

## Validation of Competencies in E-Portfolios: A Qualitative Analysis

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### Article abstract

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## *Validation of Competencies in E-Portfolios: A Qualitative Analysis*

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### **Abstract**

This paper uses the example of an Internet-based advanced studies course to show how the portfolio method, as a competence-based form of examination, can be integrated in a blended learning design. Within the framework of a qualitative analysis of project portfolios, we examined which competencies are documented and how students reflected on their competence development process using portfolios.

**Keywords:** Competence development; competence-based assessment; e-portfolio

### **Introduction**

Along with the Bologna process in Europe came the paradigm shift from input orientation (what shall be learned?) to outcome orientation (what should students be able to do?). This change required a reorganization of examination performances which focus on the competencies that are to be acquired. While the conversion of course organisation has been almost completed, competence-based assessment can be regarded as an “unsolved assignment” within the European context (Stratmann, Preußler, & Kerres, 2009). Reinmann (2007) even refers to a “competence lie” (p. 13). Current examination practice in universities usually consists of a triathlon, in which written examinations, presentations, and research papers compete with each other.

At this stage, the conversion towards competence-based assessment has been realized only insufficiently. Methodological difficulties, which arise when measuring competencies (Erpenbeck & von Rosenstiel, 2003), are one reason for this lack. Weinert (2001) describes competencies as the cognitive abilities and skills to solve problems, which are innate in individuals or can be learned by them. In this sense, competencies involve motivational, volitional (intention-related), and social dispositions and abilities that allow the individual to successfully and responsibly solve problems in various situations. The interweaving of cognition and motivation is a characteristic feature of competent action (Weinert, 1996). A mechanism of competence development can then be expressed by self-directed learning (Knowles, 1975). The latter includes the learner setting goals independently, developing and testing plans and strategies in order to realise these goals, and learning from the resulting experiences. Accordingly, Erpenbeck and von Rosenstiel (2003) define competencies as self-organisational dispositions. Competence is therefore composed of knowledge, experiences, and abilities for the *application and implementation* of knowledge, strategies, abilities, and skills (Zawacki-Richter, Hasebrook, & Muckel, 2009). Similarly, Connell, Sheridan, and Gardner (2003) describe competencies as “realized abilities,” which is exactly to the point. This *performance* in new, unpredictable contexts can be documented in order to make competencies visible and therefore assessable as well. In this context the essential difference between qualification and competence becomes especially visible. Traditionally, qualification documents a performance in an artificial situation, e.g., an examination in which knowledge is tested. However, competent action cannot be measured in such simulated test situations.

One method that is suitable to measure competence is the portfolio – or e-portfolio for the electronic form: “Portfolios...are always a goal driven, organized collection of items (artefacts) that demonstrate a learner's expansion of knowledge and skills over time” (Walti, 2004, p. 157).

In the Internet-based continuing education courses offered by the University of Oldenburg, learning portfolios are embedded in the examination regulations. In this paper, the instructional embedding of portfolios in degree courses and modules will be presented first, using the example of the MBA in Educational Management. Secondly, portfolios from various course modules will be evaluated within the framework of qualitative text analysis. By applying the coding paradigm of grounded theory, we will examine and describe how students reflect on competencies in the portfolios. Thus, Erpenbeck and Heyse’s (1999) competence model provides initial access to the empirical data used in this study. This model divides competencies into four classes: personal competencies, activity-and action-oriented competencies, socio-communicative competencies, and methodological and professional competencies. The “competence explorer” (Heyse & Erpenbeck, 2004) based on this model serves us as an orientation (see Figure 2).

Based on our empirical data, the study investigated how students reflect on their competence development and which competencies are documented in this way.

## **Integrating Portfolios in Internet-Based Degree Courses Using the Example of the University of Oldenburg**

The University of Oldenburg is playing a pioneering role in the development of extra-occupational and continuing-education courses. The first Internet-based, advanced-study bachelor's degree course in business administration was introduced in the summer semester of 2003. In 1999, the university started developing an online Master of Distance Education degree in cooperation with the University of Maryland University College in the United States. At present, the following continuing education degrees are offered:

- Business Administration (BA)
- Business Economics for Top Athletes (BA)
- Master of Education Management (MBA)
- Information Law (LL.M.)
- Master of Distance Education (MDE) in cooperation with the University of Maryland University College (USA)
- Renewable Energy (MSc)
- Innovation Management (MA)

All degrees mentioned above are designed to meet the needs and requirements of working adult learners. They focus on practical and active learning within real projects that students bring in from their own employment contexts and work on in teams. Six programs use a blended learning approach in order to enable maximum spatial and temporal flexibility while establishing direct interaction between students and teachers as well as between students (making social contacts, forming groups, finding subjects, presenting and discussing findings) (Sauter & Sauter, 2002). Figure 1 illustrates the blended learning structure of such a course.



