"No Matter I'll Be Selected; in the Next Challenge I Will Be Better!" – Understanding Non-Technical Skill Development in the Gig Economy

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Abstract

While prior research on gig work environments studied necessary technical skills for information systems development (ISD) professionals and how they can be developed, the improvement of non-technical skills (NTS) has been rarely explored. However, to successfully engage in the gig work economy, the need for strong NTS is increasing. Based on an experiential learning theory (ELT) perspective, we explore how ISD professionals engaging in the gig economy develop NTS by following grounded theory methodology. Our results are threefold: first, we identify crucial NTS for gig workers. Second, we uncover how these NTS are developed in different phases of adapting to working on gig economy platforms. Third, we reveal several strategies for thriving in the gig economy. Based on our findings we develop a process model of non-technical skill development and discuss this model in relation to implications for gig economy literature and practice.

1. Introduction

"*Unfortunately, some people believe that soft skills aren't that important. However, almost every employer I've ever talked to about this disagrees. In a world where job roles are changing rapidly, soft skills will be one of the few constants [...]*", Chris Jones, Chief Executive at City & Guilds [1]

The gig economy is associated with a new form of work in the digital world, created many new job roles and is nowadays well established as an alternative or addition to formal employment in a company. Gig work builds on the principles of crowdsourcing and is a paid, mostly short-term contract work enabled by digital platforms [2, 3]. More than 150 million professionals shifted their work environment to platform-based freelance in order to work as independent contractors [4]. Gig work is prevalent across a high variety of industry sectors. Though especially information systems development (ISD), as a knowledge-intensive industry, is among the fastest-growing ones in freelance environments [5]. The number of platforms on which jobs are offered (e.g., Upwork, Topcoder) is growing, and so is the number of ISD professionals engaging in gig work on such platforms [6, 7].

The rising number of ISD professionals offering their workforce on gig economy platforms leads to a high competition among workers. Getting a contract for a job on gig economy platforms, requires ISD professionals to distinguish themselves and their offerings from other competitors [8]. One influencing factor are a gig worker's references and ratings for completed jobs, as they indicate how successful one performed in the past. Rating systems on gig economy platforms, like Upwork, ask clients to evaluate the gig workers' job outcomes as well as performances related to their interaction, such as communication and cooperation [9]. Whereas the job outcomes of ISD professionals are closely related to their technical skills, additional evaluation criteria stem from rather non-technical skills (NTS). NTS can be summarized as organizational skills, interpersonal skills, as well as personal skills and traits [10]. Thus, NTS are not only a critical factor to succeed in a gig work environment, ISD professionals may even sell their NTS as competitive edge to receive a contract on gig economy platforms. In order to do so, gig workers need to enhance their non-technical skill set.

Prior literature has found the intentional development of technical skills as a key motivating factor for ISD professionals to engage in platform-based gig work [11, 12]. For instance, gig workers particularly choose jobs that challenge their existing skills in algebra in order to enhance them [11]. While the gig workers' development of technical skills is well understood, the development of NTS remains an open question [13, 14]. At the same time, research on NTS is a well-established field across many disciplines [15, 16]. However, this literature focuses mainly on NTS development in educational (i.e., schools) or organizational settings [15, 17] but does not account for the work reality of most independent workers in the gig economy who sell their offerings digitally mediated directly to the market and are – if at all – only loosely connected to organizations

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[18]. Gig workers are solely dependent on virtual tools to present themselves, ask questions, solve issues and build a relationship with clients. This work environment forces workers to develop necessary NTS [19] and disadvantages those without in the competition for the best jobs [20, 21]. Therefore, this research pursues the objective of answering the following question:

How do ISD professionals engaging in the gig economy develop non-technical skills needed for this work environment?

