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DISSERTATION SUMMARY

Raising health science students' terminological awareness with the aim of improving the effectiveness of healthcare communication in ELF contexts

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1. Introduction

Healthcare communication is a complex issue that can take place between various healthcare professionals or between them and patients. Throughout, however, the main aim is to provide patient care and improve patient health outcomes (Van de Poel et al., 2013). Patients when seeking or requiring medical care meet a whole range of healthcare providers, for instance, doctors from different fields, nurses of all types, physiotherapists, midwives, paramedics, dietitians, pharmacists, and professionals in preventive medicine (e.g., health visitors, public health workers). Healthcare providers engage in communication with laypeople on various health issues, either providing information to or eliciting information from them. They take patients' medical history, provide information on certain conditions, explain procedures they perform on patients and also instruct them to cooperate during the procedures, give recommendations on healthy lifestyles, and provide mental support for patients, just to mention a few. Furthermore, in certain emergent scenarios healthcare professionals have to gain information from patients and sometimes patients' relatives in a very effective manner as time for talking with the patients is often very limited due to the patients' acute health conditions.

When attending to patients, providers must make sure that the care they provide is of appropriate quality. According to the WHO (World Health Organization, 2020), quality health services are effective, safe, people-centred (i.e., taking individual preferences, needs, and values into account), timely (i.e., without harmful delays), equitable (i.e., without discrimination), integrated well in the health system (i.e., coordinated and with access to all services available), and efficient in terms of utilizing resources. Nevertheless, several challenges may occur that can make it hard to ensure that patient care provided is at a quality level. Apart from issues that may emerge on systemic or financial levels, several communication problems may occur. Patients' personal traits and providers' attitudes toward them may also have a substantial influence on how successfully quality care can be realized. Some patients may be taciturn, some talkative, and many of them may react emotionally or sometimes aggressively in physiologically or psychologically demanding situations such as bearing pain or getting bad news (Pilling, 2011; Van de Poel et al., 2013). Furthermore, patients may have personal problems, be in altered mental states (e.g., with dementia, developmental delays, limited intelligence, or under the influence of alcohol or drugs), may have impaired hearing or vision, or be victims of violence or trauma (Pilling, 2011; Van de Poel et al., 2013). Additionally, in many cases sensitive or taboo topics must be addressed, which can be even more challenging if

the patient's family or friends are present at the provider-patient consultation (Pilling, 2011; Van de Poel et al., 2013).

All the challenges provider-patient encounters may pose must be addressed by healthcare providers, which entails that they must communicate in a way that quality patient care is ensured regardless of the challenges, i.e., in a way that both the provider and the patient perceive the communication to be successful. The success of communication largely relies on how participants convey the messages they wish to communicate (Frasier, 2016 based on Shannon & Weaver, 1949) and how they generate meaning by both sending messages and receiving feedback in an interactive manner (Schramm, 1997). Moreover, for provider-patient communication to be successful, it is paramount that healthcare providers are capable of effective and appropriate communication in any circumstance, that is, in the shortest time possible with the greatest efficiency and in a person-centred and non-discriminative way. Since provider-patient communication is mainly realized via oral communicative interactions, i.e., the interlocutors engage in communication by speaking with each other, a great emphasis must be put on both verbal and nonverbal communicative behaviour, that is, how they express themselves, how they use language and nonverbal elements (such as gestures or intonation) in their interactions. In other words, what they say and how they say it largely influence the outcomes of their encounters with patients, including the quality of the care, namely, health outcomes (King & Hoppe, 2013; Sharkiya, 2023), quality of life (Sharkiya, 2023), and patients' adherence (Zolnierek & Dimatteo, 2009) and compliance – i.e., the patient following the instructions of the healthcare provider, adhering to therapy in a way that it results in a lifestyle change.

