

Reflective practice ePortfolios: a digital teaching tool to enhance third year BA culinary and gastronomic science students' professional learning experiences

Clare Gilsenan¹, Marie English²

¹Galway International Hotel School, Atlantic Technological University, Galway, Ireland.

²School of Business, Atlantic Technological University, Galway, Ireland.

Abstract

The aim of this research was to explore the use of reflective practice eportfolios as a digital tool to enhance BA Culinary and Gastronomic Science students' professional learning experiences. A deductive approach was applied to the data where the participants reflective practice entries were coded using Braun and Clarke's framework for thematic analysis. In line with Vygotsky's (1978) social constructivist theory, the results depicted the participants were able to learn through social interactions with their lecturer and peers, who assisted with scaffolding knowledge and skills, until the participants were more confident in their learning. By using the reflective practice eportfolio meant that the participants were able to track their improvement and growth related to their reflection process. The results are far reaching in the context of culinary arts education and offer significant insights into embedding a reflective practice eportfolio into the culinary curriculum.

Keywords: *Social constructivism; reflective practice; eportfolios; culinary arts education; professionalism.*

1. Introduction

Professionalism is critically important for the culinary industry, however the difficulty with attracting and retaining highly professional personnel makes it problematic to implement. Higher education is expected to prepare graduates for the professional workforce, yet Ryan (2018) argues that higher education institutions are failing to adequately prepare graduates for employment, particularly, in professional (soft) skill development. In a study by Lazíková, Takáč, Rumanovská, Michalička, and Palko (2022) a significant gap between the skills that graduates acquire and those that employers require was reported.

Reflective practice has been defined as “a process for the learner to integrate the understanding gained in one’s experience in order to enable the better choices or actions in the future” (Rogers, 2001, p.41). Heymann et al. (2022) insists that central to becoming a professional is the ability to be able to reflect. Embedding reflective practice into culinary arts may enable the student to think about and reflect upon their studies, identity, and futures, thus integrating theory into practice, to the point that students recognise the theoretical constructs underpinning professional development in a culinary arts context. The Reflective Cycle by Gibbs (1988) has widely influenced the broad field of education. Gibb’s model presents six stages of reflection, from the description of the problem to action planning. It presents a framework for examining experiences. Adie and Tangen (2015) assert such professional skills can be enhanced using self-reflection, and that reflective practice is essential in higher education for effectively preparing graduates for their future professional lives.

According to Abrami and Barrett (2015) the utilisation of reflective practice aligns to social constructivism. Social constructivism is a learning theory developed by educational psychologist Lev Vygotsky. Social constructivism theory contends that a student’s cognitive ability is gained through collaborative social guidance and construction. One of the core constructs of Vygotsky’s theory of social constructivism is the zone of proximal development (ZPD). Vygotsky (1978, p.86) defined ZPD as “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers”. In line with Vygotsky’s (1978) notion of providing instruction within the ZPD, it was expected that scaffolding would decrease over time, as the students’ understanding increased. This research focuses on culinary arts education from a holistic perspective, meaning education is not only a process of transmission, but that students learn knowledge and skills through different pedagogical methods in a social setting. Language also plays a significant role in learning development and how individuals view the world. This means that learning is transmitted via language and interpreted by experiences in a social setting as argued by Vygotsky (1978). Part of the preparation for a career in the food product development sector involves an understanding of sensory analysis. Specific language and

concepts such as olfactory and gustatory senses, chemesthesis, discrimination and hedonic sensory testing are of critical importance in the lexicon of terminology needed by sensory professionals working in the food product development sector. Without an understanding of such a lexicon, the subject has no value or application for the students. Furthermore, Vygotsky (1986, p.148) stated “Scientific concepts develop earlier than spontaneous concepts because they benefit from the systematicity of instruction and cooperation”. This suggests that learning is best accomplished through co-operative instruction between the lecturer and more experienced peers. Thus, assisting a student’s movement through the ZPD from novice to expert with the use of tools such as language-based tools (i.e., ePortfolio) and physical tools such as Compusense.

An eportfolio is a digital tool that has been successfully used to promote employability skills and self-regulated learning in Ireland (Farrell, Buckley, Donaldson, and Farrelly, 2021). A portfolio has been defined “as a collection of documents that provide tangible evidence of the wide range of performances, essential knowledge, critical dispositions and experiences that you possess as a growing professional” (Campbell, Cignetti, Melenzyer, Nettles and Wyman, 2014, p.3). By using a reflective practice eportfolio, the student is afforded the opportunity to document their thoughts and actions, whilst reflecting on the link between what they learn in the classroom and what they do in practice. Through interactions with the lecturer and the students’ peers, the student acquires specific knowledge and skills.

The aim of this research was to explore the usefulness of a reflective practice eportfolio as a digital tool to enhance BA Culinary and Gastronomic Science students’ professional learning experiences. This study also focused on supporting the student in reflective practice, so that the theory they learned in their lectures would be reinforced through the direct application of practice.