Exploring this question is critical for several reasons. First, the importance of NTS for gig workers can be concluded and is in line with IS workforce research, in which the importance of NTS for ISD professionals is established [16, 17]. However, the set of NTS needed specifically for a purely digitally mediated work environment such as gig work remains unknown. For instance, within gig work environments, ISD professionals work flexibly as freelancers or independent contractors and on multiple jobs for multiple customers at once [11] which requires them to distribute their effort and manage their time fairly. Second, it is unclear how gig workers develop their NTS. The nature of gig work implies that gig workers rarely interact with other workers or their clients in person. However, this is known to be helpful for the development of NTS, e.g., by imitation.

To respond to our research question, we conduct a qualitative study based on the methodological guidelines for grounded theory [22]. First, we aim to explore the specifically needed NTS within this environment in order to develop a theoretical understanding on how the ISD professionals develop these skills. We collect data on Upwork as a typical gig work platform which ranges among the largest ones.

Our findings are valuable for theory and practice. We contribute to research in a twofold way. First, we extend the understanding of skill development on gig work platforms from technical skills toward NTS. A process theory will explain the development of NTS in gig work. Second, we contribute to gig economy literature by disentangling the required non-technical skill set for gig work, as a purely digitally mediated work environment without any physical interaction. Practitioners, particularly potential gig workers, learn which NTS are required to work successfully on gig work platforms. They will understand how they can foster the development of NTS by engaging in gig work.

2. Related Research

2.1. ISD Professionals in the Gig Economy

Gig work comprises different types of paid online work ranging from creative projects to routine tasks [2].

Gig workers are organized, evaluated, and paid by an online gig work platform on which requesters (e.g., organizations, individuals) may offer jobs [23]. The number of gig work platforms, as well as the number of people willing to provide their workforce to these platforms, increased significantly during the last years [24]. Prior studies on gig work focused on the motivational factors of gig workers to engage in this kind of work environment [11, 12] as well as on related outcomes like satisfaction [11, 25], and identification [25]. Despite several advantages such as flexibility, job autonomy, and equipment simplicity, the overall working conditions on these platforms are often evaluated as unfavorable and exploitative [26]. Nonetheless, skill development due to work variety and task complexity has been repeatedly found to be one of the key drivers to participate on those platforms [11, 12]. Moreover, Taylor and Joshi [7] identify the development of both business-related and technical skills as a career anchor for ISD professionals. Accordingly, gig workers enhance their technical skills by challenging their own technical abilities while skills in the business domain evolve by leveraging their entrepreneurial creativity. So far, gig work literature barely distinguishes between technical skills and NTS but results suggest that studies implicitly focus on the former leaving research on NTS in gig work contexts mostly untouched.

Highly qualified ISD professionals belong to the targeted, high-end niche which can be recruited on specialized ISD gig work platforms (e.g. Topcoder, Upwork) where skill requirements for job completion are comparably high. Since these competent, creative workers are in high demand, the question arises why they would take the risk of gig work instead of receiving the certainty that traditional work arrangements offer [6]. Recent research suggests that highly skilled, creative employees demonstrate risk-friendly behavior in relation to employment and are motivated to do so as the risks are compensated by self-growth opportunities, a sense of autonomy, and a sense of psychological security which are important to retaining and attracting professional workers [6]. This suggests that gig work platforms can not only provide volatile jobs, but also an attractive working environment that can foster professionalism of employees and sustainable practice communities. Moreover, the advantages for organizations using the workforce of ISD gig workers have been discussed [27]. By publishing jobs on ISD focused gig work platforms, organizations signal the demand for new technical skills which attracts proactive gig workers who, as a result, develop new technical skills for emerging technologies [27]. Hence, prior research identifies skill development as one of the major drivers for ISD professionals to participate in gig work

[13]. However, it remains unclear if and how (specific) NTS can be developed in this work environment.