The challenges are further complicated by a growing number of provider-patient communication taking place in international healthcare contexts, where in most cases English is selected as the mediating language by the interactants, as "the communicative medium of choice" (Seidlhofer, 2011, p.7), as a result of English having become a non-local means of global communication (Mauranen, 2018). In these encounters, interaction occurs either between native speakers of English (NS) and non-native speakers (NNS) or between NNSs whose shared language is English (Bosher & Stocker, 2015; Keresztes, 2009; Martin, 2015; Oliver, 2015; Sobane, 2015; Tweedie & Johnson, 2019). For instance, Hungarian healthcare providers may talk in English to patients whose first language is not English both in Hungary and abroad (Németh & Rébék-Nagy, 2015) as well as to patients whose mother tongue is English. Such

use of English is considered communication in English as a Lingua Franca (ELF). This form of English language use in a healthcare setting was coined Medical English as a Lingua Franca (MELF) by Tweedie and Johnson (2018).

Since ELF and thus MELF communication involves people from various linguacultural backgrounds (Baker, 2018; Jenkins, 2015; Landmark et al., 2017; Mauranen, 2018; Pölzl & Seidlhofer, 2006; Seidlhofer, 2018), it can also pose further challenges for all interactants, as varying degrees of English proficiency and differing experiences in health and health care may lead to misunderstandings or challenges in exchanging information (Sobane, 2015). In patient care, miscommunications can have a negative impact on providing safe and quality care, since language barriers can lead to limited access to quality health care, e.g., errors in diagnosis and treatment, insufficient understanding of patients' conditions and treatment options, medication mistakes, and reduced compliance (Deumert, 2010). The misunderstandings in MELF situations can also happen due to providers disregarding patients' health literacy, that is, how much they actually know about their health or medical conditions and physiological functioning (Schyve, 2007) or disregarding patients' beliefs and norms and relying on false assumptions (Martin, 2015).

The language barrier commonly present in MELF interactions is often rooted in the threefold nature of medical terms, that is, their cognitive, linguistic, and communicative components (Cabré, 2003). From the cognitive aspect, the meanings of terms may not be as fixed as one would assume, as can be seen in the observations of Cooke et al. (2000), who found that the term 'unconscious' can mean different things to people with different proficiencies of English. This example points out that even if a healthcare provider and a patient share the linguistic component of a medical term, in this case the word 'unconscious', it may activate a different cognitive component in their minds. Such mismatches do not make it possible for the term to reach the intended communicative goal, that is, to make meaning in the communication. When a larger difference in providers' and patients' cultural backgrounds is present, these misunderstandings can be graver, for instance, as Elderkin-Thompson, Silver, and Waitzkin (2001) point out, not understanding cultural metaphors used by the patients results in faulty interpretations of patients' complaints. In such circumstances, patients' 'yes' or 'no' responses are sometimes taken as signs of understanding, while in fact they are merely acts of politeness (Cass et al., 2002; Meeuwesen et al., 2007). Furthermore, all these uncertainties and extra efforts in processing information lead to unnecessarily long provider-patient interactions

(Ritala, 2022) and more tests ordered with the aim of compensating for the missing or uncertain information (not) provided by patients, which puts more strain on healthcare systems and result in unequal distribution of sources and facilities (Waxman and Levitt, 2000).

Since medical terminology is key in exchanging information in healthcare communication, providers must engage in interactions with their patients with a heightened focus on the medical terms they use in a particular encounter and how these terms are perceived and understood by their patients. In other words, healthcare providers must have awareness regarding the use of medical terminology and must consciously reflect on the terms used in provider-patient interactions. Awareness and conscious reflection regarding the use of terms are especially crucial in MELF communication where possibly a smaller extent of medical terminology is shared by the provider and the patient due to their differing linguacultural backgrounds, for instance, when a lay English term the provider assumes to be understood by the patient (e.g., bowel) may be unknown to the patient who would be familiar with the term intestine because that is the term used in their native language (e.g., intestino in Italian). Such mismatches of the provider's and the patient's medical terminology can largely reduce the effectiveness of MELF communication.

