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The Quality of Academic Presentations in a Free Software Environment: An Evaluation of the Effectiveness of LibreOffice Impress

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ABSTRACT:

This study aims to evaluate the extent to which the Impress program, part of the LibreOffice suite, meets the quality standards for academic presentations. It began by addressing the concept of digital presentations and their importance in organizing knowledge, facilitating understanding, and promoting scientific interaction, and identified their components and quality standards. It also defined free software and its principles, highlighting the role of Impress as a free, open-source alternative to PowerPoint, while detailing its features and functions and testing it in practice by creating an academic presentation in accordance with the quality standards defined in the theoretical section. The test results showed that the program provides the tools necessary to create academic presentations characterized by good organization and high-quality design, making it a practical and cost-effective option for academic institutions and researchers.

KEYWORDS: Academic presentations, Digital design, Free software, LibreOffice suite, Impress.

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جودة العروض التقديمية الأكاديمية في بيئة البرمجيّات الحرة: تقييم كفاءة برنامج LibreOffice Imress

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ملخص البحث

تهدف الدراسة إلى تقييم مدى قدرة برنامج (Impress) ضمن حزمة (LibreOffice) على تلبية معايير جودة العروض التقديمية الأكاديمية، وقد تناولت في البداية مفهوم العرض التقديمي الرقمي وأهميته في تنظيم المعرفة وتيسير الفهم وتعزيز التفاعل العلمي، وحددت مكوناته ومعايير جودته، كما عرّفت بالبرمجيات الحرة ومبادئها، و أبرزت مكانة برنامج (Impress) بوصفه بديلًا مجانيًا ومفتوح المصدر لبرنامج (PowerPoint)، مع بيان خصائصه ووظائفه واختباره عمليًا عبر بناء عرض تقديمي أكاديمي وفق معايير الجودة المحددة في الجانب النظري، وقد أظهرت نتائج الاختبار أن البرنامج يوفّر من الأدوات ما يؤهله لإعداد عروض تقديمية أكاديمية تتسم بحسن التنظيم، وجودة التصميم، الأمر الذي يجعله خيارًا عمليًا و اقتصاديًا للمؤسسات الأكاديمية والباحثين.

الكلمات المفتاحية: العروض التقديمية الأكاديمية، التصميم الرقمي، البرمجيات الحرة، حزمة (LibreOffice)، برنامج (Impress).

1. INTRODUCTION

In an era characterized by the rapid expansion of information and the growing demand for effective means of communicating scholarly knowledge, digital presentations have become an indispensable tool in academic settings. Their development has traditionally relied on commercial software that requires paid licenses, creating financial constraints for academic institutions and individual researchers. Against this backdrop, free software has emerged as a promising alternative, offering users the freedom to use, study, modify, and distribute software without the financial or legal restrictions typically associated with proprietary applications. (O'Neil, 2011, p. 281) This movement has led to the development of several free presentation applications, among which LibreOffice Impress stands out as the open-source counterpart to Microsoft PowerPoint.

However, the availability of free alternatives raises a more significant question than their philosophical foundations or licensing model: whether they are capable of meeting the practical requirements of producing high-quality academic presentations. From this perspective, the present study, entitled Academic Presentation Quality in a Free Software Environment: An Evaluation of the Effectiveness of LibreOffice Impress, seeks to address the following main research question:

- Can the Impress program—part of the free and open-source LibreOffice suite—meet academic standards for a good presentation in terms of organization, visual quality, and ease of use?

To answer this question, the study is guided by the following subsidiary research questions:

• What is a digital presentation, and how important is it in the academic field?

• What are the components of a good academic digital presentation?

• What is meant by free software, and what are the principles on which it is based?

• What functional aspects make Impress a suitable choice for designing digital academic presentations?

2. The Concept of Academic Presentations

In its broadest sense, a presentation is a form of oral communication through which ideas and information are conveyed to a specific audience. It does not necessarily require the use of visual aids, as it may be delivered entirely through spoken communication. (Lockwood, 2023, p. 8) In contemporary academic contexts, however, oral delivery is typically supported by digital visual aids designed according to established principles for presenting scholarly content—such as research papers, theses, and dissertations—in a clear and well-structured manner that serves the objectives of the presentation. Accordingly, an academic digital presentation may be defined as an interactive scholarly activity that combines structured oral delivery with the systematic visual presentation of content through digital slides in order to communicate knowledge and discuss research findings with a target audience. (Swathi, 2015, pp. 1,2,3)

3. The Importance of Digital Presentations in Academic Contexts

Digital presentations have become an integral component of academic practice. Their value extends beyond the mere display of information, as they provide an interactive environment for scholarly communication, support diverse learning approaches, and encourage learners to move from passive recipients to active participants. Their significance is particularly evident in the following aspects: (الصويكري, 2019, p. 223 ،224 ،225)

3.1 Organizing Knowledge

Digital presentations enable researchers and instructors to structure academic content in a coherent and logical sequence, progressing from general concepts to specific details and from introductory remarks to conclusions. This logical organization enhances the scientific quality of the presentation and reduces the risk of fragmented ideas.

3.2 Enhancing Understanding and Comprehension

Digital presentations facilitate the representation of abstract and complex information through charts, concept maps, comparison tables, and other visual representations. This contributes to simplifying academic content and reducing the cognitive effort required for comprehension, particularly in theoretical subjects and specialized scientific disciplines.

3.3 Supporting Multimedia Learning

By integrating oral explanation with visual elements—including text, images, videos, and graphical illustrations—digital presentations accommodate different learning preferences and contribute to improving learners' attention and concentration.

3.4 Managing Time and Structuring Lectures

Digital presentations enable instructors to manage the pace of lectures more effectively, allocate time appropriately across different topics, and avoid unnecessary digressions, thereby enhancing the overall effectiveness of academic instruction.

3.5 Developing Research and Communication Skills

Preparing and delivering a digital presentation represents an integrated academic activity that develops essential skills in information retrieval, source evaluation, idea organization, and scholarly presentation. It also strengthens academic communication and public speaking skills, both of which are fundamental competencies in higher education and postgraduate studies.

3.6 Promoting Academic Interaction and Discussion

Digital presentations can serve as a catalyst for academic discussion by providing visual support that encourages audiences to raise questions, exchange ideas, and critically discuss research findings, thereby fostering a more interactive learning environment.

4. Elements of an Effective Academic Digital Presentation

An effective academic digital presentation is built upon the integration of two essential elements: a well-structured slide organization and adherence to quality standards in both content and design. Each of these elements is discussed below.