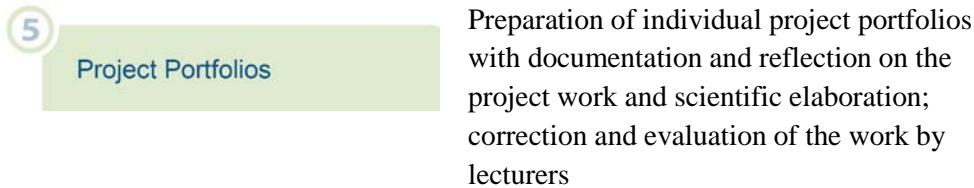


Figure 1. Structure of blended learning courses at UOL in the MBA Educational Management program.

The following remarks refer to the MBA in Education Management program. The focus of interest is the project portfolio, which is created individually by all students upon completion of a course module. According to Baumgartner, Himpf, and Zauchner's framework (2009), this is an individual personal portfolio that includes both product-oriented (summative) and process-oriented (formative) reflections on the learning process.

The guidelines for students and faculty in the MBA in Education Management program explain the function of the portfolio as follows:

The portfolio is a specific collection of material and documents, with the purpose of documenting a specific range of performance over a period of time. Thus, the portfolio serves as a component of self-evaluation and provides participants and outsiders with an overview of personal learning success, goals and results of the projects.

The guidelines also contain information for students on how to structure the portfolio work.

The project portfolio phase follows the second contact phase and consists of two parts:

- demonstration of the project work and of one's own growth in competence, and
- a scientific elaboration on a central question of the project.

Since the examination regulations for the degree course stipulate the project portfolio (learning portfolio) as mandatory coursework, it contributes significantly toward the overall module grade: "The overall grade for the specific course module consists of one third of the evaluation of the presentation of the results while the remaining two thirds derive from the learning portfolio for processing the project assignments" (§13, sentence 9, MBA examination regulations). Lecturers receive an evaluation template they can use when evaluating the presentation of results and the learning portfolio.

Students in the MBA in Educational Management program are on average about 37 years old. Nearly all are employed and hold positions within senior management (e.g., vice-chancellor, executive director, head of department) or positions in middle management (e.g., division manager, faculty executive director, programme manager) in educational and scientific institutions. Thirty to forty percent of the students come from publicly financed or private

education providers. About 10% work in educational policy or administration (e.g., in ministries or accreditation agencies). All MBA students hold a degree (60% have a university degree, 25% have degrees from a university of applied science, and 10% hold doctorates).

## **Methods and Sample**

### **The Competence Model**

With regard to the systematic taxonomy of individual competencies, Erpenbeck and his colleagues (Erpenbeck & Heyse, 1999; Erpenbeck & von Rosenstiel, 2003; Heyse & Erpenbeck, 2004) developed a competence model with which different competence dimensions can be operationalized in order to design “an instrument that takes up little time for measuring competencies and competence developments” (Erpenbeck & Heyse, 2007, p. 24). Competencies are divided into competence types, classes, and groups and are summarised in a competence explorer (see Figure 2). The four competence classes include

1. personal competencies (e.g., the ability to act reflexively and on a self-organised basis, to evaluate oneself, reliability, willingness to learn);
2. activity and action competencies (e.g., flexibility, independence, creativity, initiative);
3. methods and professional competencies (e.g., objectivity, project management);
4. socio-communicative competencies (e.g., team skills, ability to accept criticism).