2.2. Non-Technical Skills and their Development

NTS are subject of research interest for many disciplines (e.g., social psychology) as the possession of these skills is associated with life and employment success [15]. Since the early 1990s, IS workforce research has emphasized the importance of NTS for organizational performance and individual IT careers (e.g., [16, 17]). Numerous definitions for NTS can be found [15]. While Riggio [28] provided a first comprehensive collection on a basic level, these sets of skills were subsequently refined for ISD professionals. Aasheim et al. [10] synthesized them into the following main categories: (1) organizational skills (i.e., time management, project management), (2) interpersonal skills (i.e., communication, teamwork) and (3) personal skills and traits (i.e., creativity, flexibility).

Besides the identification of NTS, their development is an important research field. Whereas technical skills can be developed through numerous methods (e.g., self-directed learning, evidence-based learning), only two types of methods stand out for NTS as their development requires actively interacting with other people [29]: instructional methods (e.g., formal lectures or non-formal active learning like workshops or role plays) at the workplace or within the educational system [30, 31] and continuous development shaped by the (work) environment [29, 32]. Both are based on the central process of "imitation". Skills are developed as a function "of observing the behavior of others and its response consequences" [2, p. 47]. Hence, NTS are notably developed through social interactions, such as providing assistance, exchanging information, or teamwork, giving ISD professionals opportunities to observe NTS of others [34, 35, 36]. However, the gig work environment is characterized by the absence of physical interaction. Only digitally mediated interaction exists (i.e., through chat functions on the gig work platforms) and teamwork is rare as in most cases a single gig worker completes a job [26]. Additionally, ISD professionals in gig work are not part of their clients' organization and will therefore not benefit from potential instructional methods for employees. Therefore, imitation of others is more difficult in gig work environments and gig workers need to apply other forms of non-technical skill development.

2.3. Experiential Learning Theory

The experiential learning theory (ELT) defines learning not as measurements of input and output, but as a continuous learning cycle that is never finished [37]. It is driven by the resolution of the dual dialectics of action and reflection, as well as experience and abstraction. This theory is used in management learning, which includes, for instance, leadership, teamwork, organization, communication.

ELT is a holistic theory. Learning is seen as the central process of human adaption. Therefore, ELT includes learning on all levels of human society, from individual learning over learning as a group or organization to learning as the whole society [38]. ELT is not focused on learning in a classroom but in any real-life situation. This theory focuses on experience and 'learning by doing' which makes it applicable in learning of NTS. ELT sees learning as a continuous process: a cycle where there is no end and no real beginning. Learning continues forever, moving from state to state. In this cycle, knowledge is created through the transformation of experience. In the experiential learning cycle, there are two different modes of grasping experience, the states concrete experience and abstract conceptualization. There are two modes of transforming experience too, reflective observation and active experimentation [38]. A learner touches all those bases in the process of learning – experiencing, reflecting, thinking, and acting – while a concrete experience is the base for observations and reflections. Eventually, the reflections are merged into abstract concepts. From these concepts, new implications can be drawn. They will be actively tested afterwards, which creates new experiences, and the cycle begins all over again [38, 39].

Therefore, we adopt ELT as meta-theoretical lens as we believe that ELT is a promising theory that can explain the development of NTS in experience-based environments such as the gig economy.

3. Methodology

As presented in the previous section, current research provides little theoretical guidance for the under-researched area of NTS development in a purely online gig work environment. Grounded theory methodology (GTM) is a popular qualitative research approach in IS that enables the discovery of inductive theory [40] as "it allows the researcher to develop a theoretical account of the general features of a topic while simultaneously grounding the account in empirical observations or data" (p. 141) [41]. Akin to Gerlach and Cenfetelli [42], we argue that GTM is suited to respond to our research question.

