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INFORMATION SYSTEMS EDUCATION JOURNAL

Editors

AI Skills for Entrepreneurs: A Practical Experiential Learning Approach

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Abstract

This study explores the effectiveness of experiential learning in teaching generative AI to entrepreneurs and small business owners. The in-person training program, grounded in Kolb's Experiential Learning Theory, aimed to enhance participants' understanding, attitudes, and perceived benefits of AI adoption. Through a structured cycle of Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation, participants engaged in hands-on activities with AI tools. The results highlight significant improvements in AI competency, showcasing the potential for experiential learning to reduce perceived technological complexity and drive innovation. This approach provides insights into upskilling entrepreneurs, equipping them with the practical knowledge needed to harness AI for business growth and sustained competitiveness.

Keywords: Generative AI, Experiential Learning Theory, Entrepreneurship, AI teaching methods.

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AI Skills for Entrepreneurs: A Practical Experiential Learning Approach

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1. INTRODUCTION

The rapid advancement of artificial intelligence (AI) technologies has created unprecedented opportunities and challenges for businesses (Przegalinska & Triantoro, 2024). Entrepreneurs and small business owners must navigate the evolving nature of technologies to maintain competitiveness and foster innovation. Industry research shows that there are many AI opportunities that entrepreneurs could pursue (Shepherd & Majchrzak, A. 2022). However, the adoption of AI in small businesses can be hindered by the perceived complexity of these technologies (Upadhyay et al 2023). Therefore, effective training programs are essential, particularly those that leverage experiential learning methodologies to bridge this knowledge gap (Lang & Triantoro, 2022).

In today's rapidly evolving economic landscape, the importance of upskilling and reskilling the workforce cannot be overstated. The World Economic Forum (2024) reports that almost a quarter of all jobs are expected to change in the next five years, requiring reskilling due to technological advancements and the changing nature of work. Upskilling and reskilling are essential to ensure that workers can adapt to new roles and tasks, maintaining employability and contributing to economic growth (Lang & Triantoro 2022). For entrepreneurs, especially those running small businesses, staying abreast of technological developments is necessary for maintaining competitiveness and fostering innovation. Training programs that incorporate experiential learning can provide entrepreneurs with the practical skills and confidence needed to adopt and implement new technologies, such as generative AI.

Economic data supports the importance of training and development for local entrepreneurs. A study by Bloom et al. (2020) found that management training programs for small businesses led to significant improvements in business practices and performance. Such programs not only benefit individual entrepreneurs but also contribute to broader economic development by fostering a more skilled and innovative business community.
Kolb's Experiential Learning Theory (ELT) posits that learning is the transformation of experience into knowledge, involving Concrete Experience, Abstract Conceptualization, Reflective Observation, and Active Experimentation (Kolb & Kolb, 2021). This continuous, iterative cycle enables learners to experience, reflect, conceptualize, and act, integrating observations into abstract concepts that inform new actions (Kolb et al., 2014).

Given the critical role of experiential learning in enhancing technological competence and the significant economic benefits of upskilling entrepreneurs, this study aims to assess the impact of a targeted AI training program on local entrepreneurs. By utilizing Kolb's Experiential Learning Theory as the theoretical framework, the training program was designed to engage participants in concrete experiences, reflective observation, abstract conceptualization, and active experimentation with AI tools.

The following sections will introduce related literature and hypotheses, followed by the methodology of this study, design and implementation of the AI training program, the data collection methods, and the analytical techniques used to evaluate the program's effectiveness.

2. RELATED LITERATURE AND HYPOTHESES DEVELOPMENT

Experiential Learning

Kolb's Experiential Learning Theory (ELT) conceptualizes learning as the process through which experience is transformed into knowledge (Kolb & Kolb, 2021, Kolb, 1984). In ELT, learning is seen as a process of knowledge construction, involving a dynamic interplay among four modes: Concrete Experience, Abstract Conceptualization, Reflective Observation and Active Experimentation, which adapt to contextual requirements. In this learning cycle, the learner engages in experiencing, reflecting, thinking, and acting in a continuous, iterative process. Concrete experiences provide a foundation for observations

and reflections. These reflections are then integrated and distilled into abstract concepts, which can inform new actions. These new actions can be tested, leading to the creation of further experiences, thus perpetuating the learning cycle.