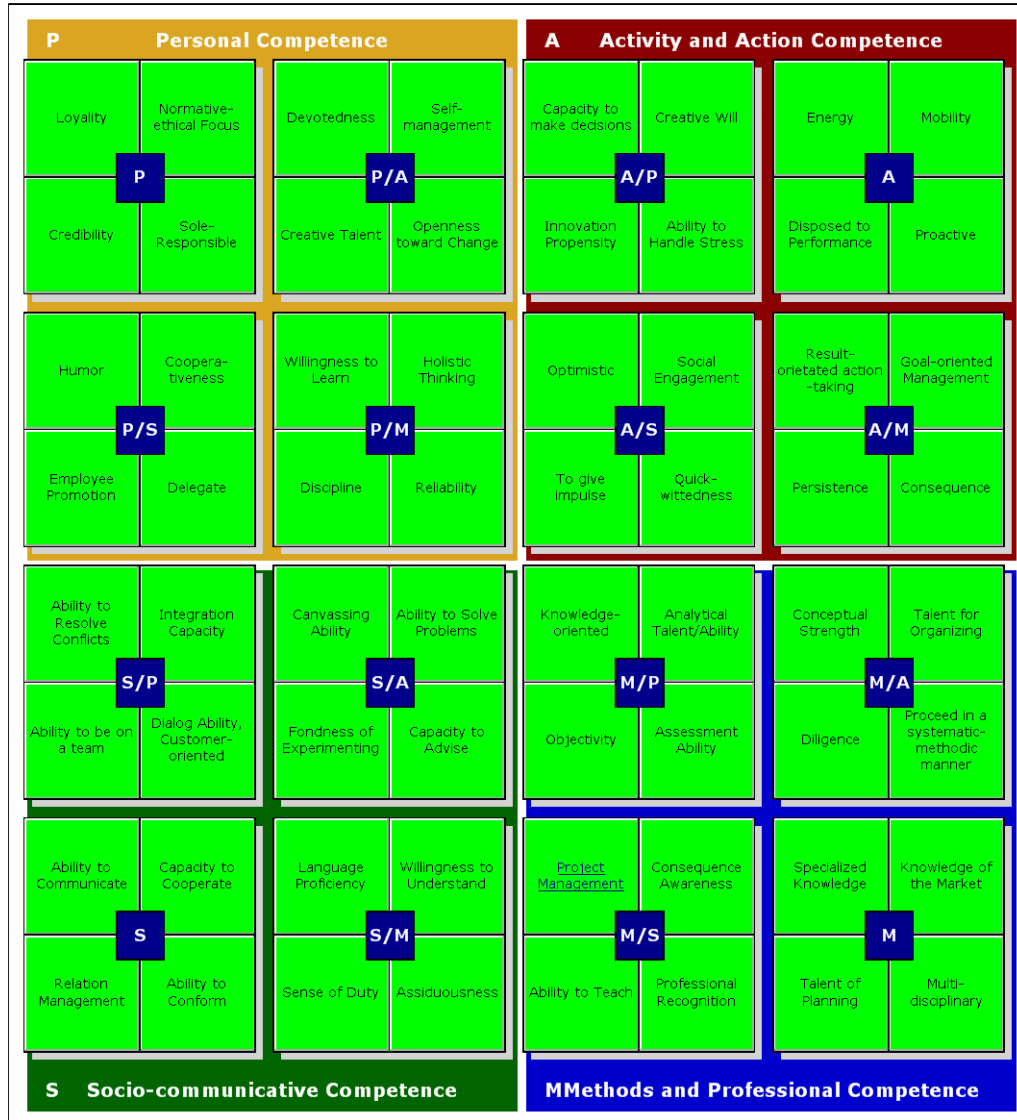


Figure 2. The competence explorer (Heyse & Erpenbeck, 2004, p. XXI).

Cross-sectional competencies are complex competencies whose facets influence all four competence classes. Examples of cross-sectional competencies are media competence, management or leadership competence, innovation competence, and intercultural competence (see Zawacki-Richter & Hasebrook, 2005). In this context, cross-sectional competencies are also referred to as meta-competencies (Weinert, 2001).

## Qualitative Analysis of Competencies in Portfolios

Against the background of the competence terms described here, competencies of students, their acquired methodological and professional knowledge, cannot be tested directly. Only the application of concrete abilities in actual situations (performance) is assessable. Based on the question of how students reflect on their competence development processes in the portfolio and

which competencies are documented for teachers in this way, this study intends to analyze whether the portfolio, as a competence-based examination, is a suitable method for making students' competencies visible by means of their reflections on their individual learning processes.

The first part of the written project portfolios for the MBA in Education Management program serves as the data basis for this study. This examination performance is followed by the presentation of the findings within the second project phase and comprises a presentation of the project work as well as the individual competence growth observed from the student's (subjective) perspective. Based on the four competence classifications (personal competence, activity and action competence, socio-communicative competence, and methods and professional competence) from Heyse and Erpenbeck (2004), the competence explorer is used for the analysis of the written reflections of students taking the course. The students' portfolios were coded using grounded theory in order to facilitate the assignment of the reflections as theoretical constructs to the competence fields in the competence model. Grounded theory is known as a theory "that was derived from data, systematically gathered and analyzed through the research process. In this method, data collection, analysis, and eventual theory stand in close relationship to one another" (Strauss & Corbin, 1990, p. 12).