In order to enhance the effectiveness of information exchange in MELF interactions, interlocutors tend to use a wide range of communication strategies to solve the problems emerging while negotiating meaning. The extended use of strategies is observable in any ELF communication (Jenkins, 2009) as well as in encounters where NNS of English are compensating for their limited knowledge of the language (Dörnyei & Scott, 1997). These communication strategies include checking comprehension, requesting confirmation and clarification, reformulating and simplifying utterances, engaging in repetitions (Björkman, 2014; Cogo & House, 2017; Cogo & Pitzl, 2016; Kaur, 2011b; Ritala, 2022; Svennevig et al., 2019; Ting & Cogo, 2022). Moreover, interactants in MELF communication often work towards co-constructing meaning by using multilingual resources they assume to be shared (Cogo & House, 2017).

In line with the above, it is important that healthcare providers are prepared to cope with the challenges of MELF communication so that they can provide safe and equal quality care to any patient they meet. These needs must be reflected in English for Medical/Healthcare Purposes (EMP/EHP) classes where learning objectives and teaching methods need to be adapted in a way that EMP/EHP learners become capable of effectively communicating with patients from

various linguacultural backgrounds, by adjusting their use of medical terminology in a way that it transmits information the most effectively possible. Accordingly, EMP/EHP teachers must be knowledgeable of what characterises MELF communication and the use of medical terminology in these encounters, what challenges healthcare providers face when using English medical terminology in MELF contexts, and what communication strategies can lead to effective and successful information exchange in MELF communication. Furthermore, EMP/EHP teachers must also have a solid methodological foundation for making decisions on how healthcare providers can be prepared for MELF interactions.

Henceforward, the focus of EMP/EHP research must be not only on the language produced in medical encounters but also on the relevant aspects of how language and medical terminology are used in MELF communication and what processes underlie this language use. In other words, pragmatic analyses of healthcare communication and MELF language use must be carried out and the findings must be implemented in EMP/EHP classes. Therefore, the findings of corpus-based discourse and conversation analyses that explore and describe the patterns of healthcare communication products (e.g., Demjén, 2020; Huang & Yu, 2023) can serve as studies pointing at the problems and challenges of language use in health care, but EMP/EHP teachers must be careful not to translate the conclusions of such descriptive studies to prescriptions on language use, rather to raise learners' awareness of how language use can influence the outcome of provider-patient encounters. EMP/EHP teachers must keep in mind that their students must prepare for MELF communication, which may require increased negotiation and problem-solving in order to exchange vital medical information with the help of terminology, and, accordingly, EMP/EHP classes must provide learners with opportunities to engage in tasks where they can refine their communication strategies while coping with the challenges of MELF language use.

Concerning the use of medical terminology, its embeddedness in communication must be emphasised and EMP/EHP learners must be provided with a wider range of terminology than technical and semi-technical terms in the field of medicine (e.g., Nguyen Le & Miller, 2020, 2023) so that their communication with patients can be enhanced and that they have a broad selection of phrases that can be used to express various pieces of information to be communicated to patients. In this vein, medical terminology should be considered a means of communication, a tool that can be used in any possible way to reach one's communicative goals, that is, in provider-patient communication the provision of quality care, and EMP/EHP classes

should provide opportunities to raise awareness of the various ways of using medical terminology and to gain practice in making conscious decisions on how to use terms in the most effective manner possible.

Consequently, mainstream EMP/EHP approaches focussing on language as a product of communication must be revisited, and novel ways of teaching and learning EMP/EHP must be found that shift the limelight to the processes governing healthcare providers' language use and use of medical terminology. Therefore, this PhD dissertation aims to explore encounters between healthcare providers and their patients in MELF contexts, with a specific focus on what challenges Hungarian healthcare providers face when they engage in MELF communication, especially with regard to their use of medical terminology – the main vehicle of information in healthcare communication. In addition, the ways of coping with these challenges are explored, that is, the strategies used by both Hungarian healthcare providers and foreign patients in Hungarian healthcare contexts are described, and a proposition is made on how healthcare providers who are NNSs of English can be prepared to face the challenges of MELF communication with the help of improving their conscious use of terminology and thus their awareness regarding appropriate use of medical terms, within the framework of EMP/EHP classes.