Research underscores the importance of experiential learning in various educational and professional contexts. For example, Beard (2023) highlights the effectiveness of experiential learning in developing practical skills and enhancing learner engagement. Similarly, Van Wart et al. (2020) emphasize that experiential learning can significantly improve the understanding and application of complex concepts in professional training programs.

The ELT has been extensively used to study end-user software use and end-user training in the fields of computer and information science (Kolb et al. 2014). This application has shown that experiential learning can significantly enhance user competence and confidence in using complex software tools. Such findings underscore the theory's relevance in various contexts, including the training of entrepreneurs in utilizing AI technologies.

Research in information systems and educational technology supports the effectiveness of experiential learning methods. Studies have shown that experiential learning enhances user engagement, satisfaction, and knowledge retention. For example, Jewer & Evermann (2015) highlighted the importance of experiential learning in information systems education, demonstrating that hands-on activities significantly improve learning outcomes and engagement. Konak et al. (2014) found that experiential learning approaches in software training programs lead to higher levels of user competence and confidence in virtual settings. Kolb and Kolb (2017) reaffirmed the relevance of ELT in modern educational settings, emphasizing its adaptability and effectiveness in diverse learning environments.

Importance of Training Local Entrepreneurs

Training local entrepreneurs is vital for economic development, particularly in fostering innovation and driving local economies. Small businesses are often the backbone of local economies, creating jobs and providing essential goods and services. According to the U.S. Bureau of Labor Statistics (2024), small businesses contributed 55 percent of the total net job creation from 2013 to 2023, and currently employ 46.8% of the entire workforce, with about 61.6 million employees (SBA Office of Advocacy, 2023). The trends also hold globally with small businesses accounting for 90% of all businesses and creating more than 50% of employment worldwide (World Bank, 2019).

Despite their value, not all small businesses manage to survive the entrepreneurial journey. 20% of all small businesses fail in their first year, while 50% shut their doors within 5 years of incorporating (Bureau of Labor Statistics, 2023). Aside from difficulties associated with financing, many of these businesses fail due to inadequate management, ineffective business planning (Perry, 2001) and marketing mishaps (Perry, 2001, Arriaga-Muzquiz, et al., 2015).

Entrepreneurs are key drivers of innovation, job creation, and economic growth (Hossein 2018). By equipping them with the necessary skills and knowledge, training programs can have far-reaching social impacts. Effective training programs can help entrepreneurs acquire better management techniques, effective business planning and marketing strategies, which can help curb the aforementioned failures. In addition, they can help leverage technologies such as generative AI to improve efficiency, enhance customer engagement, and drive growth. Training that focuses on experiential learning methods, such as those outlined in ELT, can be particularly effective. By engaging in hands-on activities, reflecting on their experiences, and applying new concepts in practical settings, entrepreneurs can develop a deeper understanding and greater proficiency in using AI tools.

Training local entrepreneurs also promotes inclusivity and equity. It can empower underrepresented groups, such as women and minorities, by providing them with the skills and confidence to start and grow their own businesses (Motoyama et al. 2024, O'Brien et al. 2019). This empowerment helps bridge socio-economic gaps and contributes to a more inclusive economy. Women owned businesses currently make about 39.1% of the small businesses in the US (NWBC Annual Report, 2023), and they are more likely to be solo ventures with no employees (Small Business Economic Profile, 2023). Despite owning a smaller percentage of the small businesses, women entrepreneurs, especially women of color entrepreneurs, have been credited for the small business boom after the pandemic as they have been responsible for half of new businesses created for three consecutive years since 2019 (NWBC Annual Report, 2023). However, research indicates that the failure rates are higher among

female entrepreneurs in comparison to their male counterparts (Yang & Del Carman Triana, 2019). Therefore, the training programs geared toward women entrepreneurs become especially important not only to sustain the recent momentum among women entrepreneurs but also to help them continue to grow and sustain their businesses after the initial stage of starting their ventures.

Universities can play a pivotal role in training local entrepreneurs (Mason & Brown, 2014), as they possess the resources, expertise, and infrastructure needed to deliver comprehensive and effective training programs. Collaborations between university researchers and local entrepreneurs can lead to the development of new products and services tailored to community needs (Pahurkar, 2015), mentorship programs and networking opportunities (Etzkowitz & Zhou, 2017).