2. Methodology

Social constructivism was deemed to be the most suitable research philosophy as the research question and aim aligned with the key principles of the social constructivist paradigm. The choice of this research philosophy allowed for the use of data collection methods that facilitated the achievement of the research objectives to explore perspectives of third year BA Culinary and Gastronomic Science students’ professional learning experiences of using a reflective practice eportfolio. A case study methodology was chosen as the methodological framework for the study. Atlantic Technological University (ATU), in Galway, Ireland was chosen as the research site and third year BA Culinary and Gastronomic Science students, studying the module Introduction to Sensory and Consumer Science were selected as the research participants for this research. The module was chosen as it is used to develop the learners’ knowledge of, and ability to use, sensory science and consumer, preparing the

students for internship in the food product development sector. Eleven BA Culinary and Gastronomic Science students volunteered to take part in the study.

The participants in the study were required to undertake a team sensory analysis report and a reflective diary, of which the outputs were displayed in their eportfolio. Participants submitted three reflections in their eportfolio as specified in the module. The data collection methods for this case study included analysis of the participants' reflective practice entries in their eportfolios using Braun and Clarke's (2022) framework for thematic analysis. This approach allowed the researcher to interpret the participants' learning experiences through the data. Ethical issues in terms of privacy and general data protection regulations (GDPR) were acknowledged. To protect the identities of the eleven participants who had volunteered for the study, pseudo-names were used to identify the participants. In addition, power implications that could have existed between the researcher and the participants were considered.

3. Results and Discussion

This research paper presents selected findings of the thematic analysis of the participants' reflective eportfolio entries. For this research paper, only one of the core themes will be discussed, namely Development of Awareness of Self.

The subthemes that emerged from the core theme of Development of Awareness of Self are depicted in Table 1.

The results highlight eighteen percent of participants in this study mention in their reflective practice eportfolio having learned from their past experiences. Those participants indicate that they were able to reflect on their past experiences of working in teams. They were able to critically appraise what they had experienced, and this suggests that they were able to improve their experience this time around. As asserted by Vygotsky "The child's memory not only makes fragments of the past more available, but also results in a new method of uniting the elements of past experience with the present" (Vygotsky, 1978, p.36).

Table 1. Core theme, sub-themes, and key quotations from participants on their learning experience of the usefulness of a reflective practice eportfolio (n=11)

Core Theme	Sub-Theme	Key Quote
Development of Awareness of Self	Learning from Past Experiences	“In the past, I have been in groups where there was disunity...working with Emma, the work was always equally divided. In addition to this, we communicated frequently during the week (twice minimum) to track our progress and to ensure that any difficulties were resolved quickly.” (Ella) “I have fallen short in the past in terms of third level education.” (Elijah)
	Acknowledging Struggles	“I felt confused when it came to writing the research report as our course had been so practical heavy for the first two years.” (Noah) “I did feel better and confident using Pebble-pad once I contacted my lecturer and they helped me out further.” (Emma).
	Celebrating Successes	“I now have a greater understanding of how to design a digital questionnaire, and move data seamlessly through the Microsoft suite, which in turn improved my digital competences. Additionally, this lent to my problem-solving abilities.” (Ella) “The collaborative work this semester helped me work in a team with another student and allowed a different perspective into my work and helped me think differently.” (Levi)
	Taking Responsibility for Learning Motivation for the Future	“I felt I had to take a leadership role to ensure the project got done in time and everything was correct.” (Charlotte) “It is now a new skill set that I look forward to utilising in the future.” (Emma)

Regarding the theme Acknowledging Struggles, a little under a third of the participants (27%) said they struggled with the academic writing that was expected from them and twenty-seven percent of participants acknowledge having difficulty using the eportfolio software Pebblepad. Culinary arts students often find the theoretical aspects of the curriculum challenging. This can be problematic as students, when on internships, may be working in product development, so knowledge of terms and processes are required. By using Vygotsky’s theory of social constructivism, the lecturer-researcher developed a lexicon of terms appropriate to sensory analysis. The lecturer-researcher instructed and assisted the student so that their movement through the ZPD from novice to expert was supported. It was evident over time that the participants had internalised this new sensory language, which became their internal speech. Vygotsky (1978) highlights the importance of speech for one’s cognitive development and states “Sometimes speech becomes of such vital importance that,

if not permitted to use it, young children cannot accomplish the given task” (Vygotsky, 1978, p. 26).

Ninety-one percent of participants celebrated the successful collaborative relationships they developed with their team, learning new digital skills, specifically relating to the eportfolio digital tool, independently planning, delivering, and analysing the results of sensory testing. This is in line with Vygotsky’s social constructivist approach. The participants demonstrated in-depth knowledge of their market sector and showed they could critically reflect on sensory concepts and theories, thus improving their ability to communicate which would prove important for internships in the product development sector.