Using the coding of grounded theory, constructs or theoretical terms are formed in connection with indicators, which are based on the so-called concept-indicator-model (Strauss & Corbin, 1990; Schnell, Hill, & Esser, 1992).

A grounded theory is one that is inductively derived from the study of the phenomenon it represents. That is, it is discovered, developed, and provisionally verified through systematic data collection and analysis of data pertaining to that phenomenon. Therefore data collection, analysis, and theory stand in a reciprocal relationship with each other. One does not begin with a theory then prove it. Rather, one begins with an area of study and what is relevant is allowed to emerge. (Strauss & Corbin, 1990, p. 23).

Strauss and Corbin emphasize the importance of thinking comparatively. "Coding, as noted in a previous section, is an essential procedure" (Strauss, 1989, p.27). During the total of three coding steps, categories and subcategories can be noted and labelled, interpreted and related to each other. The pivotal role of coding is finding terms (concepts, constructs, categories) and not paraphrasing the data. The essential contents of the portfolios are thus clustered in concrete terms on a more abstract level.

The coding steps build on each other: Open coding is characterised by a line-by-line analysis of the data, in which each line is labelled with a code. Descriptions of phenomena are labelled with abstract terms that are potentially appropriate. Comparable with brainstorming, this coding form maintains possibilities for interpretations and different ways of reading the data. The purpose is to



form object-related, standardising, and abstract terms, enabling the comparison of data across different cases.

## **Qualitative Sampling and Thematic Coding**

The sample for this study contains 23 portfolios from the modules Technology-Enhanced Learning and Instructional Design, which are taught within the MBA in Educational Management program. Preceding the selection of the random sample for the comparative analysis, all portfolios were coded in the open coding process and subsequently subdivided into groups of counter-examples according to a contrasting case selection. To verify whether the four competence classes of the Heyse and Erpenbeck (2004) model are reflected in the written reflections, we selected those portfolios that contrast most with one another. Therefore, the sampling is oriented towards the categories from Heyse and Erpenbeck (2004) in order to stand a systematic examination of how far the competence explorer can be applied to the portfolios in the later analysis. The selected contrasting portfolios passed through yet another step of open coding, which was carried out using the computer-based analysis software program MAX-QDA. Whilst the data, which had been reduced to four contrasting portfolios by this time, were coded, the selected portfolios were continually compared.

For the next step of analysis, the classical coding process path of grounded theory was modified in order to be able to apply Heyse and Erpenbeck's 64 competence groups to the categories based on the portfolios, thus increasing the comparability of the data.

Following the process of the second run of the open coding, the 64 competencies from the competence explorer were summarized in a predefined categories system, and as such entered in MAX-QDA. This procedure, also known as thematic coding (Flick, 1996; Kuckartz, 2007), is suitable especially for comparative data with predetermined categories, as is the case with the defined competencies of Heyse and Erpenbeck. The categories, in this case the competencies, are defined as thematic groups and assigned to each individual case. The interpretation of the data assumes a theoretical "concept of the distribution of perspectives on a specific object or process" (Heyse & Erpenbeck, 2004, p. 210).

By applying the procedure outlined above, a thematic structure of competencies for each portfolio is obtained, allowing a precise placement within Heyse and Erpenbeck's (2004) competence groups. This classification also serves to identify similarities and contrasts between the students' reflections on their competence processes. Consequently, the validity of Heyse and Erpenbeck's (2004) competence explorer can be verified on the basis of the reflections in the portfolios.

## **Discussion**

The categories, as ascertained by the open coding, could be clearly assigned to the four competence classes. In the portfolios, the students' actions were made visible, strategies traced, and attitudes detected. By the use of thematic coding, the students' portfolios could be further converted into so-called "competence maps."

The phenomenon of students' competencies can be described using the coding paradigm (Strauss & Corbin, 1998), and it is useful to systematically identify and compare complex relationships within the data. To be precise, by applying the competence-grid to the portfolio-texts, this examination aims at identifying those competencies that lead the students to align their individual study goals with the required group project and the subsequent presentation of the findings within the group. In order to be able to compare the aggregate of competencies, which is required for online group work, the categories found in the first open-coding run from the portfolios were contrasted with the codes of the 64 competencies of the thematic coding, to determine how they differ regarding the individual competence types. In the following section, four contrasting cases are presented to represent and illustrate the four competence classes. They are coded as SCC (socio-communicative competence), MPC (methods and professional competence), PLC (personal competence), and AAC (activity and action competence).