Generative AI

Generative AI is a rapidly advancing branch of artificial intelligence, known for its ability to produce unique and innovative content that closely resembles human behavior (Dwivedi et al., 2023). These AI systems are trained on extensive datasets comprising text, images, or audio, enabling them to generate original content (Przegalinska & Triantoro, 2024).

The practical applications of generative AI are vast and varied, encompassing fields such as content creation, virtual assistants, decision-support systems, data visualization and education (Gkinko & Elbanna, 2023, Triantoro 2023, Przegalinska & Triantoro, 2024, Lang et a. 2024). In the context of human-AI collaboration, generative AI can significantly enhance productivity and innovation by assisting human workers in various tasks and providing valuable insights (Przegalinska et al. 2025, Dwivedi et al., 2023). This potential makes it important for entrepreneurs to understand and leverage generative AI to maintain a competitive edge and drive growth.

Given the critical role of effective training in enhancing entrepreneurial capabilities, it is essential to assess the specific impacts of such training programs. This study aims to evaluate the effects of a generative AI workshop on entrepreneurs' perceived benefits of AI, their understanding of AI technologies, and their attitudes towards AI. By examining these dimensions, we can gain insights into how experiential learning-based AI workshops can influence key outcomes and contribute to the broader goal of fostering technologically adept and innovative entrepreneurs.

Hypotheses Development

According to Kolb's Experiential Learning Theory, direct engagement and hands-on activities enhance learners' experiences and understanding, leading to more positive attitudes (Kolb, 1984). The AI workshop that includes interactive elements such as practical applications and real-world examples, is likely to make participants more receptive and positive towards AI technologies. Prior studies have demonstrated that experiential learning approaches can significantly improve attitudes towards new technologies (Konak et al. 2014, Jewer & Evermann 2015).

H1 *Participation in the AI workshop will significantly improve the attitudes of entrepreneurs and small business owners towards AI.*

ELT posits that learning through concrete experiences and reflective observation can help individuals see the practical advantages of new tools and technologies. By providing real-world examples of AI applications in business and personal contexts, the workshop may help participants understand the tangible benefits of AI. Previous research in information systems has shown that experiential learning can enhance perceptions of technology benefits (Kolb et al. 2014).

H2: *Participation in the AI workshop will significantly increase the perceived benefits of AI among entrepreneurs and small business owners.*

ELT emphasizes the importance of active experimentation and reflective observation in deepening understanding. The AI workshop's structure, which includes hands-on activities with AI tools followed by reflection and discussion, aligns with this principle. Experiential learning has been proven to increase comprehension and retention of complex concepts (Kolb & Kolb, 2017). By engaging in active experimentation, participants can directly apply theoretical knowledge, thereby enhancing their understanding of AI technologies.

H3: *Participation in the AI workshop will significantly enhance the understanding of AI among entrepreneurs and small business owners.*

3. METHODOLOGY

This study was conducted in person, leveraging the social and interactive components inherent in face-to-face learning environments. Participants were invited from the Entrepreneurship Academy supported by a university located in the Northeast of the United States. Participation in the study was free.

A group of 18 entrepreneurs attended the training. The average age of the participating entrepreneurs was 45. 15 out of the 18 participants were women, 82% of which were women of color. The majority of the businesses were in their first three years of operation and 65% of them were solo entrepreneurs with no employees.

The participants completed a survey at the beginning and at the end of the workshop. The pre-test was administered before any training exposure to establish a baseline understanding of AI, while the post-test assessed improvements in AI attitude, perceived benefits, and understanding. The survey data was collected via Qualtrics and subsequently analyzed in R. Additional information about the survey items can be found in Appendix A.