As has been proposed above, successful and effective provider-patient communication in MELF contexts can only be realised if medical information is exchanged with precision, efficiently, and in a person-centred manner. Furthermore, since the time factor in providing quality patient care is also crucial, the increased need for negotiation in (M)ELF contexts must be reduced to an optimum, for which effective ways of gaining and sharing medical information must be found. The key to such effectiveness is healthcare providers' awareness and conscious reflection on the use of medical terminology.

Terminological awareness (TA) is a mental state where schemata automatically offer specialised language use that is appropriate in a particular communicative situation. It ensures that terms are selected with cognitive ease based on intuitive assumptions (Kahneman, 2011; Tőrey, 2014), letting the user of the language creatively exploit mental resources. Since this mental state is a function based on schemata, experiences in specialised language use enhance it continuously. In order for language users to develop schemata that ease communication, they must possess an openness to alternative perspectives that allow for the modification of their

schemata. Alternative perspectives require consciousness, as cognitive strain and voluntary attention are necessary to break free from the patterns that schemata offer.

Terminological consciousness (TC) is then an alert mental state where the mind works with a reflective mode in order to find alternative uses of specialised language for establishing appropriateness in a particular communicative situation. TC is turned on when the mind finds a discrepancy between expectations and the actual effect of language use, for example, when the interlocutor does not seem to understand the term used. In these instances, the language user must move "sideways across the patterns" (De Bono, 2015, p. 32); that is, look at the situation from an alternative perspective, with lateral thinking, with serious creativity (De Bono, 2015). Such creativity requires a pause in proceedings and a reflective mental state to be able to understand and solve the discrepancy perceived. Schön (1983) emphasises that when someone "becomes aware of his (sic) frames, he also becomes aware of the possibility of alternative ways of framing the reality" (p. 310). Although Schön (1983) uses the adjective 'aware', it is evident that it refers to consciousness as defined in this present dissertation; that is, a reflexive way of looking at and exploring one's own schemata. Therefore, it is a prerequisite for TC to function that the language users are conscious of their frames or schemata affecting their selection of terminology in communication.

In order to understand the processes underlying the conscious use of medical terminology in MELF provider-patient encounters, first the theoretical underpinnings of MELF communication and the development and assessment of terminological awareness are explored in the dissertation along with the argument on how these processes should be included in EMP/EHP class materials. In addition, since MELF communication is a relatively new field of study and the data on MELF provider-patient interactions are scarce, the first part of the empirical investigation of this dissertation focuses on the processes that realise effective and successful MELF provider-patient communication based on qualitative data from retrospective accounts of Hungarian healthcare providers and foreign patients in Hungary with a focus on the use of medical terminology. Based on the findings and the theoretical underpinnings, the requirements for a MELF-oriented EMP/EHP material developing terminological awareness are presented. The second part of the empirical investigation gives an account of the application of such a material in a Hungarian EMP/EHP classroom. In addition, an assessment tool for terminological awareness is proposed and validated. With the help of a qualitative quasi-

experimental method and using the assessment tool proposed, the effectiveness of developing terminological awareness with the MELF-oriented material is tested.

Since the main goal of this PhD work is to provide EMP/EHP teachers with insights into how they can include the ELF aspect in their everyday classroom practice, after the empirical results are outlined and discussed, the dissertation terminates in the formulation of the implications for language pedagogy. In this way, the dissertation wishes to fill a niche in EMP/EHP practice by offering a MELF-oriented methodological framework that can be used as a basis for creating EMP/EHP materials which focus on developing and improving the mental processes governing terminological awareness necessary for effective MELF provider-patient communication.

2. Research Questions

In line with the aims of this PhD dissertation formulated in Chapter 1, the research questions (RQ) target (1) the exploration of MELF provider-patient communication so that a MELF-oriented EMP/EHP material focusing on the development of TA and TC can be created that builds on the characteristics of MELF communication, including its challenges and the strategies used to cope with these challenges; and (2) the assessment of how the MELF-oriented EMP/EHP material presented is capable of developing Hungarian health science students' TA and TC. RQ1 with its three subquestions (RQ1a, RQ1b, and RQ1c) wishes to elicit data for reaching aim (1) and RQ2 for aim (2).