By acknowledging the need for self-improvement, the participants were taking responsibility for their own learning and their professional development. Six participants (55%) in this study also provided examples of them taking responsibility for their own and others learning throughout the study. This reflects their moving from novice to expert learner as articulated in Vygotsky’s metaphor of the ZPD. Using reflective practice eportfolios means that the participants would now be able to track their improvement and growth related to their reflection process. This is critically important for the participants of this study to continue using their reflective practice eportfolio as it will improve their learning but may also enable them as graduates to progress quickly in employment in the future. It could be argued that by using the reflective practice eportfolio, the participants were better able to link theory and practice effectively. The participants were able to learn through social interactions with their lecturer and their peers, who assisted with scaffolding the knowledge and skills, until the participants were more confident in their learning. This is consistent with the social constructivist theory. Finally, the findings from the research revealed sixty-four percent of participants believe that self-reflection enabled them to learn from experience and apply that knowledge to future experiences such as being able to effectively design, deliver and analysis the results of consumer sensory panels. Participants communicated how these skills would benefit them in the future. Moreover, the findings of this research concur with Farrell et al. (2021) that it is reasonable to suggest that reflective practice eportfolios should be viewed as an important teaching and learning digital tool in higher education in Ireland.

4. Limitations

This was the BA in Culinary and Gastronomic Science 3rd year students’ first engagement with reflective practice eportfolios and, although the sample size was small, it reflected the class group. It was not the intention to generalise the results to the wider culinary student population, rather to trial a new type of assessment, with a view to embedding it in future years.

5. Conclusions

The findings of this research showed how the participants learned to use language and skills gained from social interactions for sensory analysis through co-operative instruction between the lecturer and peers. The participants' movement through the ZPD from novice to expert was also reflected in the results. By using a reflective practice eportfolio, the participants are afforded the opportunity to document their thoughts and actions, whilst reflecting on the link between what they learn in the classroom and what they do in practice.

6. Implications of this Research, from a Pedagogical Perspective

The implications of this research indicate that the application of reflective practice eportfolios in a culinary arts context may assist students to construct meaning from their theoretical, practical, and individual experiences in a social setting. The learning experience provided by internship for the student is highly significant, hence, the language and skills used in the classroom needs to be mirrored in the food product development industry. By taking a social constructivist approach, the culinary arts lecturer and more experienced peers will help scaffold the knowledge and skills for the student so that their movement through the ZPD from novice to expert will be supported.

References

- Abrami, P., & Barrett, H. (2005). Directions for research and development on electronic portfolios. *Canadian Journal of Learning and Technology /La revue canadienne de l'apprentissage et de la technologie*, 31(3). <https://doi.org/10.21432/T2RK5K>
- Adie, L. & Tangen, D. (2015). "The use of multimodal technologies to enhance reflective writing in teacher education," in *Teaching Reflective Learning in Higher Education*, ed. M. E. Ryan (New York, NY: Springer), 127–138. doi: 10.1007/978-3-319-09271-3_9
- Braun, V. & Clarke, V. (2022). *Thematic analysis: A practical guide*. SAGE.
- Campbell, D., Cignetti, P., Melenyzer, B., Nettles, D. & Wyman, R., Jr. (2010). *How to develop a professional portfolio: A manual for teachers* (5th ed.). Pearson.
- Farrell, O., Buckley, K., Donaldson, D. & Farrelly, T. (2021). Eportfolio in Ireland: A landscape snapshot of the current practice. *Irish Journal of Technology Enhanced Learning*, 6(1) <https://doras.dcu.ie/26539/1/99-Article%20Text-445-1-10-20211212.pdf>
- Gibbs, G. (1988). *Learning by doing: A guide to teaching and learning methods*. Further Education Unit Oxford Polytechnic.
- Heymann, P., Bastiaens, E., Jansen, A., van Rosmalen, P. and Beusaert, S. (2022). A conceptual model of students' reflective practice for the development of employability competences, supported by an online learning platform. *Education and Training*, 64(3), 380-397. <https://www.emerald.com/insight/0040-0912.htm>

- Lazíková, J., Takáč, I., Rumanovská, Ľ., Michalička, T., & Palko, M. (2022). Which Skills Are the Most Absent among University Graduates in the Labour Market? Evidence from Slovakia. *Social Sciences*, 11(10), 438. MDPI AG. Retrieved from <http://dx.doi.org/10.3390/socsci11100438>
- Rogers, R., R. (2001). Reflection in higher education: a concept analysis. *Innovative Higher Education*, 26(1), 37-57.
- Ryan, Ann (2018) *Graduate Employability; Bridging the gap from Higher Education to Employment*. (Master's thesis, Griffith College). <http://go.griffith.ie/id/eprint/179>
- Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge: Harvard University Press.
- Vygotsky, L. S. (1986). *Thought and Language*. Massachusetts: The MIT Press.