The training was designed and implemented by an experienced professor with expertise in AI-human interactions. The session followed a structured agenda, beginning with an introductory lecture, followed by hands-on activities, guided experimentation, and group discussions. The professor structured a two-hour training session that adhered to Kolb's Experiential Learning Theory (ELT), integrating all four stages of the ELT framework to optimize learning outcomes. First, the professor initiated the training with a brief explanation of how AI, specifically Large Language Models, operate. The instructor then demonstrated practical examples, such as creating a job post and a social media post using text, images, and music generated by AI tools. This hands-on demonstration illustrated the practical applications of AI in business contexts. The instructor also discussed the importance of context in generating content and guided participants through the steps of effective prompting techniques. Participants were then tasked with applying these techniques to create their own job posts and social media ads tailored to their business needs. This structured approach from theoretical grounding to practical application laid the foundation for implementing the four stages of Kolb's Experiential Learning Theory as follows:

Abstract Conceptualization involved the introduction to various types of AI, providing a foundational understanding of AI technologies. Participants were introduced to LLMs, learning about their functionalities and applications. Furthermore, effective prompting techniques were taught, including the importance of context, few-shot learning, and implementing chain of thought methods. Few-shot learning enables AI to perform tasks with minimal examples, enhancing adaptability to new tasks. A chain of thought method involves breaking down complex problems into sequential steps, improving reasoning and problem-solving capabilities. This stage aimed to equip participants with a robust theoretical framework and conceptual understanding of AI and its practical applications.

Concrete Experience was addressed by showcasing real-world examples of how businesses and individuals utilize AI. Practical examples of AI applications in business settings, such as assisting in writing and creating written and visual materials, illustrated the impact and benefits of AI technologies. Additionally, examples of personal use cases of AI demonstrated its versatility and relevance to everyday activities. Participants gained tangible insights through these examples, grounding their theoretical knowledge in real-world contexts.

Active Experimentation included participants engaging in hands-on activities using ChatGPT, DALL-E, and Suno to create their own text, image and audio examples. Participants applied their learning directly by using these AI tools to develop a job post and a comprehensive social media advertisement. This involved generating engaging text with ChatGPT, creating visually appealing images with DALL-E, and producing accompanying music with Suno. This stage facilitated the practical application of concepts, enabling participants to experiment with AI technologies in a controlled, supportive environment.

Reflective Observation included reflection and evaluation of experiences. Participants reflected on their experiences using AI tools, discussing what they learned, challenges encountered, and insights gained. They also presented their AI-generated examples to each other and the class, receiving feedback and learning from peers. Additionally, participants completed a post-test survey to assess their learning outcomes, changes in attitudes towards AI, and overall

training effectiveness. This stage ensured that participants critically evaluated their experiences, fostering a cycle of continuous learning and improvement.

By leveraging the strengths of ELT, this study aimed to provide participants with an engaging and practical learning experience, enhancing their understanding and application of AI technologies in entrepreneurial contexts. The structured methodology ensured that participants moved seamlessly through each learning phase, reinforcing both conceptual understanding and practical application. The AI training tasks are summarized in Table 1.

ELT Stage	AI Training Task
Abstract Conceptualization	Types of AI. Definition and mechanism of LLMs. Prompting: Adding Context, Few Shot Approach, Chain of Thought.
Concrete Experience	Real world examples of how businesses use AI. Real world examples of how people use AI.
Active Experimentation	Participants apply hands-on application and experimentation ChatGPT, DALL-E, and Suno to create their own examples.
Reflective Observation	Reflection and evaluation of experiences, presenting in class, and post-test survey.

Table 1. AI Training Tools and ELT Stages.

4. RESULTS

Of the 18 participants that completed the pre-test survey, 13 (72.22%) also completed the post-test survey. Detailed personal and business information about the participants that completed both the pre- and post-test survey can be found in Appendix B.

Three paired samples t-tests were conducted to compare AI attitude, AI perceived benefits, and AI understanding pre- and post-test. There was a significant difference in AI attitude before ($M = 4.15$, $SD = 0.89$) and after ($M = 4.85$, $SD = 0.36$) the workshop ($\Delta = 0.70$, $t(12) = -2.92$, $p = 0.01$). Thus, H1 is supported.

Likewise, there was a significant difference in AI perceived benefits before ($M = 4.15$, $SD = 0.89$) and after ($M = 4.92$, $SD = 0.28$) the workshop ($\Delta = 0.77$, $t(12) = -2.99$, $p = 0.01$). Thus, H2 is supported.

Finally, there was a significant difference in AI understanding before ($M = 3.31$, $SD = 0.75$) and after ($M = 4.23$, $SD = 0.73$) the workshop ($\Delta = 0.92$, $t(12) = -3.21$, $p < 0.01$). Thus, H3 is supported. Figure 1 depicts the difference in the three variables between pre- and post-test.