### **Type SCC: Socio-Communicative Competence**

The presentation of the results starts with the competence type "socio-communicative," referred to as type SCC. According to Erpenbeck and von Rosenstiel (2003), social competence equals a disposition

enabling the individual to independently act in a communicative and cooperative way; in other words, to be capable to deal and work with others creatively, to act in accordance with the needs of the group, and to develop new plans, tasks, and goals together.  
(p. XVI)

For type SCC, the code distributions with regard to the identified competencies show that socio-communicative competence, with a total of 17 attributions, quantitatively outweighs all others. It is certainly not expected that type SCC consists exclusively of socio-communicative competencies; otherwise, this would demonstrate a competence distribution that is one-sided and impractical for studying. In order to study successfully, the student needs methods and professional competencies, which are represented in her portfolio. Her methodological and professional competence is further characterised as a mixed form, blending social and communicative competencies.

The student, classified as type SCC, starts her portfolio by describing the initial phase of the contact session. Her portfolio demonstrates clearly that her attention regarding the course module is focused on the group process. This can be concluded not only from the language used, but also from the formal arrangement of the reflection, as the first chapter is titled "Reflection on the group phase" and the second is entitled "Finding the topic for the project work."

From the student's perspective, the functional result of the project work represents solely the "means to an end." As such it takes on a secondary role in the process. Her attitude towards the online work is further characterized by the fact that she evaluates the group process, rather than

the processing of the subject matter, as a challenge. The group's assignment is to examine methods and models of e-learning. On the selection of the topic, the type SCC student stresses her affinity to group work, at the same time placing herself as a "passive" member of a group (SCC, ability to be on a team). She describes the process of finding a topic for the project phase as a "process, which was arranged effectively and meaningfully, and performed to the satisfaction of all participants" (SCC, capacity to cooperate).

The position of type SCC within the group is that of an unobtrusive group member. Even though she behaves very cooperatively, she does not contribute much to the group process. Instead of turning towards the group in order to find strategies that make the work on the module easier, she works "by means of a project plan" (MPC, proceed in a systematic manner). An individual problem-solving strategy cannot be seen. Whenever problems arise she does not take the initiative, but behaves passively, with a wait-and-see attitude. Looking retrospectively at a communication problem which arose at some point within the group, she complained that "at this point, carrying out a telephone conference could have probably helped me personally." In this way she displays little personal competence by feeling responsible for her problems, but rather shows behaviour that awaits the reactions of the group.

Initially, type SCC feels reserved toward the new tool in the online learning environment. Later, the shared use of this tool by the group alters her attitude and it becomes an "appreciated instrument" (SCC, ability to conform) for the student. Consequently the group also takes on the role of a "safe room" because the student does not feel like an isolated being in the course.

When presenting the results to the plenum, the acceptance (as a public image) of the entire group by the other groups in the module is important to type SCC. The group's results and its democratic notion are prevalent here. The result of the group work takes on a subordinate role once again. Type SCC is not so much interested in the other groups accrediting the topic as in the assessment of the group by others. As indicated in the portfolio, it seems that type SCC attaches more value to the group work being assessed positively "as a group" than to the actual result of the group work. Apparently, she attaches only little value to personal success since she identifies exclusively with the group in which she takes on a public role without taking on a performance role (Luhmann, 1999). Type SCC behaves cooperatively towards the other groups and acknowledges their achievements: "I was eager to see the results of the other teams."

In her summary of the module, type SCC eagerly anticipates a new group process in another online course. As a learning effect she wishes to be integrated "more continuously and effectively in my new group."

## Type MPC: Methods and Professional Competence

Type SCC, whose actions are focused on the group process, contrasts with the “methods and professional” competence type, described here as type MPC. Methodological and professional competencies are defined by Erpenbeck and von Rosenstiel as the dispositions of a person

to act mentally and physically in a self-organised way when solving factual and objective problems, i.e., to solve problems creatively by applying professional and functional knowledge, skills and abilities, to classify and evaluate knowledge sensibly; this implies the ability to design and develop activities, tasks and solutions using creative and innovative methods. (2003, p. XVI)

The code distribution of type MPC consists of 12 methods and professional competencies. The activity and action competence also designates a mixed type for methods and professional competence. Both characteristics of the socio-communicative competencies include the “ability to solve problems” as well as the “assiduousness” that exists in the group. Consequently, we find a “professional” in its purest form in this particular portfolio (in the sense of Weber's *Fachmensch*).

As the student does not mention preparation of the module in her portfolio, the phase preceding the actual course remains inaccessible for analysis. The module focuses on becoming acquainted with new online instruments, which were tested within the group for their usefulness in online courses. As such, this module contrasts that of type SCC, whose focus is on the group process of the learning effect. For type MPC, the group process, arranged around the testing of the instruments, is seen as a necessary “means to an end.” The student defines her personal learning success as acquiring “knowledge of educational technologies” and “trying them out” (MPC, specialized knowledge, professional and methodological competence, diligence).

