Unveiling the invisible: soft skills recognition from social media

Revelando lo invisible: reconocimiento de habilidades blandas a partir de las redes sociales

Nuno Filipe Paulino Arroteia[1]

[1] Bradford School of Management, Bradford University, United Kingdom

n.arroteia@bradford.ac.uk

ABSTRACT. The limitations of traditional resume-based employability assessment methods have fuelled research into more dynamic approaches. This paper suggests a conceptual framework for initiating the exploration of social media for soft skills recognition (SMSR), a novel approach that leverages social media data to assess skills. SMSR offers advantages over traditional methods by capturing authentic, diverse, timely, and contextual data that reflects an individual's soft skills based on their social media behaviours. By analysing online interactions, content creation, and social network engagement, SMSR has the potential to reveal a wider range of soft skills, including communication, teamwork, and creative abilities.
SMSR holds promise for revolutionising the job search process for employers and job seekers, streamlining recruitment and offering a more democratic approach to skills recognition.

RESUMEN. Las limitaciones de los métodos tradicionales de evaluación de la empleabilidad basados en currículos han impulsado la investigación hacia enfoques más dinámicos. Este artículo explora el potencial del reconocimiento de habilidades a partir de las redes sociales, un enfoque novedoso que aprovecha la riqueza de los datos de las redes sociales para evaluar habilidades. Esta perspectiva ofrece ventajas sobre los métodos tradicionales al capturar datos auténticos, diversos, oportunos y contextualmente ricos que reflejan las habilidades de un individuo en un entorno real. Al analizar interacciones en línea, la creación de contenido y el compromiso en redes sociales, tiene el potencial de revelar una gama más amplia de habilidades, incluyendo comunicación, trabajo en equipo y habilidades creativas.
Esta investigación contribuye al campo al ofrecer una solución a las limitaciones de los métodos tradicionales que a menudo pasan por alto las habilidades transferibles y no logran capturar los matices de la aplicación de habilidades. Además, esta perspectiva promete revolucionar el proceso de búsqueda de empleo tanto para empleadores como para buscadores de empleo, agilizando el reclutamiento y ofreciendo un enfoque más democrático para el reconocimiento de habilidades.

1. Introduction

The traditional resume, a cornerstone of job applications for decades, faces increasing scrutiny for its static nature. It struggles to capture the dynamism of an individual's soft skill set, often presenting a snapshot of past experiences rather than a reflection of current capabilities. This limitation has fuelled a growing body of research in employability assessment - particularly concerned with the employability of students from Higher Education - seeking more nuanced and dynamic methods to identify and showcase relevant soft skills.

In soft skills recognition, existing research explores various avenues, each with its limitations. Self-reported data, gathered through questionnaires or skills inventories, offers insights into an individual's perceived competencies but is often subjective and prone to bias. Individuals may overestimate or underestimate their abilities, leading to inaccurate representations of their skills. Standardized tests provide objective measures of skills but lack real-world context and may not accurately reflect an individual's ability to apply these skills in practical situations (Andrade, 2019). These tests can be limited in scope and may fail to capture the full range of an individual's capabilities, particularly those that are more nuanced or context-dependent.

Additionally, ePortfolio, project-based assessments and mentorship have emerged as a comprehensive tool for skills recognition. Furthermore, the use of micro-credentials and digital badges represents a promising approach to skills development and recognition. However, the proliferation of micro-credentials and digital badges can lead to challenges in standardization and credibility. Employers may find it difficult to assess the true value and rigour of different micro-credentials, and there is a risk that these badges may not be universally recognized or trusted.

Therefore, a gap persists in identifying alternative ways that allow the identification of soft skills whilst reducing the biases and limitations of prevailing methods. In this regard, social media platforms are particularly valuable for skills recognition because they capture real-time, authentic expressions of an individual's behaviours, and potentially own abilities and interests. Unlike traditional self-assessment methods, which rely on individuals' perceptions of their skills, social media provides a continuous stream of data that reflects actual behaviour and engagement. These platforms offer a wealth of information about individuals, including their online interactions, content creation, and social network engagement.

This digital exhaust (Sheng et al., 2023) presents a unique opportunity to automatically recognize soft skills beyond self-reported claims or standardized test scores. This includes contributions to discussions, problem-solving in collaborative environments, and the creation and sharing of content, all of which can provide insights into an individual's communication, teamwork, and creative skills (Bjowmick and Madhu, 2020; Celik et al., 2021; Tsvetkova et al., 2021).

Moreover, social media data is diverse and multifaceted, encompassing various forms of media such as text, images, videos, and interactive content. Compared to other sources or methods, social media data is also more dynamic and current, capturing the evolution of skills over time. Additionally, social media platforms can provide context and social proof that enhance the credibility of skills recognition. Engagement metrics such as likes, shares, comments, and endorsements can serve as indicators of an individual's impact and influence within their network, offering a form of peer validation that is absent in self-reported data or standardized tests. Hence, allowing for a more holistic assessment of skills (Hosain et al., 2023).