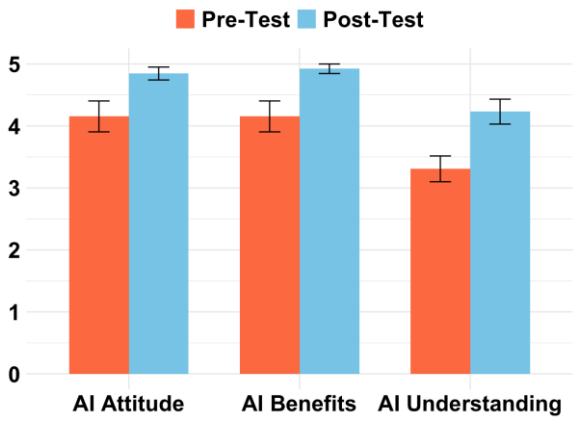

Figure 1: Pre- and post-test scores

To better understand the factors that may have affected the increases in AI attitude, AI perceived benefits, and AI understanding, a pre-test vs. post-test difference score was calculated for each variable. Subsequent correlation analyses (for quantitative variables) and ANOVAs (for nominal variables) revealed that none of the personal or business background variables seem to have affected the increases in AI attitude, AI perceived benefits, or AI understanding. However, the extent to which participants enjoyed the tasks in the workshop was positively correlated with an increase in AI understanding ($r = 0.57$, $p = 0.04$). Stated differently, the more participants found the tasks in the workshop to be enjoyable, the higher their increase in AI understanding after the workshop. Interestingly, neither the difference in AI attitude nor the difference in AI perceived benefits was similarly affected by task enjoyment.

Finally, to determine to what extent higher levels of AI attitude, AI perceived benefits, and AI understanding might have downstream consequences impacting future behavior, several correlation analyses were conducted. It was found that the increase in AI understanding was positively correlated with an intention to obtain additional AI education ($r = 0.57$, $p = 0.04$). Hence, the more participants learned about AI in the workshop, the more likely they are to seek out additional education about AI. Finally, it was

found that the level of AI understanding is positively correlated with an intention to use AI for business ($r = 0.75$, $p < 0.01$). Thus, the higher a participant's AI understanding, the higher their intention to use AI for business. Interestingly again, neither AI attitude nor AI perceived benefits had similar correlations with intention to obtain more AI education or intention to use AI for business.

5. DISCUSSION AND CONCLUSION

Contributions

This study makes several important contributions to the theoretical understanding of experiential learning and its application in the context of AI training for entrepreneurs. First, it extends Kolb's Experiential Learning Theory (ELT) by demonstrating its efficacy in the rapidly evolving field of AI. By integrating four stages of ELT into the AI training program, this research provides empirical support for the theory's applicability beyond educational settings, into professional and entrepreneurial domains.

Second, the study contributes to the literature on technology adoption and learning by highlighting the critical role of experiential learning in enhancing not only technical skills but also attitudes and perceptions towards new technologies. The significant improvements observed in AI attitude, perceived benefits, and understanding among participants underscore the value of hands-on, reflective, and conceptual learning experiences in fostering technology adoption.

Third, this research adds to the body of knowledge on the intersection of AI and education. By focusing on the practical application of AI tools such as ChatGPT, DALL-E, and Suno, the study bridges the gap between theoretical AI knowledge and its real-world applications. This integration of AI and experiential learning provides a framework for future studies exploring innovative educational methods to enhance technological competence.

From a practical perspective, this study offers insights for designing and implementing effective AI training programs for entrepreneurs and small business owners. Given the high rates of failure among small businesses after incorporation, developing training programs that leverage new technologies can help entrepreneurs lower the risk of failure and provide substantial benefits for the entrepreneurial ecosystem. Since failure rates are higher for women entrepreneurs, these training programs are additionally important to create an entrepreneurial ecosystem with fewer socio-economic gaps, leading to a more inclusive economy.

Additionally, the use of Kolb's ELT framework ensures that training programs are comprehensive, engaging, and conducive to deep learning. Practitioners can adopt this model to create training sessions that not only convey theoretical knowledge but also provide ample opportunities for hands-on practice and reflection.

