (M = 22.29), t (60) = .45, p = .64, indicating users rated both tools equally in terms of speed.

The second research question aimed to identify which of Daneshgar's (2019) five characteristics most influenced users' software preference. Using a one-sample t-test with a test value of 3, mean scores above 3 indicated agreement, while scores below 3 indicated disagreement. This method clarified which attributes drove participant selection between the two tools.

Table 10. One-Sample T-Test Result for Aegisub Group

	Test Value = 3					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Overall (2-items mean Mean Difference	Lower	Upper
Requirements	-4.95	30.00	2.53	-.46	-.65	-.27

Usability	13.33	30.00	3.89	.89	.76	1.03
User-friendliness	11.96	30.00	3.67	.67	.55	.78
Speed	8.33	30.00	3.71	.71	.53	.89
Professionalism	7.26	30.00	3.71	.71	.51	.91

For Aegisub, usability (M = 3.89), user-friendliness (M = 3.67), speed (M = 3.71), and professionalism (M = 3.71) were all positively perceived (above the neutral threshold of 3). Usability was its strongest characteristic. However, the requirements category scored lowest (M = 2.53), indicating participant dissatisfaction, particularly with Persian language and RTL support.

Table 11. One-Sample T-Test Result for Subtitle Edit group

	Test Value = 3					
	t	df	Sig. (2-tailed)	Overall (2-items mean Mean Difference	95% Confidence Interval of the Difference Lower	Upper
Requirements	-4.82	30.00	2.5	-.49	-.69	-.28
Usability	13.03	30.00	3.94	.94	.79	1.09
User-friendliness	12.93	30.00	4.07	1.07	.9	1.24
Speed	10.76	30.00	3.87	.87	.71	1.04
Professionalism	11.36	30.00	3.91	.913	.74	1.07

For Subtitle Edit, all evaluated characteristics—usability (M = 3.94), user-friendliness (M = 4.07), speed (M = 3.71), and professionalism (M = 3.87)—received mean scores above the neutral threshold of 3, indicating positive user perception. User-friendliness was rated most favorably. In contrast, the 'requirements' category scored below neutral (M = 2.5), reflecting participant dissatisfaction, particularly regarding Persian language and RTL support. Overall, Subtitle Edit achieved higher mean scores across all positively perceived characteristics compared to Aegisub, confirming its greater acceptability among users.

The third research question intended to examine the extent of the correlation between participants' theoretical knowledge of subtitling and their practical subtitle

software competency. This relationship was analyzed using a Pearson correlation analysis (Table 12).

Table 12. Descriptive Statistics of Midterm and Final Exam of Subtitling

Variable	Mean	SD	N
Midterm exam score	9.93	1.91	30
Final subtitling score	72.91	29.17	30

As the above table shows, the mean score of the mid-term exam (theoretical knowledge) was 9.93 (SD= 1.91) and the final exam mean score (practical subtitling performance) was 72.91 (SD= 29.17).

Table 13. Correlation between Midterm and Final Exam of Subtitling

		Midterm exam	Final exam
Midterm exam	Pearson Correlation	1	.411*
	Sig. (2-tailed)		.02
	N	30	30
Final exam	Pearson Correlation	.411*	1
	Sig. (2-tailed)	.02	
	N	30	30

*. Correlation is significant at the 0.05 level (2-tailed).

As shown in Table 13, there was a positive relationship between mid-term and final subtitling exam ($r = .41$, $p = .02$); in other words, the higher the mid-term exam score, the higher the final subtitling score. This suggests that students who performed well on the theoretical subtitling knowledge also tended to achieve higher scores in the practical subtitling task.

5. Conclusion and Discussion

The findings for the first research question clearly demonstrate that Subtitle Edit is more suitable for educational and academic purposes than Aegisub. This conclusion is supported by its statistically significant superiority in both professionalism and user-friendliness. These results align with prior research by Daneshgar (2019) and Murphy (2013), who also identified Subtitle Edit's advanced features—such as precise synchronization tools and broadcast-quality output

options—as key advantages for professional training. However, the absence of a significant difference in usability and speed confirms that both tools are operationally efficient for core tasks, a finding that acknowledges the contrasting preferences noted in studies like Ávila-Cabrera and Talaván Zanón (2021). Additionally, Bekafigo's (2022) comparison noted Subtitle Edit's intuitive interface but criticized its waveform precision, while Aegisub was praised for its audio waveform function but critiqued for its outdated interface. These mixed results suggest that while Subtitle Edit may generally perform better in academic settings, Aegisub remains a strong contender depending on specific use cases and learner preferences, fansubbing in particular (Rothwell et al., 2023). Based on Kirkpatrick's Model (2006), Subtitle Edit is preferred over Aegisub for AVT education. It scored higher in user-friendliness (Reaction) and facilitated better acquisition of professional skills (Learning). Its balance of advanced features and accessibility also makes it more effective for long-term skill application (Behavior).