By integrating the analysis of social media data into employability assessment, we can address the limitations of traditional methods and create a more comprehensive and dynamic system for skills development and recognition. This approach leverages the authenticity, diversity, timeliness, and context of social media, offering a more accurate and nuanced understanding of an individual's capabilities.

This paper offers a conceptual framework to study the potential of using social media data for soft skills recognition - Social Media Skills Recognition (SMSR). SMSR offers advantages over traditional methods by

capturing authentic, diverse, timely, and contextually rich data that reflects an individual's skills in a real-world setting. By analyzing online interactions, content creation, and social network engagement, SMSR has the potential to reveal a wider range of skills, including communication, teamwork, and creative abilities.

Research in this area holds significant value for several reasons. Firstly, it addresses the limitations of traditional methods that focus on past experiences and qualifications, potentially overlooking transferable skills gained through personal projects or volunteer work. Standardized tests, while offering objectivity, may not capture the nuances of skill application in real-world situations. Skills recognition based on social media data offers the potential for a more comprehensive and dynamic assessment of an individual's skill set.

Secondly, this approach could revolutionize the job search process for employers and job seekers. Employers seeking specific skill sets could leverage automated systems to identify candidates with the right qualifications, streamlining the recruitment process. Job seekers, by harnessing the power of social media to showcase their skills, could gain a competitive edge in the job market.

Thirdly, this research has the potential to democratize skills recognition. Traditional methods often rely on formal education or standardized tests, which can create barriers for individuals from disadvantaged backgrounds. By leveraging social media data, which is often readily available regardless of educational background, skills recognition could create a more level playing field for job seekers.

2. Literature review

2.1. The Skills Gap: Education vs. Employability

A significant volume of research explores the relationship between skills acquired in higher education and employability. Studies by Hinchliffe and Jolly (2011) highlight the importance of both subject-specific knowledge and soft skills for graduate success. However, research also points towards a potential mismatch between soft skills and what employers demand (Succi et al, 2020). Employers often emphasize strong soft skills like communication, collaboration, and adaptability, alongside relevant technical skills. While universities strive to integrate these skills into curriculum design, the effectiveness of this integration remains a topic of debate (Tomlinson, 2012, 2017; Anderson & Tomlinson, 2021).

Despite extensive research, several gaps remain in our understanding of skills acquisition and employability (Ng et al., 2021). Traditional methods like resumes and standardized tests often cannot capture the full spectrum of an individual's skill set. They may overlook skills developed outside formal education, such as through online learning platforms, personal projects, or volunteering. Resumes present a snapshot of past achievements, neglecting to showcase skills continuously developed through online activities or ongoing professional development. Existing research primarily focuses on skills acquired in formal education, with limited exploration of skills development in informal contexts. Moreover, many skills assessment methods rely on self-reported data, which are susceptible to over- or underestimation of abilities.

Additionally, ePortfolios have emerged as a comprehensive tool for skills recognition (Slade, 2020). An ePortfolio is a digital collection of artefacts, including documents, images, and multimedia, that showcase an individual's skills, experiences, and achievements. It allows individuals to present a curated and reflective narrative of their learning journey and professional development, offering employers a detailed insight into their competencies and capabilities.

Another innovative approach is the use of project-based assessments (Nguyen, 2021), where individuals demonstrate their skills through the completion of specific projects or tasks. This method provides tangible evidence of an individual's ability to apply their skills in real-world scenarios. Employers can evaluate these projects to gauge the applicant's problem-solving abilities, creativity, and technical proficiency.

Mentorship and peer reviews also play a significant role in skills recognition (Lorenzetti et al., 2020). Through structured mentorship programs, individuals receive feedback and validation of their skills from experienced professionals. Peer reviews, on the other hand, involve colleagues and peers assessing an individual's skills and contributions, adding a layer of credibility and community endorsement.

The use of micro-credentials and digital badges represents a promising approach to skills development and recognition (Hunt et al., 2020). Micro-credentials reflect focused learning experiences that result in the acquisition of specific skills, and digital badges serve as visual representations of these skills, enabling individuals to electronically showcase their expertise to potential employers, educators, and professional networks. However, the proliferation of micro-credentials can lead to challenges in standardization and credibility. Employers may find it difficult to assess the true value and rigour of different micro-credentials, and there is a risk that these badges may not be universally recognized or trusted.

Social media platforms are increasingly valuable for skills recognition, as they capture real-time, authentic expressions of an individual's abilities and interests. Unlike traditional self-assessment methods, which rely on individuals' perceptions of their skills, social media provides a continuous stream of data that reflects actual behaviour and engagement. This includes contributions to discussions, problem-solving in collaborative environments, and the creation and sharing of content, all of which can provide rich insights into an individual's communication, teamwork, and creative skills. The research underscores the opportunity to use of data available on social media, which includes text, images, videos, and interactive content, allowing for a more holistic assessment of skills. For example, LinkedIn profiles can highlight professional achievements and endorsements, providing a form of peer validation that enhances the credibility of skills recognition.