4.1 Slide Structure

Slide structure refers to the logical sequence of slides that ensures the coherence and progressive development of the presentation. This organizational framework is illustrated in the following model: (Rajat, Arjun, & Rohan, 2013)

Table 1. Organizational Structure of an Academic Presentation

Slide	**Essential Components**	**Notes**
Title Slide	• People's Democratic Republic of Algeria	The university logo is recommended whenever available. Fonts and colors

	• Ministry of Higher Education and Scientific Research • University name • Faculty or institute • Department • Specialization • Course title • Presentation title • Student's name • Supervisor's name • Academic year	should be consistent with academic presentation standards.
Objectives (Optional)	• Presentation objectives: What will the audience learn? What is the purpose of the presentation?	Helps establish the audience's expectations and focus their attention.
Introduction	• Brief opening to engage the audience • Research problem or central question • Rationale for selecting the topic • Definition of key terms, if necessary	The introduction should be structured around two guiding questions: Why this topic? and What question will the presentation address?
Main Body	Divide the topic into 3–5 main sections • Dedicate one or more slides to each section • Use clear subheadings • Support the content with visual materials (images, charts, tables, concept maps, etc.) • Include practical examples where appropriate	Follow a logical progression from general to specific. Research presentations should support arguments with appropriate evidence.
Results / Findings	• Present the main findings • Use concise bullet points or visual summaries	Essential for research presentations. In instructional presentations, this section may be integrated into the conclusion.
Conclusion	• Summarize the presentation • Answer the research problem introduced earlier • Highlight the key takeaways	No new information should be introduced in the conclusion; it should synthesize the main points concisely.

Recommendations (If Applicable)	• Practical recommendations based on the findings • Suggestions for future research	Particularly appropriate for research presentations and graduation projects.
References	• List of references cited throughout the presentation	Essential in academic and research presentations to ensure scholarly credibility.
Questions and Discussion	• Closing statement such as "Thank you for your attention. Any questions?" • Contact information (e.g., email address), if desired	Encourages audience interaction and discussion.
Closing Slide (Optional)	• Closing quotation, message, or acknowledgement • Relevant image	Leaves a positive final impression on the audience.

4.2 Quality Factors in Academic Digital Presentations

In addition to the organizational structure of slides, the quality of an academic digital presentation is influenced by several other factors related to design, content, language, presentation delivery, and audience interaction. These factors are summarized in the following table: (Wijayanti, Dian Widyastuti, Rodemeus, & Herry, 2025, pp. 186, 187, 188)

Table 2. Quality Factors in Academic Digital Presentations

Domain	Quality Criteria
Visual Design	• Use a consistent and simple presentation template. • Use clear fonts with a minimum size of 36 pt for main titles, 32 pt for subheadings, and 24 pt for body text. • Ensure sufficient contrast between text and background. • Avoid overcrowding; each slide should focus on one main idea. • Use images and graphics to clarify ideas rather than for decoration.
Academic Content	• Ensure the accuracy and currency of information. • Use reliable and authoritative sources. • Properly cite all borrowed information. • Avoid redundancy and unnecessary detail.
Language and Style	• Use clear academic language free from grammatical errors and ambiguous terminology. • Prefer concise bullet points over long sentences. • Maintain consistent terminology throughout the presentation.
Presentation Delivery	• Rehearse the presentation in advance. • Maintain eye contact with the audience (avoid reading directly from the slides).

	• Manage time effectively. • Speak clearly and at an appropriate pace.
Interaction	• Encourage questions during the presentation, where appropriate. • Be prepared to answer questions after the presentation. • Respond to criticism in a professional and scholarly manner.

It is clear from the above that the quality of a digital academic presentation is not achieved merely by the availability of scientific content, but also requires adherence to a set of standards related to organization, design, and production. In an effort to achieve this integration, researchers rely on a range of specialized software programs, with Microsoft PowerPoint leading the way due to its capabilities, which have made it the most widely used option in this field, However, its reliance on a commercial licensing system raises the question of whether there are other alternatives capable of performing the same functions and meeting the same academic requirements. This question leads to an examination of free software, beginning with an introduction to the concept and an explanation of its underlying principles, as a prelude to studying the extent to which (Impress), part of the (LibreOffice) suite, to meet those requirements.

5. Definition of Free Software

Free software refers to computer programs that grant users the following essential freedoms: (Hema Ramachandran & Achuthsankar, 2012, p. 2)

- The freedom to use the software without charge.
- The freedom to study how the software works.
- The freedom to modify the software.
- The freedom to redistribute the software.

Accordingly, users are not merely consumers but active participants in the development and dissemination of digital knowledge. This philosophy has led to the emergence of numerous free software applications that have gained widespread adoption across a variety of fields. Notable examples include: (Roy & Khritish, 2023, p. 279)

- **LibreOffice:** A free office suite used for preparing research papers, reports, presentations, spreadsheets, databases, and other academic and administrative documents.
- **GIMP:** A free image-editing application that enables users to edit images, design posters, and create illustrations for research and educational purposes.
- **Audacity:** A free application for recording and editing audio.
- **Linux:** A free operating system recognized for its security and widely used in universities, research laboratories, and other institutional environments.

The LibreOffice suite consists of six integrated applications, each designed to perform a specific function. Table 3 summarizes these applications and their primary functions.

Table 3. LibreOffice Applications and Their Primary Functions

Application	Primary Function
Writer	Word processing and academic writing
Calc	Spreadsheet creation and advanced data analysis
Impress	Presentation design
Base	Database creation and management
Draw	Drawing and graphic design
Math	Mathematical formula editing

6. Impress

Impress is the presentation application of the LibreOffice office suite, specifically designed for creating digital presentations. It provides functionality comparable to that of Microsoft PowerPoint while adhering to the principles of free software, which allow users to use, modify, and redistribute the software without financial or legal restrictions. (LibreOffice Documentation Team, 2013, p. 14)

Impress supports the Arabic language and is compatible with major operating systems, including Windows, macOS, and Linux. It also features a flexible user interface that enables users to create professional presentations through a comprehensive set of tools, including multiple slide layouts, extensive multimedia support for text, images, tables, vector graphics, videos, and transition effects, as well as the ability to export presentations in various formats, such as PDF and HTML. In addition, it offers a high level of compatibility with Microsoft PowerPoint files, helping preserve the original formatting of presentations. These features make Impress a reliable solution for academic and professional use in higher education. (YCT Expert Team, 2024, p. 108)

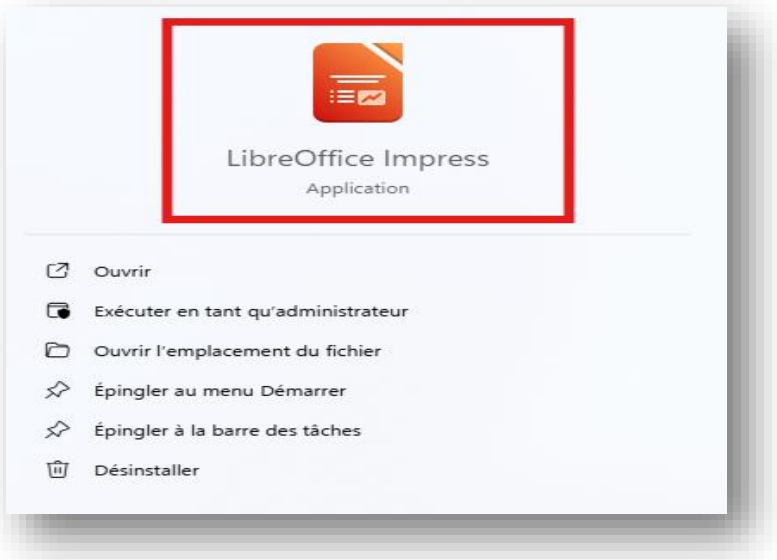


Figure 1. The Impress Desktop Icon

LibreOffice Download Link:

https://fr.libreoffice.org/download/telecharger-libreoffice/

7. Creating an Academic Presentation Using LibreOffice Impress

Having established the principles of an effective academic presentation, the study now turns to the practical stage to evaluate the extent to which Impress can implement them. To this end, a sample presentation entitled "The Importance of Free Software in Education" will be developed using LibreOffice Impress. The process includes creating and formatting the slides, incorporating their essential elements, and documenting each step with screenshots to illustrate the implementation process.