3.1. Data Collection

Our study is further modeled along the lines of Deng et al. [26], as we collect qualitative data in the first

phase of data collection on gig economy platforms focused on ISD professionals as independent contractors on project by using a survey instrument that contains highly open questions. We ask participants to remember their last gig work jobs and to provide details as to how and when they employed NTS in these jobs, what non-technical learnings they had, and whether they believe their NTS improved. After this general reflection on NTS, we ask them similar questions in detail for organizational skills (i.e., understanding of a business problem, time management, project management), interpersonal skills (i.e., communication, teamwork, negotiation) and personal skills and traits (i.e., creativity, flexibility, entrepreneurial skills). In each section, we also ask whether the participants would consider other skills relevant. Thereby, we aim to focus the participants' responses on the same understanding of NTS while the researchers can stay open-minded about diverging perceptions and avoid force-fitting data into predefined concepts [22]. Additionally, responses regarding demographics (e.g., gender, age, education) and experience (e.g., how long the ISD professionals are using the specific platform, weekly working hours spent on jobs offered on the platform, and whether this platform is the main source of income) are collected. We have improved the comprehensibility and appropriateness of the open questions beforehand through a qualitative pre-survey with several computer science and information systems students.

We invite members of the gig work platforms Upwork and Topcoder, specialized on highly skilled ISD professionals, to participate in our study. On both, ISD professionals have to apply (with CV on their profile and/or motivation letter) to get selected for negotiation and finally for a job. In order to ensure that participants can sufficiently inform our research, we apply theoretical sampling. We collected open survey data from 13 ISD professionals. Participants come from several countries and show great variance in the number of jobs completed, the total amount earned and the hours they worked on Upwork and Topcoder.

In accordance with the GTM procedure of theoretical sampling and Urquhart et al.'s [22] guidelines, we further diversify our data collection and sample in a second phase after a first round of open coding. We conduct 12 in-depth semi-structured interviews with gig workers from three platforms, namely Fiverr, Upwork and Topcoder (work experience on respective platform: 1 to 7 years; age: 26 to 41 years; gender: 10 males, 2 females). We furthermore consider more diverse experience in work environments among the participants (e.g., ISD professionals working full-time on platform vs. ISD professionals using it as secondary employment from time to time). This two-

phased data collection procedure is in line with the approach by Gerlach and Cenfetelli [42].

3.2. Data Analysis

Although data analysis is described separately from data collection, we emphasize that, following GTM, all steps of this study are highly intertwined and iterative [22, 43, 44]. Following the guidelines of Urquhart et al. [22] for the GTM procedure of constant comparison, each individual researcher analyzes every response, goes back and forth to previous responses, and extends her or his memos in which initial ideas of understanding are described. Memos are then discussed, and the survey instrument as well as the interview guidelines for semi-structured interviews is adapted for the next participants (e.g., refining questions to understand non-technical skill development through the different job phases).

In detail, we use the open, focused, and axial coding techniques described by Charmaz [45]. During open coding we analyze responses for each question line-by-line. Additionally, we use a set of a-priori concepts from our theoretical lens of ELT, namely the four learning styles "diverging", "assimilating", "converging", and "accommodating". Applying a-priori concepts is a common practice in IS research [46] and helps us to disentangle the development of NTS.

Through focused coding, we then select the most frequent codes and contrast them against our data [45]. While constantly comparing codes and data, we employ axial coding to move open codes to enriched higher-order categories. Once having collected additional data, we conduct theoretical coding [22, 44] to build an integrated process theory [47, 48], interrelating the categories defined earlier and specifying these relationships.

4. Results

In the following, we present the results of our study, starting with crucial NTS, followed by the development of these skills in different phases of adapting to working on gig economy platforms and lastly presenting several strategies for thriving in the gig economy.

4.1. Non-Technical Skills

In order to explain how ISD professionals develop NTS needed for gig work, it is critical to understand which NTS are crucial within the gig work environment. Gig workers face various challenges in different phases of their jobs. Utilizing NTS helps gig workers to solve these challenges. Our data analysis revealed four crucial non-technical skill sets, namely communication skills,

organizational skills, client management as well as interpersonal skills and personality traits (see Table 1). Each skill set includes several NTS that gig workers leverage when working in the gig economy. However, not all NTS are equally important throughout the entire gig work job. In the fully digital context of gig work platforms, the NTS are leveraged differently than in non-digital contexts. The nature of gig work jobs influences the specific utilization of skills. Surprisingly, although jobs in the gig work environment are characterized by high autonomy, interpersonal skills are particularly important in this context.