2.2. Social Media Skill Assessment in the Digital Age

Social media's pervasive influence has transformed communication, interaction, and professional landscapes. Traditional skill assessment methods, while valuable, offer a static picture. This review explores the burgeoning field of social media skill assessment, analysing its potential and limitations in evaluating candidates for the modern workplace. The vast amount of data readily available on social media platforms presents a unique opportunity to address these limitations. These platforms offer a wealth of information about individuals, including their online interactions, content creation, and social network engagement.

Several studies advocate for social media data as a valuable tool for uncovering skill sets. Van Den Beemt et al. (2020) suggest analysing online communication to assess skills like written communication, problem-solving, and teamwork. They suggest that the quality and structure of online content, along with engagement metrics, reveal clues regarding these abilities. Furthermore, research delves into assessing critical thinking through online discussions and debates. Triyanto et al. (2022) and Gigerenzer (2020) propose that social media interactions offer a dynamic platform for evaluating critical thinking beyond traditional tests.

Social media data allows delving into soft skills crucial for workplace success such as analysing online communication style to assess emotional intelligence and conflict resolution skills. Sentiment analysis techniques, as explored by Nemes and Kiss (2021) and Xu et al. (2022) can reveal an individual's ability to manage emotions constructively. Adaptability, a critical skill in the ever-evolving digital landscape, can also be gleaned from social media data (Liu, 2022).

Examining network analysis provides further insights. Ansari and Khan (2020) explore how an individual's online connections within project teams or forums can reveal collaboration style and preferred roles. Additionally, examining online communities with leadership roles (moderators) allows for analysis of leadership style, as explored by Heavy et al., 2020). Initiating discussions, guiding conversations, and inspiring others through online content become potential indicators.

2.3. Social Media Platforms

Social media platforms have become an undeniable force in the modern world, transforming communication and interaction across personal and professional spheres. The next review explores the most popular platforms, their core functionalities, and the types of interactions they facilitate (Aichner et al., 2021).

- LinkedIn: Focus on professional networking, allowing users to share resumes, connect with colleagues, and participate in industry discussions.
- Twitter (currently branded as X): A microblogging platform where users share short text messages ("tweets") with the world or specific followers. Interactions include "retweets," "likes," and mentions, encouraging quick bursts of information and public discussions.
- Facebook: A dominant platform known for its comprehensive features. Users can share personal updates, photos, and videos, and participate in discussions through groups and forums. Facebook fosters connections through "likes," comments, and private messaging, allowing for both broadcast content and one-on-one interactions.
- Reddit: A forum-based platform where users share content and participate in discussions on specific topics. Upvotes and downvotes determine content visibility, creating a unique interaction dynamic.
- Instagram: Focused on visual content, Instagram allows users to share photos and short videos with filters and editing tools. User interaction revolves around "likes," comments, and direct messages, with stories offering a more ephemeral mode of sharing.
- YouTube: Primarily a video-sharing platform, YouTube enables users to upload, view, and comment on video content across various genres. Creators can build communities through subscriptions and engage with viewers through comments and live streams, fostering a dynamic interaction model.

2.4. Theoretical Foundations for Social Media Skills Recognition

In the quest for effective Social Media Skills Recognition (SMSR), the integration of theoretical lenses from various academic disciplines is paramount. Each theoretical perspective offers unique insights that enrich our understanding of how individuals demonstrate and develop skills in the digital realm.

Digital Communication (Ha, 2010; Belonovskaya et al., 2020; Sklar, 2021) serves as a cornerstone for understanding the dynamics of online interactions. In today's digital age, where social media platforms serve as primary channels for communication, this theoretical lens provides invaluable insights into the nuances of digital discourse. By analysing digital communication patterns, we unravel the intricacies of how individuals convey ideas, collaborate, and engage with diverse audiences. This understanding is pivotal for discerning the subtleties of communication skills demonstrated on social media platforms, thereby enhancing the accuracy of SMSR assessments.

Sociocultural Theory emphasizes the social nature of learning and cognition (Vygotsky, 2012; Enciso, 2020). It underscores the profound impact of social interactions and cultural contexts on skill acquisition and development. When applied to SMSR, this theoretical framework sheds light on the collaborative nature of online communities and the role they play in shaping individuals' competencies. By recognizing the significance of peer-to-peer learning and community engagement on social media platforms, we gain deeper insights into the collaborative and interpersonal skills exhibited by individuals. This sociocultural lens enriches SMSR by contextualizing skill demonstration within the dynamic social fabric of online communities.

Cognitive Psychology offers invaluable perspectives on the cognitive processes underpinning human behaviour and learning (Eysenck & Keane, 2020; Solso et al., 2005). By delving into the mechanisms of observation, imitation, and cognitive adaptation, this theoretical lens unveils the intricate workings of skill acquisition in digital environments. Understanding how individuals learn from others, adapt to new challenges, and exhibit problem-solving skills online is crucial for accurate SMSR assessments. By leveraging insights from behavioural and cognitive psychology, we can decipher the underlying cognitive processes behind skill demonstration on social media platforms, thereby enhancing the validity of SMSR evaluations.