Type MPC sees the challenge of project work from a technical perspective. The point is to research, categorize, arrange, and try out educational technologies. Type MPC is integrated in a group in which the technical aspect appears to be the primary focus. The topic conforms to the technical theme: “First of all, the central terms learning goal, learning effect and internet-supported learning were defined and the instructional theories of learning are examined more closely” (MPC, proceed in a systematic-methodological manner). Then “the instrument that was found was tested if procurable and the application described to the other two participants of the project” (MPC, objectivity, professional and methodological competence, talent of planning). Whereas the cooperation of the project group within the project work poses the biggest challenge for type SCC, type MPC regards the “organisation of the variety of the instruments and then to try out all the instruments individually” during the project work (MPC, talent of planning) as a challenge.

Type MPC does not once mention the other group members. There is only one chapter entitled “Own contributions to the project work.” These contributions consist merely of taking over the definition of the “learning targets and learning effects.” The integration of type MPC in the group

can be defined as a “cog in the system” because rather than the social position in the group, type MPC displays the subject-specific position in the group. Thus, type MPC occupies a position in the group that is objective and legitimated through specialist knowledge. Above all, she feels responsible for the definition of the specialist topic, not for the maintenance of a communicative process in the group.

For type MPC, the time load connected to the intensive online phase (presentation of the project’s results) represents the “sole disadvantage” of this phase: “shortly before the presentation phase I had reached my limits.” The student’s “limits” become visible here as she assesses the technical effort for the project as being very high and she underestimates the duration. It can be suspected that type MPC demands professional and high-quality results because the workload is justified in such a way that the requirements for the project contents become noticeably less important as the technical effort increases. This corroborates the image of the technical aspiration of a person with high methodological and professional competence, that he/she reaches his/her personal breaking point when the technical contents are “at risk.”

In the final presentation of the group results, it is important to type MPC that the researched instruments are used in an optimal way. The group can be interpreted as a “means to an end” for reaching the technical goal. Type MPC does not reflect on any more information regarding the group process.

Finally, the module is assessed for its technical benefits, which turn out to be positive: “The project enhanced my focus on my work and on which instruments are really suitable for my target group.”

## **Type PLC: Personal Competence**

The next competence type, “personal competence” (type PLC) can also be contrasted with the aforementioned “socio-communicative” and “methods and professional” types. According to Erpenbeck and Rosenstiel (2003), this competence type is characterized by the dispositions of a person

to act in a reflexive and self-organised way and to evaluate oneself. This implies the ability to develop productive attitudes, value positions etc., to unfold one’s own talents, motivations, intentions, and to develop and learn creatively and learn within the scope of the work and outside of it. (2003, p. XVI)

Based on Heyse and Erpenbeck’s (2004) model, this portfolio identifies a student who possesses a high level of personal competence. In contrast to the two previous types, in this case the personal competencies are present to a high degree; however, they are less useful for group work. Type PLC arranges the module, including the project group, around his personal course goals and reflects on the course as an “individual learner” who expects that the whole course is tailored to his needs. It is useful to note that with the socio-communicative competence type, the online

module was focused on the group process, while the methodological and professional type focused on the technical topic.

The use of the self-referential pronouns *I* and *me* in this portfolio is striking. Many sentences start with “answered by me on time,” “I selected in accordance with my expectations,” “I initially placed this in the assignment field,” “was posted by me,” and so on.

Before the course officially started, type PLC had intensively engaged with the module. He thoroughly researched the functions of online tools in advance: “In order to prepare for the demands of the module, I tested the functions of WebCT and studied guidelines and materials that were offered there beforehand.” While this behaviour shows a high degree of personal competence regarding individual responsibility, it could also demonstrate an egocentric point of view. Accordingly, the particular type PLC, identified in these portfolios, is interpreted as a “lone wolf” within the group project. He only has eyes for his own goal and uses other members of the course to accomplish it.

Type PLC aims at “organising his course around his central occupational topic.” Thus, the online module is turned into a course that is precisely tailored to his needs. At the beginning, he carefully plans and fathoms the technical and functional facilities to see whether they match his expectations. Moreover, the assessment of the course by others is very important to type PLC. After advisory services on the module are accessed (“I obtained detailed advice”), the advantages of the course are related to his occupational goals and desires: “In addition, I emailed two students, whose names were given to me by Mr X, and asked them about their experiences.” Furthermore, type PLC regards this online module as an opportunity “to test studying.”