We found varying levels of NTS to have different purposes for gig workers. A minimum level of all the above-mentioned NTS enables the gig workers to receive a contract and complete the jobs. The higher the level of specific NTS is, i.e., the better developed the skills are, the more they can contribute to completing a job successfully. For instance, communication and interpersonal skills are crucial for the first interaction between a client and a gig worker in order to receive a contract for a job. Overall, gig workers reported that they need all four skill sets to be successful as independent contractors on gig economy platforms.

Table 1. Crucial non-technical skill sets

Non-technical skill sets	Non-technical skills	Exemplary quote
Communication skills enable the gig worker to efficiently interact with clients throughout all steps of a job. The subject of interaction changes during the course of a job but is considered overall as the most important non-technical skill. Gig workers primarily communicate in a written form with their clients and only occasionally extend direct communication via phone or video calls.	▪ Written communication ▪ Verbal communication ▪ Listening ▪ Negotiating	*"I need to communicate every day [...] and I can say it helps to understand tasks better and avoid misunderstanding."* (I2)
Organizational skills are considered the second crucial skill. Gig workers need to distribute their own time and effort among different jobs which they often handle in parallel while being impacted by specific job constraints (e.g., deadlines). Due to the nature of independent contract work in which gig workers accept jobs from global clients and are themselves responsible for meeting deadlines, organizational skills are key for job success and satisfaction of their clients.	▪ Time management ▪ Being reliable ▪ Decision-making ▪ Showing accuracy and persistence	*"When you work on a platform like Upwork it is important to organize your working time and day. So, I can say, if you can't organize your working day yourself, you can't work on Upwork."* (I2)
Client management involves skills to understand the client's requirements and complete jobs to their satisfaction in order to gain a positive reputation. ISD professionals in gig work environments must be able to respond to the needs of clients ranging from scant to extensive technical knowledge.	▪ Understanding business needs ▪ Bridging between domains ▪ Problem-solving ▪ Creative thinking	*"Understanding the needs of a client even if they don't know the technical language to describe what they want."* (I5)
Interpersonal skills and personality traits are required both when working with clients as well as for a gig workers own development. Gig workers can draw upon a truly global job market with international clients and jobs from various backgrounds but with an international competition, too. When working with new clients, these skills may give an advantage.	▪ Challenging oneself ▪ Showing self-confidence ▪ Developing patience ▪ Critical thinking	"*Having great interpersonal skills is important because a good (first) impression is key to obtain a contract.*" (I9)

4.2. Non-Technical Skill Development

Gig workers develop and improve different NTS in different phases throughout their career in the gig economy. We uncover three phases that help to better understand when and how gig workers realize skill development: the *initiation* phase, the *transition* phase and the *establishment* phase. We observe that skill development is essential and occurs most intensively in the initiation and the transition phase (see Table 2).

The initiation phase is characterized by a gig worker getting acquainted with the gig economy platform once she or he signed up as independent contractor. Gig workers are highly challenged by this new working environment:

Table 2. Developed non-technical skills and their corresponding learning style in the initiation and transition phase