Educational Theories of Assessment provide a structured framework for evaluating competencies in authentic contexts (Gaser et al., 2001; Gipps, 2011, Yorke, 2003). By emphasizing the importance of ongoing feedback, formative assessment, and real-world applicability, these theories align closely with the goals of SMSR. By adopting principles of authentic assessment, SMSR ensures that skill evaluations are grounded in the natural contexts of individuals' online interactions. This approach not only enhances the relevance and authenticity of skill assessments but also fosters continuous learning and skill development in digital environments.

Drawing upon the insights gleaned from these theoretical perspectives, we propose a holistic framework for how to analyse individuals' social media profiles and activities to create a comprehensive map of their skills and competencies in the digital realm. The Social Media Skills Recognition (SMSR) framework encompasses:

• Digital Communication Analysis: Utilizing digital communication theory to analyse online interactions, content creation, and engagement on social media platforms to discern their communication skills. Look for patterns in how they convey ideas, collaborate with others, and engage with diverse audiences. This can involve examining the types of content they share, the language they use, and their level of engagement with others' posts.
• Sociocultural Contextualization: Contextualizing skill demonstration within the sociocultural dynamics of online communities, as elucidated by sociocultural theory. Look for evidence of peer-to-peer learning, community engagement, and cultural influences on skills development. This can involve assessing the diversity of an individual's social networks, the nature of their interactions within these networks, and any shared values or norms that may shape their competencies.
• Cognitive Profiling: Leveraging insights from cognitive psychology to profile individuals' cognitive processes and problem-solving abilities exhibited online. Look for evidence of observation, imitation, and cognitive adaptation in an individual's interactions and activities on social media platforms. This can involve analysing the complexity of their contributions, their ability to adapt to new challenges, and their problem-solving approaches in various contexts.
• Authentic Assessment: Applying principles of educational assessment to ensure that skill evaluations are authentic, relevant, and grounded in real-world contexts. Look for evidence of individuals' skills being applied in authentic situations on social media platforms. This can involve assessing the relevance of their contributions, the impact of their actions, and the consistency of their skills demonstration over time.

By integrating these components, our framework for SMSR offers a robust and comprehensive approach to recognizing and assessing skills demonstrated on social media platforms. This interdisciplinary framework not only enhances the accuracy and validity of skill assessments but also provides valuable insights into individuals' digital competencies and capabilities.

3. Methods

This research employed a multifaceted approach to capture and analyse data from social media platforms, integrating both a review of extant literature and direct observations. The methodology can be broken down into two primary phases: literature review and data collection through social media navigation and profile analysis.

The initial phase involved a comprehensive review of existing literature concerning the functions and roles of various social media platforms. This review aimed to establish a theoretical foundation for understanding how different platforms facilitate skill demonstration and development. Key sources included scholarly articles, industry reports, and previous research studies that explored digital communication, sociocultural dynamics, cognitive processes, and educational assessments in the context of social media.

The second phase of the methodology involved data collection through the navigation of the functions made available for users in a social media platform, through an individual profile analysis. This phase was

conducted as follows:

> Profile Selection and Analysis: The researcher has used his own profile on social media networks which he has created as a free account, with the features most commonly available to the general public. This approach ensured that observations were based on typical user experiences and functionalities.
> Platform Navigation and Observation: The researcher navigated through various social media platforms, including LinkedIn, Twitter, Facebook, Reddit, Instagram and YouTube, to document their functionalities and features for users. This involved examining how each platform supports user interaction, content creation, and community engagement. Particular attention was paid to the mechanisms through which users communicate, collaborate, and share information using these platforms.
> Data Analysis: The data collected from the literature review and platform analysis were synthesized to identify what actions that users can perform in said platforms that can be mapped against and relevant for soft skills recognition.

This methodological approach ensured a robust and multi-dimensional exploration of social media as a tool for skills recognition, integrating theoretical insights with practical observations to contribute to the development of a novel SMSR framework.

4. Results

Analysing participation in social media groups offers valuable insights into soft skills crucial for the modern workplace. The depth and quality of contributions, the ability to articulate ideas clearly, and the capacity to work effectively with others are all evident in online interactions. Social media interactions offer a rich platform for assessing communication skills. The ability to express oneself clearly, concisely, and persuasively online reflects an individual's written communication skills. Furthermore, the quality of arguments presented in online discussions reveals critical thinking and analytical abilities.

The ability to adapt communication style to different audiences is another crucial soft skill. Studies by Walther and Whitty (2021) explored the concept of hyper-personal communication in online environments, suggesting that individuals can tailor their communication styles for online interactions. Analysing this adaptability in communication across various platforms, such as professional networking sites versus casual social media groups, offers insights into an individual's versatility and ability skills to connect with different audiences. For instance, the ability to utilize concise and professional language on LinkedIn while maintaining a more informal and engaging tone on Twitter demonstrates an individual's awareness of audience expectations and the ability to adapt communication style accordingly.