7.1 Launching Impress and Creating a New Presentation

The process begins by launching Impress from the applications menu and creating a new presentation by selecting «Nouvelle Présentation». The main interface then appears, consisting of a central workspace for the current slide, a sidebar on the right containing tools and formatting options, and a slide pane on the left for displaying and arranging slides (Figure 2).

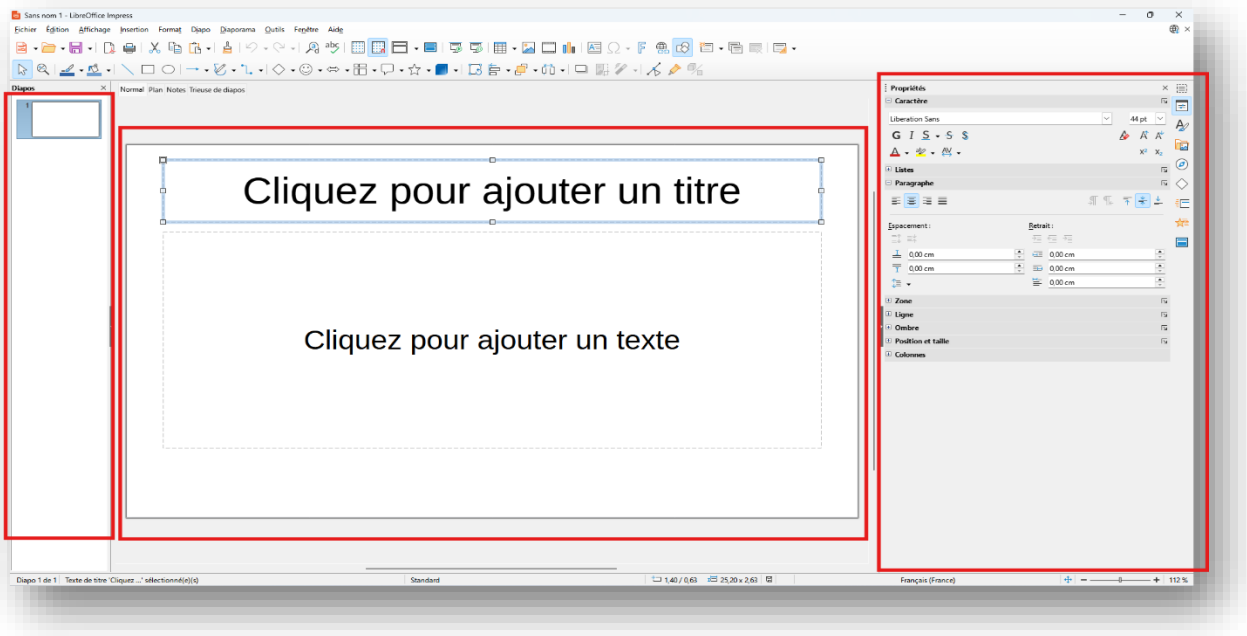


Figure 2. The Main Interface of Impress

7.2 Preparing the Title Slide

7.2.1 Inserting a Background Image for the Title Slide

To insert a background image for the title slide, right-click anywhere on the slide background and select «Propriétés de la diapositive…» (Figure 3). Next, open the «Arrière-plan» tab, choose «Image», and click «Ajouter» to import an image from the computer (Figure 4). Once the image has been imported, set «Style» to «Étiré» so that it fills the entire slide. The transparency level can also be adjusted using the «Transparence» option. Finally, click «OK» to apply the changes (Figure 5).