Phases	Learning type	Developed non-technical skills	Exemplary quote
Initiation	Diverging	Understanding business needs	*"Another type of challenge […] is, that you need some time to understand, what the business wants from the project."* (I18)
		Challenging oneself	*"When I was entering any challenge, I knew, that I may not be selected, and I may not take any money for this work, but I was sure, that I learn something and I know definitely, that in the next challenge of that sector, I will be better and maybe win."* (I16)
	Assi-milating	Showing self-confidence	*"I guess being open and outgoing and like your attitude in general is most important because otherwise you will have a hard time getting hired - especially in the beginning - but you also need to be confident and believe in yourself and even believe in your work. The client will notice right away if you have any insecurities."* (I21)
		Bridging between domains	*"I'm a lot better communicating with people who are from a "not technical" background. So in high sight that was for sure something that really has helped me a lot with future clients."* (I20)
Tran-sition	Conver-ging	Being reliable and managing time well	*"Being reliable is very important. Most of the time your clients will have deadlines and if you don't deliver your work on time, they won't be able to meet their deadlines, which can cause uhm chaos for both of us."* (I21)
		Decision-making	*"I am becoming good at decision-making, like, sometimes I refuse clients. I do not say "yes I will do it, I am sure about it", so according to their requirements, if I guess that I am not able to complete it or something, I refuse a cooperation."* (I25)
		Problem-solving	*"When it comes to algorithm and coding competitions and prototyping competitions, there you need thinking capability, problem solving capabilities, they play a big role there."* (I17)
	Accommo-dating	Showing accuracy and persistence	*"No seriously I always sent out extensive proposals, put attention to the details mentioned in the job offering and eventually heard back from a few, but you are right nowadays I have lots of positive feedback it does feel a lot easier to get invited to projects, but I still send out proposals on a daily basis. Like I said before, being persistent is the key in my opinion."* (I24)
		Written communication	*"I can say, that Topcoder has helped me a lot in this regard. All the communication was asynchronous, recently, in the last 2 or 3 years, they started using slack, not only for the challenges, but also for the community and casual communication."* (I16)
		Negotiating	*"The good thing is that you are learning negotiation, the art of negotiation, […]. It´s quite deeper, but you can learn it through it because you might understand a thing that can be initialized."* (I25)
		Developing patience	*"But the most important thing is that I have learned patience. You need to maintain patience because sometimes you don´t get order, you are not able to convince your clients, you have to be patient and you have to hope that you would be able to convince your client whatever comes in."* (I25)

"*So when I first started out [...], it took quite some time to get hired. I wrote 4 proposals a day for almost an entire week - never got the job but I guess at that time I did not have the profile as convincing as what I have today.*" (IP21)

In this phase, new gig workers start to experience the platform and reflect upon their actions and interactions with potential clients. While making experiences, gig workers learn that they need to understand the business requirements of potential clients while at the same time challenging themselves by applying for as many projects in their domain as possible (diverging). At the same time, gig workers reflect upon each project application and the few projects they manage to win at the beginning which enables them to show self-confidence and to bridge between their domain (e.g., software development) and their clients' domains (e.g., retail) in order to successfully implement their clients' requirements (assimilating). In sum, gig workers use their first concrete experiences in the initiation phase as a basis for observations and reflections in order to master the challenging start.

In the transition phase, gig workers benefit from their first experiences and reflections and derive new implications for further NTS. While often starting to take on several projects at once in this phase, they need to consider three NTS: (1) being reliable towards their clients and managing their time accordingly in order to successfully deliver their projects in time; (2) improving problem-solving skills; and (3) developing decision-making skills in order to decide which projects can be completed according to both the gig workers' technical skills as well as time scheduling (converging). Moreover, in this phase gig workers intensively improve their written communication and negotiation skills by active testing and continuous improvement. Furthermore, they need to develop two essential personal skills: a high level of accuracy and persistence to be successful as well as patience because most projects rarely run as initially expected (accommodating). These four actively tested skills serve gig workers as guidance in order to create new, positive experiences for themselves as well as for their clients.

Once gig workers managed to establish themselves as independent contractors at a gig economy platform, the development of NTS continues but becomes less intense. Gig workers can exploit their non-technical skill sets which they developed and improved in the initiation and transition phases.

4.3. Strategies for Thriving in the Gig Economy

In the establishment phase, we observe that gig workers develop several strategies based on their previously acquired NTS in order to face the fierce competition on gig economy platforms (Table 3).

Leveraging their understanding of business requirements as well as being able to bridge between different domains enables gig workers to develop specialized services. Using this strategy, gig workers may distinguish themselves from competitors.