Moreover, the study underscores the significance of providing a supportive and interactive learning environment. The in-person format of the training facilitated social learning, allowing participants to share experiences, provide feedback, and learn from each other. This aspect of the training can be particularly beneficial for entrepreneurs, who often rely on peer support and collaboration.

Finally, the study's results suggest that AI training programs can have a positive impact on entrepreneurs' future behavior, such as their intention to seek additional AI education and integrate AI into their business practices. This implies that well-designed training programs can have long-term benefits, contributing to the overall digital transformation and competitiveness of small businesses.

Limitations and Future Research

We acknowledge that the small sample size is a limitation that affects the statistical power and generalizability of our findings. At the same time, through the substantial work undertaken in this study, we developed and implemented a comprehensive in-person AI training program designed specifically for entrepreneurs. This methodology provided participants with a robust learning experience, combining theoretical knowledge, practical application, and reflective observation.

Recognizing the need for further validation, we are planning a longitudinal study and a broader survey based on this initial work. Future studies would also benefit from using additional measures to capture the multi-dimensional factors alluded to in this work. These future efforts aim to involve larger sample sizes and incorporate additional objective measures to strengthen the reliability and applicability of our findings.

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APPENDIX A: SURVEY ITEMS

Personal and business background information

Attitude Towards AI: How would you describe your attitude towards the use of artificial intelligence in business? 1 (Very Negative) to 5 (Very Positive)

Perceived Benefits of AI: To what extent do you feel that artificial intelligence is beneficial for businesses like yours? 1 (Not Beneficial at All) to 5 (Extremely Beneficial)

Understanding of AI: How confident are you in your understanding of the benefits and risks of artificial intelligence in business? 1 (Not Confident at All) to 5 (Extremely Confident)

Task Enjoyment: I enjoyed working on the task. 1 (Strongly Disagree) to 5 (Strongly Agree)

Intention to Use AI (adapted from Venkatesh et al. 2012): I plan to continue to use the technology I used for this task frequently. 1 (Strongly Disagree) to 5 (Strongly Agree)

Intention to Obtain AI Education: How likely are you to seek out additional resources to learn about AI after this workshop? 1 (Very Unlikely) to 5 (Very Likely)

APPENDIX B: PERSONAL AND BUSINESS BACKGROUND OF PARTICIPANTS

Education	**Some college, but no degree** 3 (23.08%)		**Associates or technical degree** 1 (7.69%)		**Bachelor's degree** 2 (15.38%)		**Graduate or professional degree** 7 (53.85%)
Age	**18-24** 1 (7.69%)		**25-34** 2 (15.38%)	**35-44** 3 (23.08%)	**45-54** 5 (38.46%)		**55-64** 2 (15.38%)
Gender			**Female** 11 (84.62%)		**Male** 2 (15.38%)		
Business Type	**Consulting Services** 3 (23.08%)	**Education and Training** 2 (15.38%)	**Food and Beverage** 1 (7.69%)	**Manufacturing and Craft** 1 (7.69%)	**Professional Services** 1 (7.69%)	**Retail and E-Commerce** 2 (15.38%)	**Other** 3 (23.08%)
Employees			**Solo Entrepreneur** 12 (92.31%)		**2-3 Employees** 1 (7.69%)		
Years in Business	**< 1 Year** 5 (38.46%)		**1-3 Years** 4 (30.77%)	**4-6 Years** 1 (7.69%)	**7-10 Years** 2 (15.38%)		**> 10 Years** 1 (7.69%)
Business Revenue	**< $10k** 8 (61.54%)	**$10-20k** 2 (15.38%)	**$20-50k** 1 (7.69%)	**$50-100k** 1 (7.69%)	**$100-200k** 0		**> $200k** 1 (7.69%)
Is Business Primary Employment?			**Yes** 4 (30.77%)		**No** 9 (69.23%)		
Hours Per Week	**1-5h** 4 (30.77%)	**6-10h** 1 (7.69%)	**11-15h** 0	**15-20h** 0	**21-25h** 4 (30.77%)	**26-30h** 0	**31-35h** 1 (7.69%)	**36-40h** 3 (23.08%)

Note that some categories with 0 responses have been omitted from the table for space reasons