Social media can also reveal an individual's collaborative skills and capacity for teamwork. Participation in online group projects or discussions highlights an individual's ability to work effectively with others, share ideas, and find consensus. Online environments can foster collaboration in various ways, from brainstorming sessions on dedicated forums to working on group projects within social media platforms that offer collaborative tools. Analysing an individual's contribution within these environments reveals how they approach teamwork, their ability to share knowledge and delegate tasks effectively, and their commitment to working towards common goals. Furthermore, online communities dedicated to specific projects or tasks can be a valuable space to assess collaboration skills. Analysing how individuals contribute within these communities reveals their ability to share knowledge, delegate tasks, and work towards common goals.

Social media interactions can also provide a glimpse into leadership and critical thinking abilities. Individuals who take initiative in online discussions, guide conversations or propose solutions may demonstrate leadership potential. While online leadership styles may differ from traditional workplace settings, the ability to take charge, motivate others, and navigate online discussions effectively suggests an individual's potential to lead and inspire in real-world scenarios.

Similarly, the ability to critically evaluate arguments, identify biases, and engage in constructive online debate reflects critical thinking skills valuable in many professional settings. Analysing how individuals approach online debates, their ability to dissect arguments logically, and their capacity to identify potential biases within online information demonstrate critical thinking skills essential for success in today's information-rich world.

Social media interactions offer a wealth of information beyond the surface-level analysis of posts and comments. Understanding the context and nuances of online interactions is crucial for accurately assessing soft skills. For example, analysing the sentiment and tone of an individual's online communication can reveal their emotional intelligence and ability to manage conflict effectively. Additionally, examining an individual's online network and the types of groups they participate in can provide insights into their professional interests, ability to build relationships, and potential for continuous learning.

By analysing patterns of online communication and engagement over time, we can create a more comprehensive picture of an individual's communication potential. For example, consistent use of clear and concise language across various platforms suggests a strong foundation in written communication. Similarly, engaging in constructive online debates demonstrates an individual's ability to navigate disagreements productively.

Furthermore, social media data can be used alongside traditional assessment methods like interviews and skills tests to provide a more holistic evaluation of an individual's communication skillset. Analysing online communication can help identify potential areas for development and guide targeted training programs.

Table 1 aids in understanding how various online activities can reflect and develop crucial soft skills. By leveraging the diverse actions on these platforms, employers and educators can gain deeper insights into an individual's soft skills.

Platform	User Actions	Soft Skills that can be Mapped
LinkedIn	Posting articles and updates, participating in professional groups, networking, and endorsing skills.	Communication: Clear, concise, and professional language. Collaboration: Engaging in group discussions. Leadership: Leading discussions, and proposing solutions.
Twitter	Tweeting, retweeting, participating in Twitter chats, engaging in debates.	Communication: Concise and persuasive expression. Adaptability: Tailoring messages to diverse audiences. Critical Thinking: Analysing and debating topics.
Facebook	Posting status updates, participating in group discussions, sharing content, and commenting.	Communication: Expressing ideas clearly. Collaboration: Participating in group projects. Adaptability: Managing tone and sentiment. Navigating disagreements.
Reddit	Participating in subreddit discussions, upvoting/downvoting content, and providing detailed responses.	Critical Thinking: Evaluating arguments, identifying biases. Communication: Articulating ideas clearly. Collaboration: Contributing to community knowledge. Leadership: Moderating discussions.
YouTube	Creating and sharing videos, commenting on videos, and participating in live chats.	Communication: Presenting ideas effectively. Producing engaging content. Leadership: Hosting channels, and guiding discussions.
Instagram	Posting photos and stories, commenting, and participating in live sessions.	Communication: Visual communication skills. Leadership: Building and interacting with a follower base. Engaging with followers. Adaptability: Tailoring content for different audiences.

Table 1. Mapping Social Media User's Actions to Soft Skills. Source: Self-made.

Table 2 complements the previous one by giving concrete examples and further clarifying how each activity can be mapped to skills.

Arroteia, N. F. P. (2024). Unveiling the invisible: soft skills recognition from social media. *Company Games & Business Simulation Academic Journal*, 4(1), 69-81. https://doi.org/10.54988/cg.2024.1.1573