Another identified strategy focuses on recommendations among gig workers to projects of their clients. Based on their client management and communication skills, gig workers can help each other by recommending fellow gig workers they have previously been working with to new projects.

Table 3. Strategies for thriving in the gig economy in the establishment phase

Phase	Strategies	Exemplary quote
Establish ment	Developing a specialized service	"*There are also soooo many people offering the same - or at least pretty much the same services and so yeah - from the experiences I have made over the past few years I would say, that the less specialized the service is you provide, the harder it is going to be for you to regularly get projects. Especially at the beginning when you do not have feedback*" (I21)
	Recommending and getting recommended	"*I also know freelancers in various other areas, [through working together] on different projects over the past years and we usually help each [other] by recommending people we know when we get hired for a project.*" (I21)
	Keeping long term clients	"*I don't write proposals very often nowadays as potential customers tend to contact me directly or I'm referred to projects by previous customers or people I know, [...] Luckily I have found a few customers [over the years] who need design work for their websites or apps on a regular basis so I have at least some kind of steady income I can plan with.*" (I24)
	Having many different clients	"*My clients are very diverse in terms of their background. I've had clients from pretty much all over the world.*" (I22)

The last two strategies focus on relationship management with and diversification of clients. On one hand, gig workers establish long-term relationships with clients to secure a regular income. Again, gig workers exploit their communication as well as their client management skills to successfully follow this strategy. On the other hand, gig workers try to spread their risk of being dependent on a few clients by diversifying their client base to different domains as well as regions. For this strategy, they benefit from their ability to bridge between different domains as well as their interpersonal skills.

5. Discussion

Based on the results of our overall 25 qualitative survey and semi-structured interviews, we contribute to gig economy literature by developing a process model explaining how non-technical skill development occurs through gig work, in a purely digitally mediated online environment without physical interactions (Figure 1). We identify three phases that define non-technical skill development for gig workers. In the first phase, the initiation, gig workers develop essential NTS by diverging in broad experiences and assimilating the wide variety of information received by potential clients as well as the respective gig economy platform. The second phase, the transition, describes the development of NTS by converging ideas and theories as well as by accommodating with actions and interactions for mastering gig work environments. In the last phase, the establishment, gig workers exploit their previously developed and improved NTS in order to implement strategies for thriving in the gig economy.

Our findings resulting in this model, extends existing knowledge on skill development of highly skilled gig workers [e.g., 6, 7], in two major ways. First, we extend gig economy literature by disentangling the NTS needed in such digitally mediated work environ-
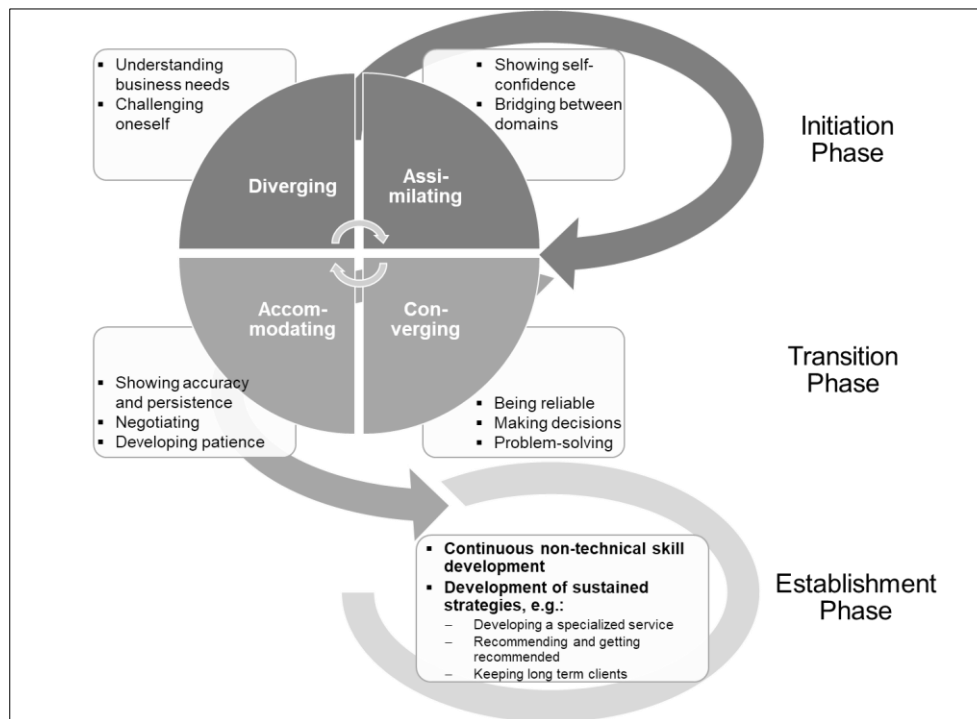