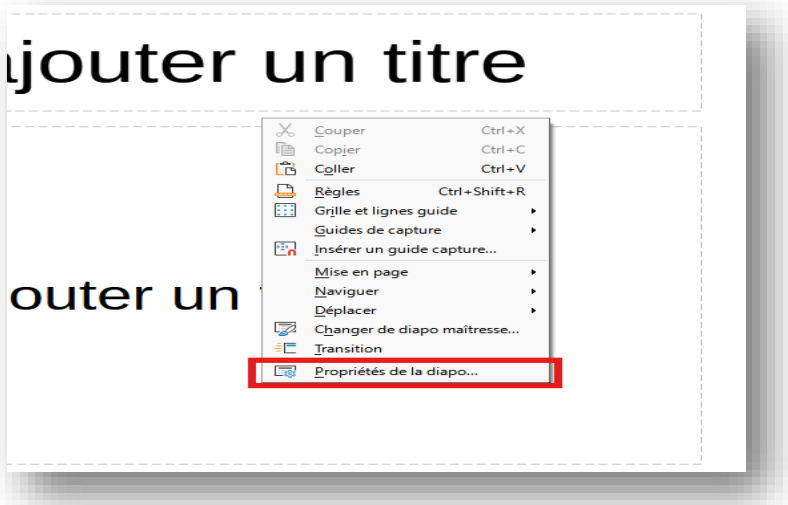


Figure 3. Accessing the Title Slide Background Settings

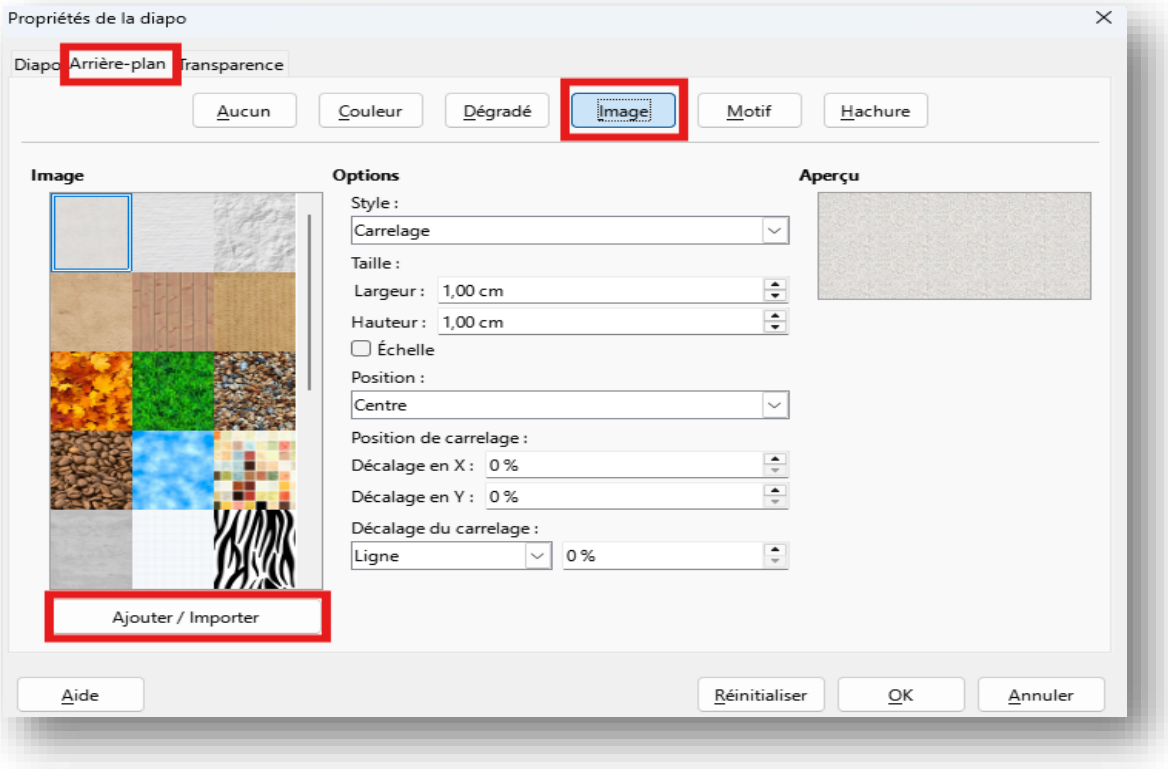


Figure 4. Importing a Background Image from the Computer

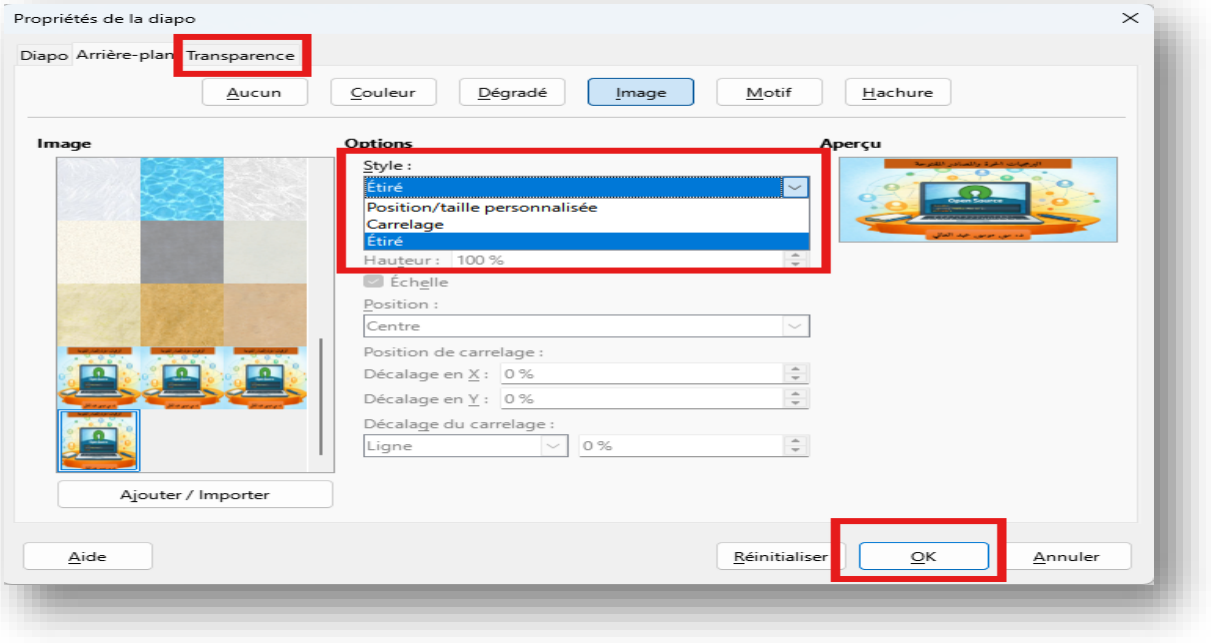


Figure 5. Title Slide Background Settings

7.2.2 Adding the Elements of the Title Slide

Click the «Insérer une zone de texte» icon on the toolbar to insert a text box at the top of the slide (Figure 6), then enter the following information: People's Democratic Republic of Algeria, Ministry of Higher Education and Scientific Research, University of Oran 1, Faculty of Literature, and Department of Linguistic Studies. The text can then be formatted using the sidebar (Figure 7) by selecting the Lucida Sans font, setting the font size to, for example, 24 pt, and enabling «Gras». The font color can also be adjusted using the «Couleur de la police» option. Additional text boxes may be inserted in the same manner for the specialization, course title, presentation title, student's name, and supervisor's name. Finally, the university logo can be inserted using «Insertion → Image», after which its size and position can be adjusted as required.