Platform	User Actions	Examples	Soft Skills
LinkedIn	Posting articles and updates	Sharing industry insights, writing thought leadership pieces	Communication: Crafting professional and insightful content
	Participating in professional groups	Engaging in discussions about industry trends, offering advice to peers	Collaboration: Contributing to group knowledge
	Networking	Sending connection requests, commenting on posts, participating in networking events	Collaboration: Building and maintaining professional relationships
	Endorsing skills	Endorsing colleagues for skills, writing recommendations	Leadership: Recognizing and validating others' expertise
Twitter	Tweeting	Posting concise industry updates, sharing opinions on current events	Communication: Expressing ideas succinctly and persuasively
	Retweeting	Sharing valuable content from others, adding personal insights	Collaboration: Amplifying others' voices
	Participating in Twitter chats	Engaging in structured discussions on specific topics	Adaptability: Responding dynamically in real-time conversations
	Engaging in debates	Discussing and debating current issues	Critical Thinking: Analysing and presenting arguments
Facebook	Posting status updates	Sharing personal and professional milestones, thoughts on relevant topics	Communication: Expressing ideas clearly and engagingly
	Participating in group discussions	Contributing to community projects, offering support or advice in groups	Collaboration: Working effectively in a team
	Sharing content	Posting articles, videos, and other resources	Communication: Curating and sharing valuable content
	Commenting	Providing feedback, engaging in discussions	Adaptability: Managing tone and sentiment in interactions
Reddit	Participating in subreddit discussions	Writing detailed responses to questions, contributing to ongoing debates	Critical Thinking: Evaluating and analysing arguments
	Upvoting/downvoting content	Voting on the quality and relevance of posts	Leadership: Influencing community standards
	Providing detailed responses	Answering questions with thorough explanations and evidence	Communication: Clearly articulating complex ideas
YouTube	Creating and sharing videos	Producing tutorials, vlogs, or educational content	Communication: Presenting ideas effectively in a visual format
	Commenting on videos	Providing constructive feedback, engaging with viewers' questions	Adaptability: Managing interactions and feedback
	Participating in live chats	Interacting with viewers in real time, answering questions during live streams	Adaptability: Responding dynamically in real-time
Instagram	Posting photos and stories	Sharing visually appealing content, creating narratives through stories	Communication: Visual communication skills
	Commenting	Engaging with followers, providing feedback	Adaptability: Engaging empathetically with others
	Participating in live sessions	Hosting live Q&A sessions, tutorials, or interactive events	Adaptability: Engaging with a live audience

Table 2. Detailed Mapping of Social Media Actions to Soft Skills. Source: Self-made.

4.1. Emerging Considerations in Social Media Skill Assessment

The burgeoning field of social media skill assessment presents exciting possibilities for evaluating candidates in the digital age. However, alongside its potential, several emerging considerations demand attention to ensure responsible and effective implementation.

Advancements in Artificial Intelligence (AI) and Machine Learning (ML) offer a powerful lens for analysing social media data and identifying skill markers. AI can move beyond basic sentiment analysis to delve into advanced text analysis. By identifying writing styles, industry-specific knowledge, and nuances of persuasion and leadership within online content, AI can provide a more comprehensive picture of an individual's communication and leadership potential. Furthermore, AI-powered visual analysis can assess creativity, storytelling ability, and visual communication skills crucial in design or marketing fields. Additionally, ML algorithms hold promise for enhancing network analysis. By analysing online connections with greater depth, these algorithms could potentially identify an individual's influence within online communities, collaboration patterns, and leadership roles within networks.

However, leveraging AI and ML for social media skill assessment necessitates careful consideration. Bias in training data can lead to biased assessments. Mitigating this risk requires employing diverse datasets and adhering to ethical development practices. Furthermore, ensuring transparency in how AI identifies skill markers and developing methods for candidates to understand their assessment results are vital aspects for fostering trust in the process.

Gamification presents a novel approach to making social media skill assessments more engaging and interactive. Skill-based challenges designed for various platforms can assess specific job-relevant skills. Analysing performance in these challenges can provide valuable insights into an individual's capabilities. Awarding points and badges for completing different assessment tasks can foster a sense of accomplishment and encourage participation. Additionally, implementing leaderboards that showcase top performers in different skill areas can create a healthy competitive environment and motivate candidates.

Empowering candidates with control over their data can address privacy concerns and create a fairer assessment process. Frameworks that allow candidates to curate a specific profile showcasing their most relevant online content for assessment can provide a more targeted view of their skill set. Additionally, offering clear options for candidates to choose which data points they are comfortable sharing for assessment fosters trust and transparency.

5. Conclusions

The digital revolution has fundamentally reshaped the way we live, work, and communicate. Social media platforms, once seen primarily as tools for socializing and entertainment, have become ubiquitous, leaving a digital footprint of our thoughts, actions, and interactions. This presents a novel opportunity for the professional sphere: leveraging social media data for soft skills assessment. While traditional methods like resumes and interviews remain valuable, they offer a limited snapshot of an individual's capabilities. Social media, on the other hand, provides a dynamic window into an individual's communication, collaboration, leadership, adaptability, and critical thinking skills – all crucial attributes for success in the modern workplace.

This paper offers a conceptual framework to study the potential of using social media data for soft skills recognition - Social Media Skills Recognition (SMSR). SMSR offers advantages over traditional methods by capturing authentic, diverse, timely, and contextually rich data that reflects an individual's skills in a real-world setting. By analyzing online interactions, content creation, and social network engagement, SMSR has the potential to reveal a wider range of skills, including communication, teamwork, and creative abilities.