RQ1: What characterises the use of medical terminology in MELF provider-patient communication?

RQ1a: What MELF communication is considered successful by providers and patients?

RQ1b: What challenges do providers and patients encounter when exchanging information in MELF communication?

RQ1c: What strategies do providers and patients use in order to ensure the proper exchange of information in MELF communication?

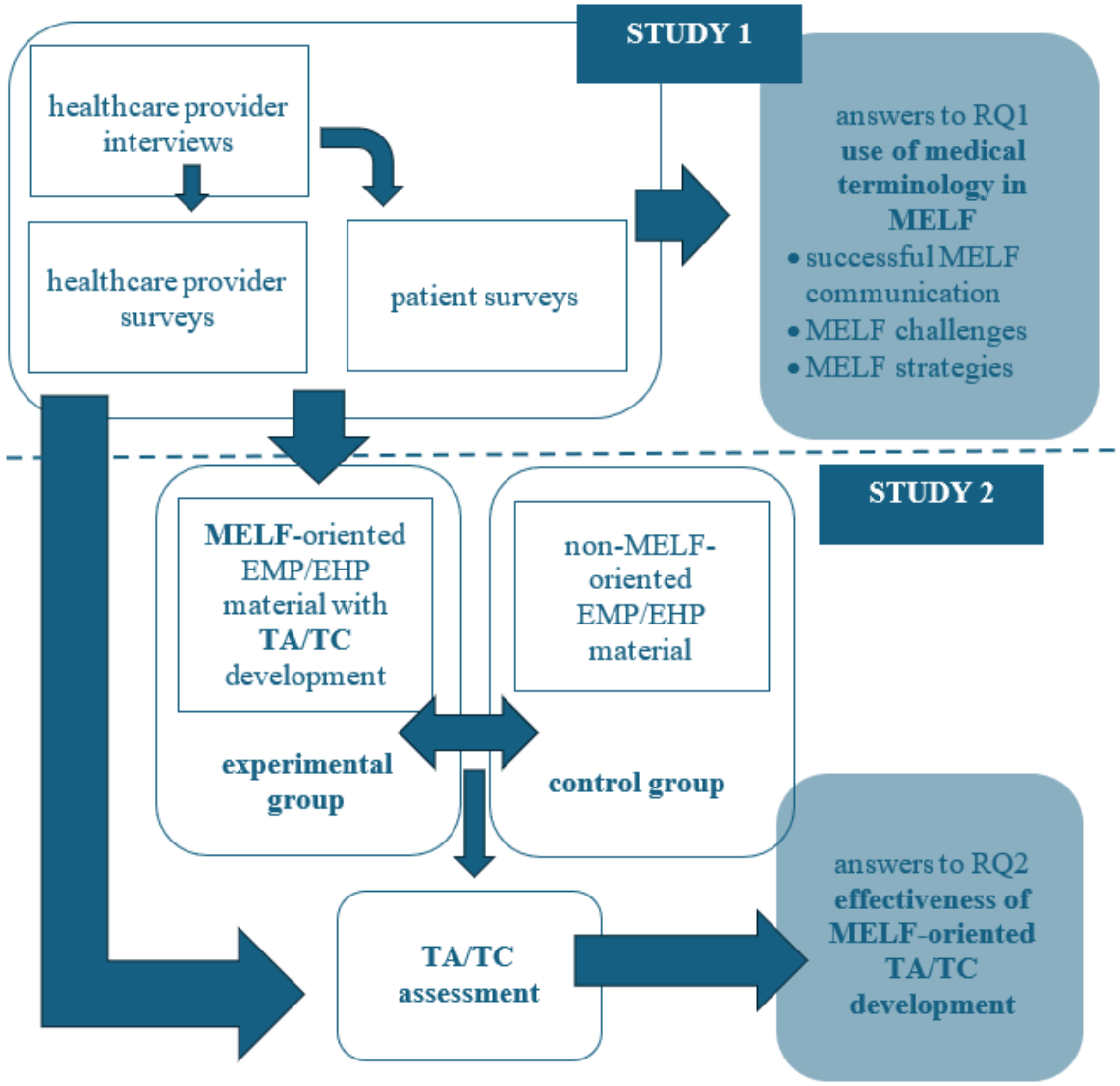
RQ2 How does TA/TC improvement affect TA/TC in MELF communication?