The findings for the second research question indicate that participants' software selection preferences were predominantly influenced by a combination of user-friendliness, usability, and professionalism, with Subtitle Edit being consistently favored. For Subtitle Edit, user-friendliness emerged as the most significant factor, followed by usability and professionalism. In contrast, Aegisub scored highest in usability but lagged behind in other domains. These results align with Hurtado Albir's (2017) assertion that intuitive interfaces reduce cognitive load for novice users and Díaz-Cintas and Remael's (2020) emphasis on the importance of industry-aligned tools in translator training. The consistently low scores in the requirements category, particularly concerning Persian language support, echo Daneshgar's (2019) earlier findings on localization challenges in Persian audiovisual contexts. The significant disparity in user-friendliness scores further supports Bolaños-García-Escribano's (2024) argument that user experience design is a critical differentiator in educational technology adoption. While both tools demonstrated core functionality—consistent

with Agulló's (2020) framework for evaluating subtitle software—Subtitle Edit's superior user experience and professional features afforded it a distinct advantage in academic settings.

Based on Kirkpatrick's (2006) model, Subtitle Edit's user-friendly design improves learner engagement (Reaction). However, both tools lack adequate Persian support, limiting their long-term effectiveness (Results). Ultimately, usability and professional relevance are the key factors for academic adoption.

The analysis for the third research question revealed a moderate positive correlation between participants' theoretical knowledge of subtitling principles and their practical performance. This finding underscores the pedagogical necessity of integrating conceptual instruction with hands-on software training, a principle strongly advocated by Díaz-Cintas and Remael (2020). Framed within Kirkpatrick's (2006) model, this significant relationship operates at the Learning level, demonstrating that the acquisition of core theoretical knowledge directly facilitates the application of skills in practical tasks. While the moderate correlation suggests other factors like individual aptitude also influence performance, it conclusively affirms that a solid theoretical foundation is a key contributor to developing practical subtitling competency. This result complements the findings from RQ1 and RQ2 by illustrating how theoretical knowledge and tool-specific preferences collectively shape overall learning outcomes in AVT training.

This study is subject to several limitations that should be acknowledged. Primarily, the small sample size of 31 participants restricts the generalizability of the findings beyond the immediate context. Methodologically, the study relied on a single adapted instrument from Daneshgar (2019) due to a lack of validated Persian-language questionnaires, which limited opportunities for methodological triangulation. The research design was also deliberately bounded by focusing solely on Subtitle Edit and Aegisub, employing a limited number of training tutorials and

short practice video clips to ensure feasibility and maintain participant engagement within the scope of an academic course. Finally, the exclusive focus on English-Persian translation dictates that the results are most applicable to this specific language pair and directionality.

Despite its limitations, the present study offers significant implications for both theory and practice in AVT education. For practitioners, the findings strongly support integrating Subtitle Edit software into curricula due to its user-friendly design and professional features, which effectively bridge theoretical knowledge and practical skill application. For developers, the low scores in requirements highlight a critical need to enhance Persian-language support and RTL script compatibility, using Daneshgar's (2019) criteria as a foundational guide for future user interface (UI)/ user experience (UX) improvements.

Future research should aim to improve generalizability by expanding participant diversity to include professionals and larger, multi-institutional cohorts. Investigations into emerging AI-integrated and cloud-based tools (e.g., SubGPT, OOONA) are warranted, alongside longitudinal studies to track long-term skill retention and software adoption. Besides Kirkpatrick Model of Evaluation, other theoretical models such as technology acceptance models and usability theory can be utilized in future studies that may yield different results and contribute to new discoveries in the field. This would further solidify the pedagogical potential of subtitling technologies and their impact on professional development.

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