SMSR reveals several promising possibilities. By examining online content, and engagement metrics, valuable insights can be gleaned about an individual's written communication, problem-solving, and teamwork

Arroteia, N. F. P. (2024). Unveiling the invisible: soft skills recognition from social media. *Company Games & Business Simulation Academic Journal*, 4(1), 69-81. https://doi.org/10.54988/cg.2024.1.1573

skills. Social media data extends beyond individual profiles, offering insights into collaboration and leadership potential. Analysing network connections within project teams or forums can reveal an individual's collaboration style and preferred roles (Visser et al., 2019). Furthermore, examining online communities with leadership roles allows for analysis of leadership style by looking at initiating discussions, guiding conversations, and inspiring others through online content.

Despite its potential, social media skill assessment is not without limitations. While social media interactions offer valuable insights into communication skills, it's important to acknowledge the limitations of this approach. Online behaviour may not always translate directly to workplace skills. Social media data may not be a definitive measure of an individual's skill set. However, it can provide valuable supplementary insights when integrated with traditional assessment methods, creating a more holistic evaluation process (Maniak et al., 2018).

Individuals might portray a more confident or assertive persona online than in face-to-face interactions. Additionally, a significant portion of valuable data on social media platforms is either restricted or not publicly accessible. Privacy settings and user preferences can limit the visibility of certain posts, comments, and interactions, which means that the data collected might not provide a complete picture of an individual's skills and behaviours.

Another limitation is the ethical and legal concerns surrounding the access and use of private data. Gaining access to private or restricted data without explicit consent from users is not only unethical but also often illegal. This restricts researchers and employers to the data that individuals have chosen to make public, which might not include critical interactions or contributions that reflect their true capabilities.

Furthermore, social media platforms vary in their policies and mechanisms for data access. While some platforms may offer APIs for data extraction, the extent and type of data accessible can differ significantly, impacting the comprehensiveness of the skills assessment. Additionally, the dynamic nature of social media means that content can be deleted or altered, which poses a challenge for consistent data collection and analysis.

These limitations highlight the need for a cautious and balanced approach when using social media data for skills recognition. While it provides a rich source of information, it should be complemented with other methods of assessment to ensure a holistic and accurate evaluation of an individual's skills.

The future of social media skill assessment is ripe with opportunities for further research. One exciting avenue lies in the integration of Artificial Intelligence (AI) and Machine Learning (ML) advancements. With AI, sophisticated techniques for analysing social media data and identifying skill markers can be developed. al considerations.

In conclusion, SMSR holds immense potential for talent identification in the digital age. While limitations exist, the ability to glean insights into communication, collaboration, leadership, adaptability, and critical thinking skills through social media data analysis presents a valuable tool for employers seeking well-rounded candidates.

Funding

Arroteia, N. F. P. (2024). Unveiling the invisible: soft skills recognition from social media. *Company Games & Business Simulation Academic Journal*, 4(1), 69-81. https://doi.org/10.54988/cg.2024.1.1573

References

Aichner, T.; Grünfelder, M.; Maurer, O.; Jegeni, D. (2021). Twenty-five years of social media: a review of social media applications and definitions from 1994 to 2019. Cyberpsychology, behaviour, and social networking, 24(4), 215-222.

Anderson, V.; Tomlinson, M. (2021). Signaling standout graduate employability: The employer perspective. Human Resource Management Journal, 31(3), 675-693.

Andrade, H. L. (2019). A critical review of research on student self-assessment. Frontiers in education, 4, 87.

Ansari, J. A. N.; Khan, N. A. (2020). Exploring the role of social media in collaborative learning the new domain of learning. Smart Learning Environments, 7(1), 9.

Bayt Hiam, F.; Al-Khalifa, H. S.; Jaradat, R.; Shaalan, K. (2017). Assessing employability skills through social media: A conceptual framework. Journal of Information Technology Education: Research, 16(2), 119-138.

Belonovskaya, I. D.; Matvievskaya, E. G.; Saitbaeva, E. R.; Ksenofontova, A. N.; Usmanov, S. M.; Zatsepina, M. B.; Bakshaeva, E. V. (2020). Digital communication in educational process: development trends and new opportunities. Online Journal of Communication and Media Technologies, 10(2), e202008.

Bhowmick, T.; Madhu, S. (2020). Social media and its influence on social skills. International Research Journal of Modernization in Engineering Technology and Science, 2, 1068-1075.

Carter, S. (2021). ePortfolios as a platform for evidencing employability and building professional identity: A literature review. International Journal of Work-Integrated Learning, 22(4), 463-474.

Celik, I.; Muukkonen, H.; Dogan, S. (2021). A model for understanding new media literacy: Epistemological beliefs and social media use. Library & Information Science Research, 43(4), 101125.

Clarke, M. (2018). Rethinking graduate employability: The role of capital, individual attributes and context. Studies in higher education, 43(11), 1923-1937.

Enciso, P. (2020). Reframing history in sociocultural theories: Toward an expansive vision. In Reframing sociocultural research on literacy (pp. 49-74). Routledge.

Eysenck, M. W.; Keane, M. T. (2020). Cognitive psychology: A student's handbook. Psychology press.

Gigerenzer, G. (2020). When all is just a click away: Is critical thinking obsolete in the digital age?. In Critical thinking in psychology (pp. 197-223). Cambridge University Press.

