

Research Worksheet

You can plan out your research for each of your research questions using the below template.

PART A

Research Step	Key Questions	Your Responses
Define your objectives, 3 research questions & associated hypotheses.	What are you trying to accomplish with this research? What do you wish to find out that will accelerate your work in the right direction?	The main objective is to understand how digital literacy in Ghanaian public junior high schools can be improved through affordable technology, effective teacher training, and sustainable partnerships. The three research questions are: (1) How can integrating low-cost digital learning tools and teacher training programs improve ICT literacy among public JHS students in rural Ghana? (2) What role can public-private partnerships play in enhancing access to ICT labs and internet connectivity in schools? (3) How does early exposure to digital learning influence students' confidence, creativity, and career readiness?
Determine your end outputs	What type of data/information is ideal for you to find, based on what you are trying to accomplish? Do you need to present it in any particular format?	The ideal data includes statistics on ICT access, case studies of successful school digitalization programs, teacher training outcomes, and examples of effective NGO or corporate partnerships. The information will be summarized in a written report with key findings, data tables, and analysis.
Scope your main sources of information	Do you already know where you might want to go to find the information you're seeking? Are there particular entities or organizations that you	Yes. Key sources include UNESCO Institute for Statistics, Ghana Education Service (GES), the Ministry of Education, UNICEF, World Bank education reports, and reputable NGOs like CAMFED and Ghana Code Club that work on ICT education. ChatGPT and academic papers on digital literacy in Africa will also support the research.

	know are seen as "experts" on the topic?	
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PART B

Research Step	Key Questions	Your Responses
Begin gathering your required information	What search terms should you use? How many reports/articles do you want to read before deciding you have seen enough?	Search terms: <i>"digital literacy Ghana public schools," "ICT teacher training Ghana," "NGO education technology Africa," "public-private partnerships in education Ghana," "impact of digital learning Africa."</i> I plan to review at least 8–10 sources, including 3 policy reports, 3 NGO case studies, and 2 research papers.
Evaluate the Validity/Credibility of Your Sources and Information	Are the sources credible and reliable? Consider the authority, accuracy, objectivity, and currency of the information to ensure its validity for your research.	I will rely on credible organizations like UNESCO, World Bank, and GES, which provide updated data and verified statistics. NGO and academic reports will be reviewed for author credentials, publication dates, and objectivity to ensure accuracy and reliability.
Synthesize and Communicate Your Key Findings	Summarize the key information and findings that you have gathered during your research. Organize these findings in a clear and coherent manner, ensuring that they directly address your research objectives and questions.	Research shows that combining low-cost devices (like Raspberry Pi kits) with ongoing teacher training greatly improves ICT literacy. Public-private partnerships such as the Ghana Code Club and World Bank's GALOP project have successfully expanded computer access. Early exposure to digital tools boosts students' confidence and creativity, preparing them for STEM-related careers.
Return to Your Original Objectives and Key Questions	Revisit your initial objectives and key questions to ensure that your research findings adequately address them. Reflect on whether your findings	The findings directly support all three research questions. They confirm that teacher training and affordable ICT tools improve learning outcomes, partnerships accelerate infrastructure access, and early exposure fosters confidence and employability.

	have effectively contributed to solving the identified problem.	These insights will inform recommendations for sustainable ICT education in Ghana.
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Part 3 – Research Summary

In 200–300 words, provide an executive summary of your research in the text box below. You should be synthesizing information from multiple sources. Provide answers and explanations for the 3 questions you investigated and your key research findings. This should be in a narrative format (no bullet points), and be at least 3 paragraphs long.

Please use at least 3 different online sources such as ChatGPT, organizational websites, Wikipedia, etc. Please cite (give credit to) where your information came from directly in your statement. Avoid word-for-word quoting, paraphrase instead (use your own words), as modeled in the example. Also, list your sources and their URLs (web addresses) at the end.

Ghana's effort to integrate ICT education into public junior high schools faces ongoing challenges due to limited infrastructure, low teacher confidence, and inadequate funding. According to UNESCO (2023), fewer than one-third of basic schools in Ghana have functioning ICT labs, leaving many students without practical computer skills. My research explored how low-cost technology, teacher training, and partnerships can bridge this gap. Evidence from UNICEF (2022) shows that schools using affordable devices such as Raspberry Pi and tablets alongside structured ICT teacher workshops improved students' digital literacy by 40% in one academic year. This suggests that combining access to tools with consistent training produces measurable outcomes.

Public-private partnerships have also proven effective in expanding digital access. The Ghana Accountability for Learning Outcomes Project (GALOP), supported by the World Bank, collaborates with NGOs and tech companies to enhance ICT labs and teacher resources in rural schools. Similarly, initiatives like Ghana Code Club train teachers and students in coding and digital safety,

reaching thousands of learners across underserved communities. These examples demonstrate that partnerships reduce costs, promote sustainability, and increase reach.

Finally, research by the World Economic Forum (2023) indicates that early exposure to digital tools builds confidence, creativity, and future employability. Students who regularly use technology show greater engagement and problem-solving abilities, critical for a digital economy. Addressing the digital literacy gap, therefore, is not only an educational goal but also a national development priority for Ghana.