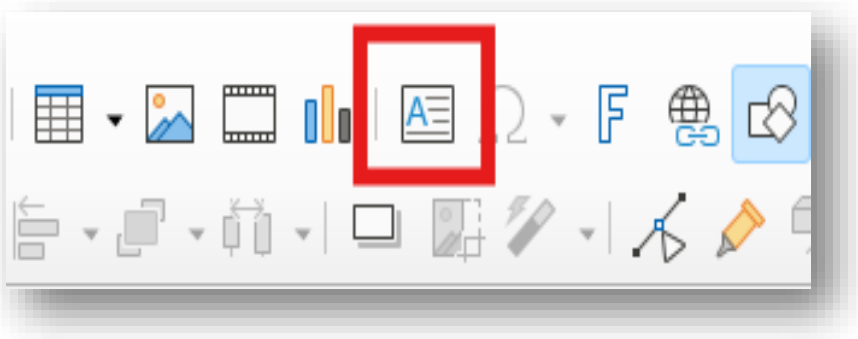


Figure 6. Inserting a Text Box into the Slide

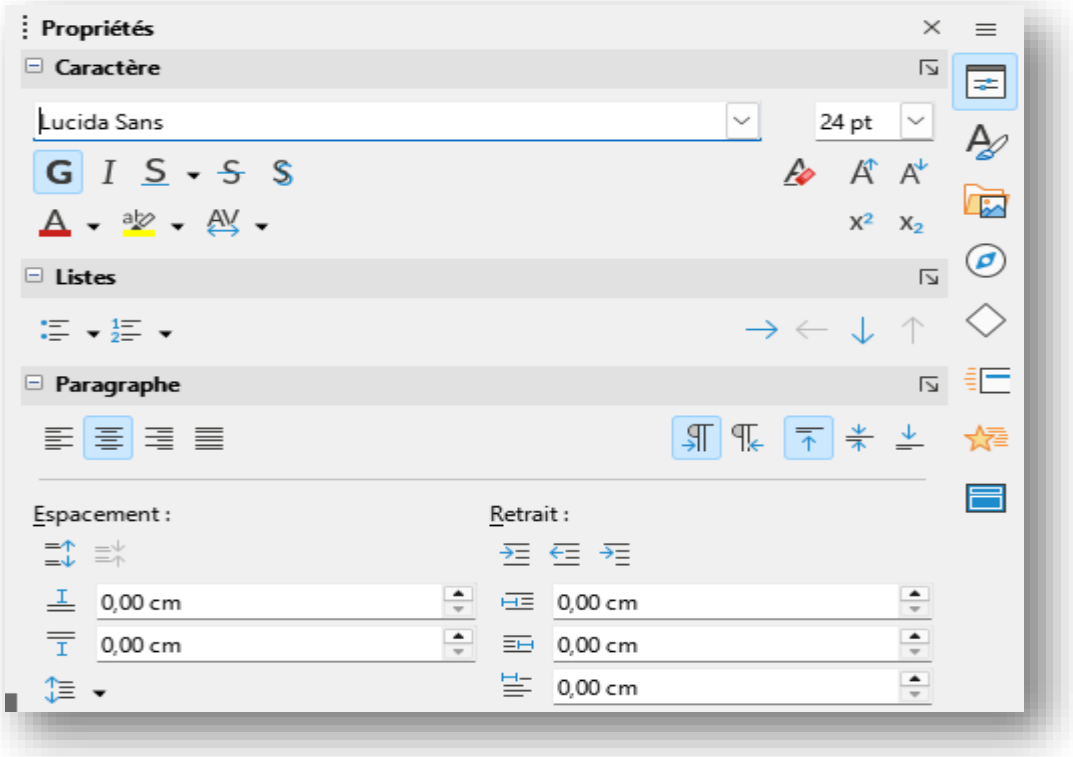


Figure 7. The Properties Sidebar in Impress

7.2.3 Improving the Slide Layout

At this stage, all slide elements are arranged to achieve a balanced layout. The alignment tools available on the toolbar are used—for example, «Centrer horizontalement» to align text horizontally. Color consistency is also maintained using the «Couleur de la police» option, while ensuring sufficient contrast between the text and the background to enhance readability and visual harmony.

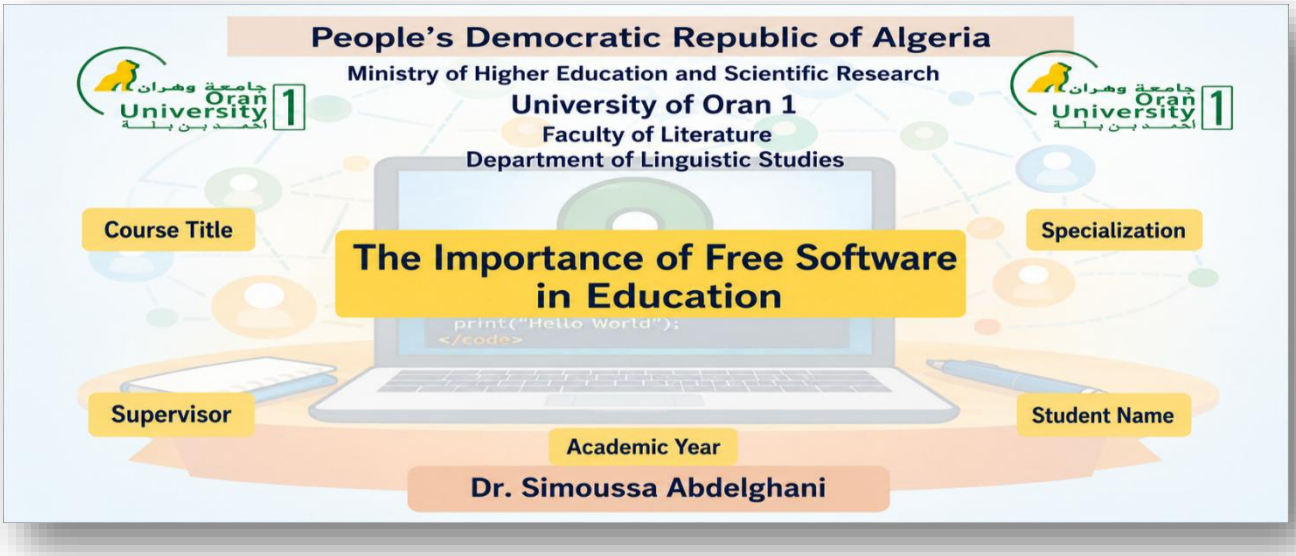


Figure 8. Final Version of the Title Slide

7.3 Inserting the Introduction Slide

A new slide is inserted by selecting «Diapo → Nouvelle Diapo» from the menu bar (Figure 9) or by using the keyboard shortcut Ctrl + M. Once the new slide appears (Figure 10), enter "Introduction" in the «Titre» field and set the font size to 36 pt using the Properties Sidebar to ensure that the heading stands out. In the «Texte» field, enter the following points:

- A brief introduction to free software.
- The main research question: How does free software contribute to improving the quality of education?
- The rationale for selecting the topic.

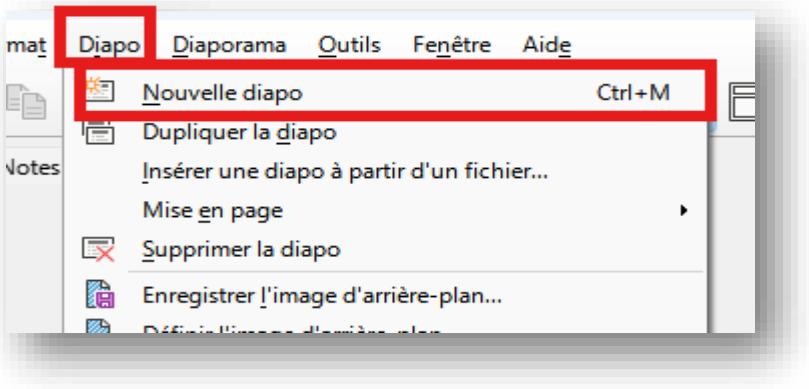


Figure 9. Inserting a New Slide



Figure 10. The New Slide

7.4 Creating the Presentation Outline Slide

A new slide is inserted following the same procedure described previously. The slide is entitled "Presentation Outline" and contains the main sections of the presentation in the form of concise bullet points, providing the audience with a clear roadmap of the presentation. The outline begins with the concept of free software, followed by the importance of free software in education, including cost reduction, support for self-directed learning, and the promotion of innovation. The final section presents practical examples of free software used in educational institutions, such as

LibreOffice, Moodle, and Linux. This slide provides a clear overview of the presentation structure and its logical progression.