With regard to problem-solving strategies, type PLC behaves similarly to type SCC in this study, namely passively. But unlike type SCC, who waits and sees, type PLC rather “complains” if there are any problems, especially when these are of a technical nature, instead of contributing to concrete solutions. Particularly when technical problems occur, he automatically expects the university to solve them but never questions his foreign Internet connection as a possible cause of these technical difficulties. Whenever there are communicative misunderstandings, type PLC lays the blame onto the lecturers: “Unfortunately, because of communication problems with the lecturer, not all participants had prepared a PowerPoint presentation.”

Where type SCC displays reservations towards the foreign online tool, type PLC expresses “concerns” that technical faults could occur, which might keep him from “starting optimally.” As will be shown in the following section, type AAC (activity- and action-oriented competence) uses technical problems as a challenge to learn the correct way of handling new technical tools. This range of responses is remarkable insofar as the reflections in the portfolios originate from the same online module. The same module is therefore considered from different perspectives from the point of view of different competence types.

The idea of realising his project pervades the attitude of type PLC towards the online project work, the choice of topic, and the group. Type PLC selects a topic that is directly related to his work context, which the others (may) fall in line with. In this respect he writes:

Instead of uploading my project sketch in the general forum, I accidentally uploaded it to the assignment area of WebCT. After this fault was corrected and the lecturer had commented in detail on the sketches, two participants X and Y, joined the project.

He does not suggest the topic in a democratic discourse, but publishes it in the forum where he then has the lecturer comment on it in detail. After that he selects “his” group members in accordance with their technical knowledge and “efficiency”; they subscribe to the topic, which is now organised by type PLC. Thus he takes on the role of leader and degrades his group members to marginal figures. This “perfectly functioning” personal competence illustrates that type PLC possesses a high level of individual responsibility and “looks after himself well.”

His position in the group becomes that of a “pioneer” and “evaluator.” In this context it is characteristic for type PLC that the group work functions smoothly according to his rules (“...that the project idea that I submitted should be the basis for further cooperation”). Unexpected incidents endanger the progress of the group work; for example, during the presentation of the results, he states, “Ms. X experienced a serious private problem situation for a few days.” There are no individual concrete socio-communicative competencies that could be identified here for problem solving and exhibiting empathy with Ms. X. Instead, type PLC reports that the rapid intervention of the group ensured that nothing got in the way of the presentation of his project idea.

In contrast to the socio-communicative type SCC, to whom the well-being of group members is important in a problem situation, the focus of type PLC on his own project idea can be seen clearly here. The general rule of the socio-communicative type, “all for one and one for all,” seems to turn into the principle “all for me.” In contrast, the methodological and professional competence type could be assigned to the principle “all for the collective topic.”

Type PLC displays strengths by means of the competencies “persistence” and “diligence.” For example, in his reflection, he explicitly lists the items of the tasks he carried out in the group (“I did the following work”). These include those tasks that form the basis for further tasks of the group members, e.g., literature research and establishment of an Internet platform, which implies that the group would have failed, had it not been for his “basis work.” As an example he states, “I also generated all the diagrams for the presentation from this table.”

Type PLC’s summary after the course is characterized by strong personal interests:

What I also liked was being able to bring in my professional background and that I enjoyed the freedom to work on a practical problem as part of a very committed project group. Our

results have already been partly implemented in a concrete project.

What is not mentioned at all is how the other group members, having appeared only in “supporting roles” within the project, can integrate this “group result” into their own professional work.

After the end of the project phase, Type PLC closes the course with a “last word” by using the forum to provide feedback for the tutor, commenting on the course and making various suggestions for improvements.

## **Type AAC: Activity and Action Competence**

The activity and action competence type (identified as type AAC) is highly motivated, as is type PLC, in the competence areas of diligence and engagement. The creative power of both competence types is pronounced; however, the intentions that motivate the actions originate in type AAC from pleasure in innovation and enthusiasm for the subject and in type PLC from achievement of a personal goal.

Erpenbeck and von Rosenstiel (2003) describe activity and action competence as dispositions of a person

to take action in a self-organised way, and to focus on the implementation of intentions and plans – either for themselves or for others and with others, in a team, in a company, in an organisation. This implies the property to integrate one’s own emotions, motivations, abilities and experiences across all other competence categories, and to follow actions through to successful completion. (p. XVI)

Type AAC’s reflection starts with an English quote commenting on the various possibilities of online tools for collaborative learning. Type AAC sees the challenges of online learning in terms of technical innovation and development. Personally she regards attending the course as a challenge as well.