Figure 1. Process model of non-technical skill development for thriving in the gig economy

ments. While extant work has implicitly considered technical skills and omitted NTS, our study focuses on the latter and reveals eleven needed NTS. Second, we uncover the process of how NTS are developed through work experiences in gig work environments. Thereby, we contribute to prior work on the development of technical skills in such environments by illuminating separate strategies, i.e., learning styles, that help to enhance certain NTS. Moreover, we contribute to the understanding of ELT. While previous research on ELT clearly distinguished between learning styles, our findings show that gig workers applied several learning styles at different process phases of NTS development. This entails the assumption that the flexibility and autonomy of gig work environments enables ISD professionals to make use of several types of learning and quickly adapt the concrete learning style in the necessary way.

Our practical contributions are twofold: (1) we highlight NTS that gig workers need to pay special attention to. (2) We provide explanations on how these NTS can be advanced. This way, ISD professionals in the gig economy are able to adapt their NTS in order to plan a successful career. Moreover, companies aiming to use crowdsourcing as well as recruiters may also better understand which NTS ISD professionals with gig work experience have compared to those who have only worked in a traditional work context. Additionally, we develop an understanding of different learning types, as suggested by experiential learning theory [37, 39], and their varying approaches to non-technical skill development in gig work environments. These results may guide both ISD professionals interested in a career in the gig economy [7] as well as companies transitioning to remote working (e.g., as recently due to Covid-19 restrictions) in their adaption of in-house training programs.

6. Conclusion

The need for strong NTS of ISD professionals working as independent contractors on digital platforms is increasing in order to successfully engage in the gig work economy. Based on an experiential learning theory perspective, we show how ISD professionals engaging in the gig economy develop NTS by following grounded theory methodology. Our results reveal crucial NTS sets for gig workers. Moreover, we uncover how these NTS are developed in different phases, especially in the initiation and transition phase of working on gig economy platforms. Lastly, we reveal four strategies for thriving in the gig economy and develop a process model of non-technical skill development in the gig economy. We contribute theoretical implications to the gig economy literature.

Nonetheless, our study is limited by several aspects. First of all, we focus on a smaller group of highly skilled gig workers engaging as independent contractors in short- to long-term projects. Therefore, our results might not be applicable to all highly skilled workers neither to other forms of gig work, such as micro-tasks, as well as to other contexts of low skilled gig work [11]. Second, we only briefly asked our interview partners which NTS they already felt to have acquired prior to commencing their work in the gig economy and how this has influenced their work success. However, NTS development is a continuous process which usually begins with mentorship in families, schools, through prior work experiences, etc. Thus, we currently omit several factors influencing NTS development, such as spillover effects from family-to-work, work-to-work, and other social groups. Third, most of our interview partners had already reached the establishment phase,

while only a few were in the transition phase. Hence, most of our interview partners can be considered as successful gig workers. As our aim is to understand non-technical skill development, being already in the establishment phase seemed advantageous to us as interview partners could well reflect upon the initiation and transition phase, too. However, this may limit our results only to understanding successful skill development, omitting additional challenges for gig workers who fail to reach the establishment phase.

7. References

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