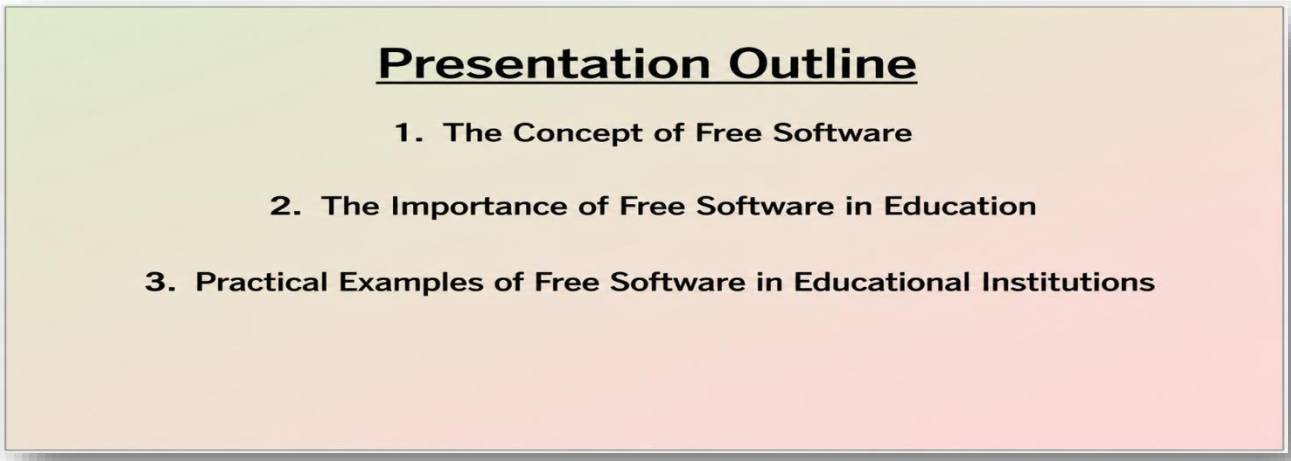


Figure 11. Final Version of the Presentation Outline Slide

7.5 Creating the Content Slides

The next step is to create the content slides by adding a separate slide for each of the three main sections, following the same procedure described previously.

- For the first slide, which introduces the concept, enter "The Concept of Free Software" in the «Titre» field. In the «Texte» field, provide the definition of free software together with its four fundamental freedoms—use, study, modify, and redistribute—accompanied by a brief explanation of each freedom presented as a separate bullet point.
- The second slide is entitled "The Importance of Free Software in Education" and presents concise bullet points highlighting its major benefits, including reducing financial costs for students and educational institutions, supporting self-directed learning, and promoting innovation and collaborative participation. A supporting image, such as a group of students using computers displaying the Linux logo, may be inserted using «Insertion → Image» (Figure 12), and its size and position can subsequently be adjusted through the «Propriétés» tab (Figure 13).
- The third slide is devoted to "Examples of Free Software in Education." A simple table is created using «Insertion → Tableau» (Figure 14) to present examples such as LibreOffice as an alternative to Microsoft Office, Moodle as an open-source learning management system, GIMP for graphic design, and Linux as a free operating system, accompanied by brief explanatory notes. At this stage, the main sections of the presentation have been fully covered.

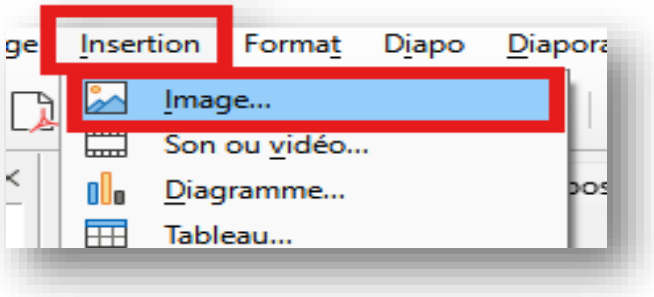


Figure 12. Inserting an Image into the Slide

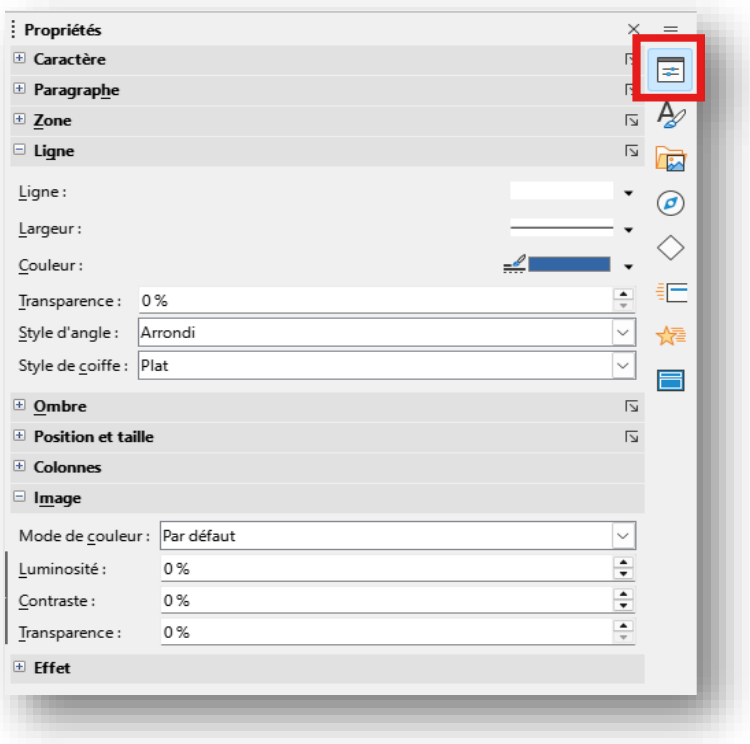


Figure 13. Adjusting the Size and Properties of the Inserted Image

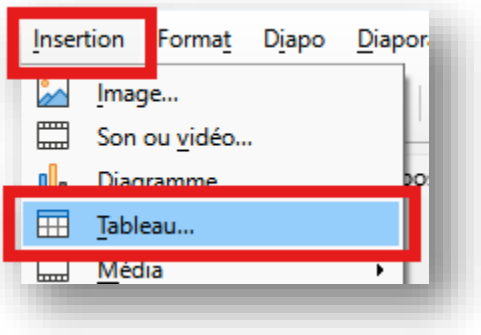


Figure 14. Inserting a Table into the Slide

7.6 Adding Slide Transition Effects

To add transition effects between slides, select the target slide and click «Transitions» in the sidebar on the right (Figure 15). A wide range of transition effects will then be displayed. Choose a simple effect, such as «Fondu» or «Balayer» (Figure 16), and set the transition speed by adjusting the «Durée» option to a moderate value (Figure 17). To preserve the formal academic style of the presentation, transition effects should be used sparingly.