Gipps, C. (2011). Beyond Testing (Classic Edition): Towards a theory of educational assessment. Routledge.

Glaser, R.; Chudowsky, N.; Pellegrino, J. W. (Eds.) (2001). Knowing what students know: The science and design of educational assessment. National Academies Press.

Ha, T. T. (2010). Theory and design of digital communication systems. Cambridge University Press.

Heavey, C.; Simsek, Z.; Kyprianou, C.; Risius, M. (2020). How do strategic leaders engage with social media? A theoretical framework for research and practice. Strategic Management Journal, 41(8), 1490-1527.

Hinchliffe, G. W.; Jolly, A. (2011). Graduate identity and employability. British Educational Research Journal, 37(4), 563-584.

Hosain, M. S.; Mamun, A. M. A. (2023). The roles of LinkedIn-based skill endorsements and LinkedIn-based hiring recommendations on hiring preferences: evidence from Bangladeshi employers. Management Matters, 20(2), 169-184.

Hunt, T.; Carter, R.; Zhang, L.; Yang, S. (2020). Micro-credentials: The potential of personalized professional development. Development and Learning in Organizations: An International Journal, 34(2), 33-35.

Liu, G. (2022). Research on the relationship between students' learning adaptability and learning satisfaction under the mobile media environment. International Journal of Emerging Technologies in Learning (iJET), 17(2), 43-58.

Lorenzetti, D. L.; Nowell, L.; Jacobsen, M.; Lorenzetti, L.; Clancy, T.; Freeman, G.; Oddone Paolucci, E. (2020). The role of peer mentors in promoting knowledge and skills development in graduate education. Education Research International, 2020(1), 8822289.

Maina, M. F.; Ortiz, L. G.; Mancini, F.; Martinez Melo, M. (2022). A micro-credentialing methodology for improved recognition of HE employability skills. International Journal of Educational Technology in Higher Education, 19(1), 10.

Nemes, L.; Kiss, A. (2021). Social media sentiment analysis based on COVID-19. Journal of Information and Telecommunication, 5(1), 1-15.

Ng, P. M. L.; Chan, J. K. Y.; Wut, T. M.; Lo, M. F.; Szeto, I. (2021). What makes better career opportunities for young graduates? Examining acquired employability skills in higher education institutions. Education+ Training, 63(6), 852-871.

Nguyen, H. T. (2021). Project-Based Assessment in Teaching Intercultural Communication Competence for Foreign Language Students in Higher Education: A Case Study. European Journal of Educational Research, 10(2), 933-944.

Sheng, N.; Yang, C.; Han, L.; Jou, M. (2023). Too much overload and concerns: Antecedents of social media fatigue and the mediating role of emotional exhaustion. Computers in Human Behavior, 139(2023), 107500.

Sklar, B. (2021). Digital communications: fundamentals and applications. Pearson.

Slade, C.; Downer, T. (2020). Students' conceptual understanding and attitudes towards technology and user experience before and after use of an ePortfolio. Journal of Computing in Higher Education, 32(3), 529-552.

Solso, R. L.; Kimberly MacLin, M.; MacLin, O. H. (2005). Cognitive psychology. Pearson Education New Zealand.

Succi, C.; Canovi, M. (2020). Soft skills to enhance graduate employability: comparing students and employers' perceptions. Studies in higher education, 45(9), 1834-1847.

Tomlinson, M. (2017). Forms of graduate capital and their relationship to graduate employability. Education+ Training, 59(4), 338-352.

Tomlinson, M. (2012). Graduate employability: A review of conceptual and empirical themes. Higher education policy, 25, 407-431.

Triyanto, S. A.; Wahidin, W.; Hartania, N.; Solihat, A.; Sutrisno, S. (2022). Blended problem-based learning with integrated social media-based learning media in improving students' critical thinking skills. Biosfer: Jurnal Pendidikan Biologi, 15(2), 242-254.

Tsvetkova, M.; Ushatikova, I.; Antonova, N.; Salimova, S.; Degtyarevskaya, T. (2021). The Use of Social Media for the Development of Digital Literacy of Students: From Adequate Use to Cognition Tools. International journal of emerging technologies in learning, 16(2).

Van Den Beemt, A.; Thurlings, M.; Willems, M. (2020). Towards an understanding of social media use in the classroom: a literature review. Technology, Pedagogy and Education, 29(1), 35-55.

Vygotsky, L. S. (2012). Thought and language. MIT press.

Walther, J. B.; Whitty, M. T. (2021). Language, psychology, and new media: The hyperpersonal model of mediated communication at twenty-five years. Journal of Language and Social Psychology, 40(1), 120-135.

Xu, Q. A.; Chang, V.; Jayne, C. (2022). A systematic review of social media-based sentiment analysis: Emerging trends and challenges. Decision Analytics Journal, 3, 100073.

Yorke, M. (2003). Formative assessment in higher education: Moves towards theory and the enhancement of pedagogic practice. Higher education, 45, 477-501.