In the first section of the portfolio, type AAC refers to her motivation for taking this course as “driven by the practical relevance.” The student titles the first chapter of her portfolio as “motivation in terms of the project topic,” which implies her motivational objectives for starting the module. By comparison, type SCC (social-communicative) starts the portfolio with a “reflection on the group phase,” type PLC (personal competence) reflects in the first section on his personal goals in the course, and type MPC (methodological and professional competence) starts the introductory text with a technical, objective description of the project’s goal.



Besides the online module examined in this study, type AAC is also engaged in the organisation and mentoring of another open university course. In her reflections in the text, type AAC stands out due to a high degree of motivation and interest for the module. Type AAC describes technical problems as “challenges,” prompting her to learn how to deal with technical online tools. In this context, the text contains strikingly positive statements. Type AAC talks of motivation, interest, challenges, additional benefit, gains, processes, and so on.

This process-oriented thinking recurs in her reflection on the group work. Type AAC sums it up this way:

At the beginning we still had the goal of developing a list of criteria for quality assurance. However, over the course of the project we had to give up this goal, as we realized that this is not a profitable project. Since each organisation is unique, the respective criteria to assure the quality vary for each institution.

Type AAC’s position in the project group is characterized by active participation and cooperation. The group is formed in accordance with the competencies of the individual group members and tasks are assigned on the basis of individual abilities (“the priorities and the competencies of the individual group members were quickly and clearly defined”). Furthermore the climate within the group is dominated by equality. Consequently, Type AAC describes the group as a “dream team.”

Type AAC devotes a long section of her portfolio to the description of her parallel course module and her activities as a tutor for this module, offered by the same university. Many processes in her field of activity are not defined, and because of her “Internet affinity” the student becomes “the e-learning representative of the whole university.” In spite of the double workload, type AAC becomes more “active” and more motivated because the situation increases her interest in grappling with the subject matter more intensively. The example of type MPC’s breaking point stands in contrast. Type MPC reaches a breaking point under the pressure of time, especially because the quality of the technical topic could not be maintained; whereas, “pressure of time” induces type AAC to increase her workload as well as her interest for the project. Type AAC regards the online presentation as a challenge “to cope with the technical realisation of the Internet presentation.” At the same time she discovers the advantage of “not having to travel” in order to hold the presentation.

Type AAC believes that she has fully achieved the learning goals of the module. Thus she states in a chapter, entitled “gain for practical use”: “In fact, I can now transfer the acquired results one hundred percent to my practical work.”

In this examination, the strongest presentations of the “ability to be on a team” and the “ability to solve problems” are seen in the the socio-communicative competencies of type AAC.

Within the methodological and professional competence – the “systematic-methodological approach” – project management skills and a sense of “consequence awareness” are apparent, indicating a mix of methodological and professional competence with socio-communicative competence.

## **Summary and Conclusion**

In summary, the competence explorer from Heyse and Erpenbeck can be used as a suitable instrument for making students’ competencies visible in their portfolios and thus for identifying students’ existing competencies. Based on the students’ reflections, the explorer can further contribute to drawing conclusions regarding the type of competencies that were acquired during the learning processes. Using the explorer can also help to detect the particular types of competencies that students employ in specific learning situations, when specific problems arise, and when students reach their limits.

However, this text analysis cannot explain the origin or what causes the emergence of the competencies found in this study. Therefore, it is impossible to determine whether any and which of the identified competencies existed before the students enrolled in the modules or were acquired or modified during the learning process. Likewise, this approach does not allow an increase or change of a competence to be correlated with the module. Therefore, it could be interesting for future research to examine in a longitudinal analysis whether the identified classifications change over the course of the studies as a result of the instructional design of the course modules.

However, the qualitative text analysis based on the competence explorer does enable students’ competencies to be identified on a much more differentiated basis than would be possible without other forms of examination. Even though we are unable to derive from the text, written in the form of minutes or a working report, why students possess these competencies and not others, or to identify reasons for students’ behaviours during the project phase or the reflection phase, this procedure does in fact enable feedback guided by criteria.

The prerequisite for competence-based assessment is that the courses of study are themselves based on recognised competence models, which contribute to making a portfolio not merely a collection of artefacts but a systematic presentation of acquired competencies accessible to an assessment by third parties. The model used in this study appears to be suitable for this purpose. However, it should remain transparent for the learners, so they can refer to it explicitly. Furthermore, the competence portfolios – based on a coherent competence framework – provide the basis for use as a valuable resource for the recognition and assessment of prior learning in systems that recognize that practice.

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