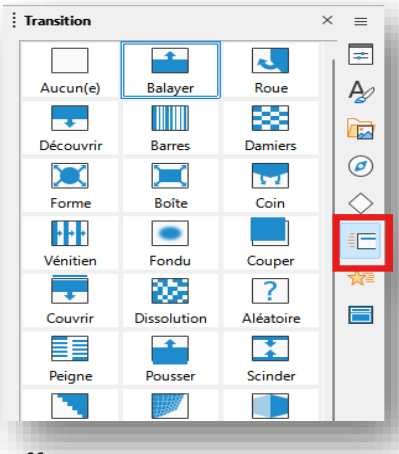


Figure 15. Adding Slide Transition Effects

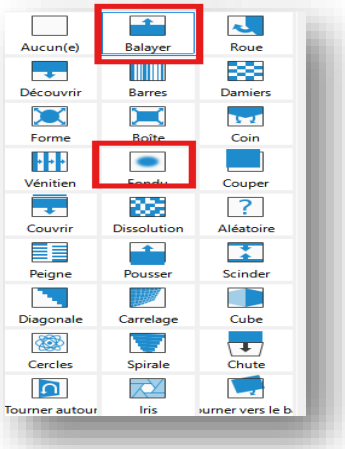


Figure 16. Selecting an Appropriate Transition Effect for Academic Presentations

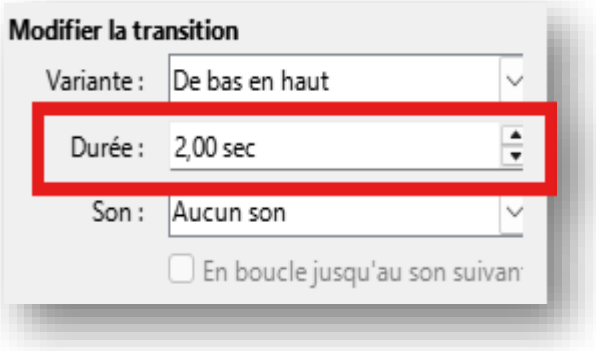


Figure 17. Adjusting the Slide Transition Duration

7.7 Adding Text Animation Effects (Progressive Text Display During the Presentation)

To add text animation effects that display text progressively during the presentation, select the text box to which the effect will be applied, then click «Animations» in the sidebar on the right (Figure 18). Next, click «Ajouter» and select «Apparition» from the drop-down menu. Set the «Démarrer» option to «Au clic», then confirm the settings (Figure 19). Repeat this procedure for the remaining text elements as needed. This approach helps control the pace of the presentation while minimizing distractions for the audience.

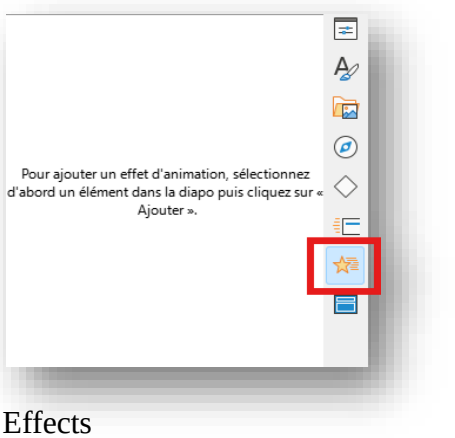


Figure 18. Adding Text Animation Effects

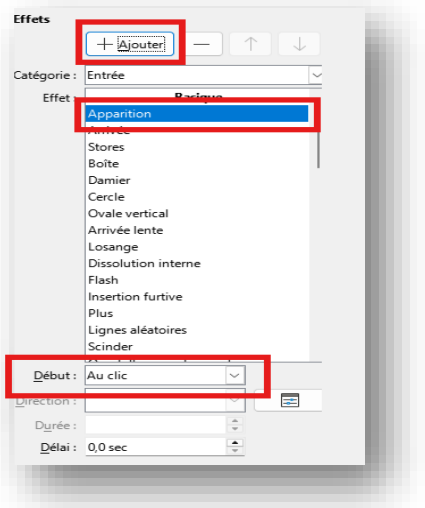


Figure 19. Selecting an Appropriate Animation Effect for Text

7.8 Previewing the Presentation

Before delivering the presentation, it is essential to preview it. This can be done by pressing F5 on the keyboard or by selecting «Démarrer à la première diapo» from the top menu (Figure 20). This step makes it possible to review all slides and verify the clarity of the text, the logical sequence of the content, and the proper functioning of slide transitions and animation effects. If any issues are identified, return to normal view by pressing the Échap key on the keyboard, make the necessary corrections, and preview the presentation again until the desired result is achieved.

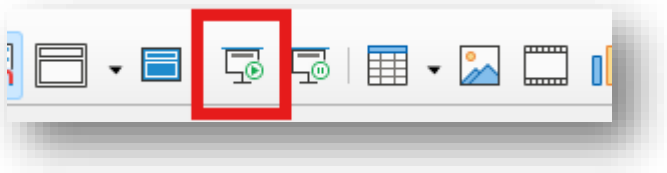


Figure 20. Previewing the Presentation

7.9 Saving and Exporting the Presentation

The presentation can now be saved in its native ODP format by selecting «Fichier → Enregistrer sous», allowing it to be edited later if necessary (Figure 21). It can also be exported as a

PDF by selecting «Fichier → Exporter au format PDF» whenever it is intended for sharing or printing without permitting further modification (Figure 22).

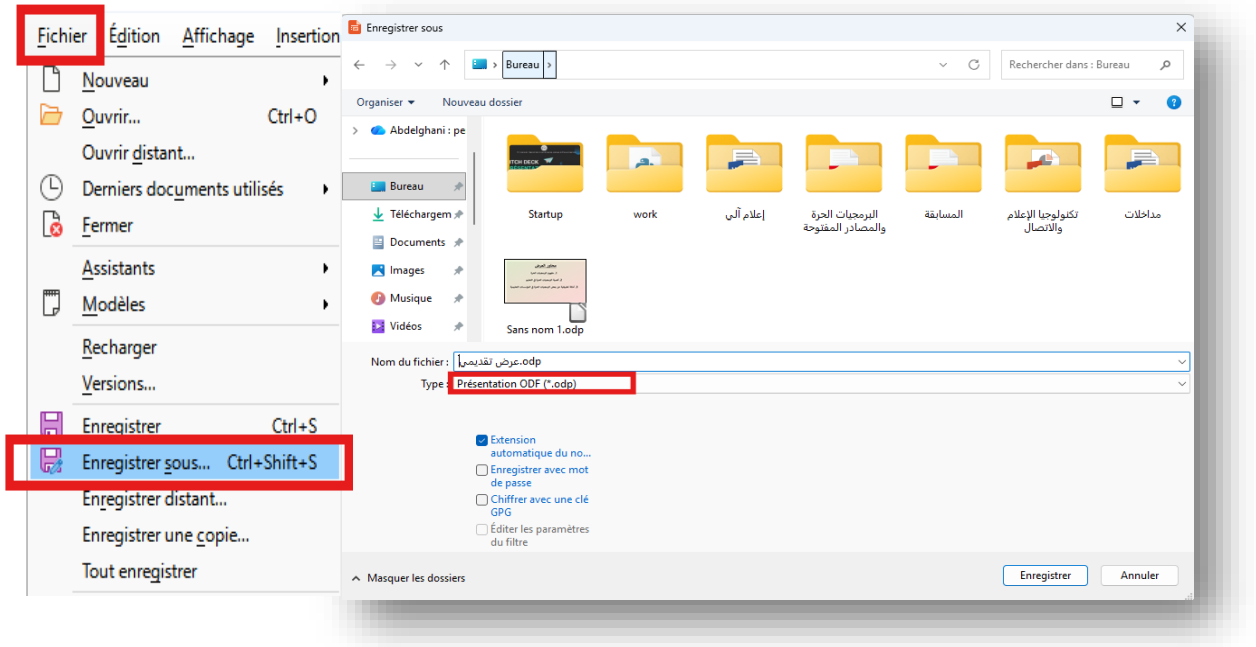


Figure 21. Saving the Presentation in Its Native (ODP) Format

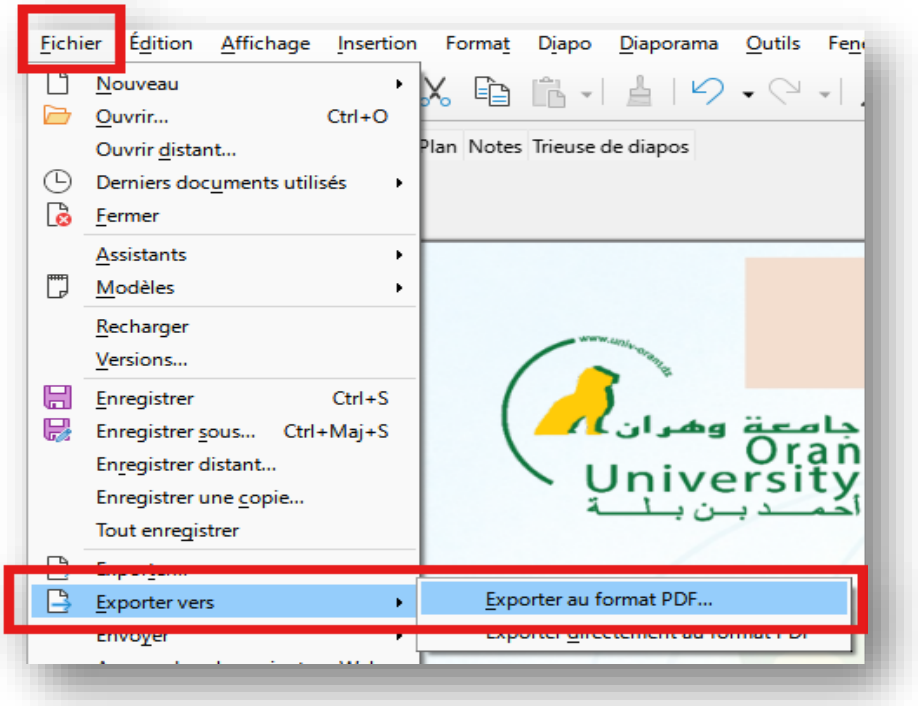


Figure 22. Exporting the Presentation as a PDF

8. Evaluating the Extent to Which Impress Meets the Quality Standards for Digital Academic Presentations

The practical application presented in this study demonstrates that Impress provides most of the tools required to create academic presentations that meet widely accepted academic and design

standards. In terms of content organization, the program enables users to create and rearrange slides in a logical sequence while offering a variety of slide layouts that facilitate the development of coherent and well-structured presentations. From a visual design perspective, it provides extensive tools for customizing templates, backgrounds, colors, and fonts, in addition to supporting the insertion of images, tables, shapes, charts, and multimedia elements. It also allows transition and animation effects to be applied in moderation, thereby enhancing rather than distracting from the presentation content. Furthermore, the program features a clear, well-organized, and user-friendly interface. It supports saving presentations in multiple formats, including the open ODP format, exporting them as PDF files, and importing and editing PowerPoint presentations, thereby improving file interoperability in academic environments.

The value of Impress, however, extends beyond these technical capabilities. As part of the free and open-source LibreOffice suite, it eliminates subscription or licensing costs, making it an attractive solution for academic institutions and researchers seeking legally compliant, cost-free software without compromising presentation quality. Accordingly, it can be concluded that Impress satisfies, to a large extent, the requirements of a high-quality academic presentation in terms of content organization, visual design, and ease of use, making it a practical alternative to commercial software for the creation of digital academic presentations.

9. Conclusion

This study has shown that the quality of an academic presentation does not depend on the use of expensive commercial software; rather, it depends primarily on the effective use of the capabilities provided by the presentation software itself. Based on the findings of the practical application, the study has answered its main research question by demonstrating that Impress, as a component of the free and open-source LibreOffice suite, possesses the functional capabilities required to meet the quality standards for digital academic presentations. It enables users to organize slides in a logical sequence, control visual design elements, integrate multimedia resources that support academic content, and save and export presentations in multiple formats. These features make Impress a suitable tool for creating academic presentations, provided that its capabilities are used effectively in accordance with the principles of academic presentation design and the requirements of effective scholarly communication.

In light of these findings, the following recommendations are proposed:

- Encourage students and researchers to use Impress for preparing their academic presentations, as it provides features that comply with the quality standards for digital academic presentations.
- Encourage universities and research institutions to adopt free software in their educational and administrative activities, given its economic and technical advantages and the freedoms it provides in terms of use and development.
- Organize specialized training courses and workshops on designing academic presentations using Impress.
- Encourage further research on free software by extending similar studies to other applications within the LibreOffice suite and exploring their potential contributions to scientific research and higher education.

References

1- Hema Ramachandran, & Achuthsankar, S. (2012). *SCILAB A free software to MATLAB* (éd. 1). New Delhi, India: S. Chand and company.

2- LibreOffice Documentation Team. (2013). *LibreOffice 4.00 Impress Guide: Presentations in LibreOffice* (éd. 1). Queensland, Australie: Friends of OpenDocument Inc.

3- Lockwood, R. B. (2023). *Making Academic Presentations What Every University Student Needs to Know* (éd. E-Book). Michigan, United States of America: University of Michigan Press.

4- O'Neil, A. (2011). Open Source Software. Dans R. Chandwick, *Encyclopedia of Applied Ethics* (éd. 2, p. 281). Massachusetts, United States of America: Acedemic Press.

5- Rajat, T., Arjun, R., & Rohan, S. (2013, 12 09). *Prepare and Deliver an Effective Presentation*. Récupéré sur ResearchGate: https://www.researchgate.net/publication/332884540_Prepare_and_deliver_an_effective_presentation

6- Roy, K., & Khritish, S. (2023). *ICT Revolutionizing education* (éd. 1). Chisinau, Republic of Maldova: Scholars' Press.

7- Swathi, T. (2015). , The Importance of Effective Presentation for Organizational Success . *The IUP Journal of Soft Skill, 09*(02), 1,2,3.

8- Wijayanti, S. H., Dian Widyastuti, T., Rodemeus, R., & Herry, P. (2025). An investigation of the quality of presentation slide design and oral communication in higher education. *Journal of Research in Instructional, 05*(01), 186, 187, 188.

9- YCT Expert Team. (2024). *Study Material* (éd. E-Book). Prayagraj, India: A. K. Mahajan.

الصويكري- 10, م. ع. (2019, 05). أثر استخدام العروض التقديمية(بوربوينتPower Point) في مقررات اللغة العربية على التحصيل الدراسي وتنمية اتجاهاتهم نحوها لدى طلبة جامعة الملك عبد العزيز. *مجلة جامعة الملك عبد العزيز, 27*(03), 223، 224، 225.