3. Research Framework And Methods

The empirical research of this PhD dissertation is built up of two studies, the second study building on the results of the first. Study 1 aims to answer RQ1 with the help of qualitative

interview and survey data from Hungarian healthcare providers (N=56, 18 by interview, 39 by survey) and foreign patients in Hungary (N=40, by survey). The findings of this inquiry serve as the ground for the creation of an EMP/EHP material preparing Hungarian healthcare providers for MELF encounters with patients by providing information on what characterises MELF provider-patient encounters, what challenges EMP/EHP students must practise to cope with, and what strategies they need to gain practice in. By informing the creation of a MELF-oriented EMP/EHP material, the findings of Study 1 feed into Study 2, which is a qualitative quasi-experimental investigation of an EMP/EHP classroom practice with the focus of developing TA and TC in MELF provider-patient encounters. Study 2 compares four groups of Hungarian physiotherapist students (N=46), two as experimental (n=24) and two as control (n=22) groups. The experimental groups follow the MELF-oriented material created based on the findings of Study 1 with the aim of developing TA and TC, while the control groups do not receive this treatment. In Study 2 RQ2 is answered, as all four groups' TA and TC are assessed at the beginning and end of their 10-week EMP/EHP course in order to investigate the effectiveness of the MELF-oriented EMP/EHP material.

Figure 1
The framework of the research



4. Research Findings

4.1. RQ1 – What characterises the use of medical terminology in MELF provider-patient communication?

The data from interviews and surveys involving Hungarian healthcare providers and foreign patients in Hungary point to the crucial role of medical terminology in MELF provider-patient communication as precise information exchange can only be realised by communicating medical information, the main device of which is medical terminology. It can be seen that lack of shared medical terminology (i.e., understood by both the provider and the patient and meaning the same concept for both of them) is compensated at all costs by using other sources

of information carrying medical knowledge, for instance, observable and measurable clues. In case there is a chance to negotiate medical information, various forms of accommodations are applied so that the provider and the patient can achieve a shared understanding of the medical encounter. Accordingly, various processes of TA and TC can be observed in providers' and patients' accounts as they work toward realising successful MELF communication by exploiting and adapting their schemata in order to cope with the challenges the differences in their knowledge of medical terminology pose.

4.2. RQ1a – What MELF communication is considered successful by providers and patients?

The overall aim of MELF communication aligns with the aim of healthcare communication, which is to provide quality medical care to patients (WHO, 2020). As has been found, providing care is strongly based on the exchange of medical information, for which the use of medical terminology is crucial, especially in the topics of patient medical history and symptoms, as well as when giving information, explanations, and instructions to the patient about examinations, treatment, and the healthcare system. Furthermore, the emotional aspects of medical encounters are also important in order to reduce the increased anxiety and vulnerability of patients that can be observed in MELF encounters and to create trust and safety and thus achieve compliance with treatment and medical advice. Nevertheless, it could be seen in the accounts of Hungarian providers and their foreign patients that due to the language barrier, emotional support for the patient is mainly realised by creating a friendly atmosphere building on the willingness of the interlocutors to solve the challenges of MELF communication cooperatively and by the providers appearing professional, a pillar of which is being able to communicate the key medical information to their patients in an understandable way.

4.3. RQ1b – What challenges do providers and patients encounter when exchanging information in MELF communication?

The fundamental challenge in MELF encounters is the differences in providers' and patients' English language proficiency, involving deficiencies in the knowledge of medical terminology, using and thus having problems understanding accents, and not being able to describe medical concepts in detail. These difficulties lead to the need for increased adaptation, especially the adjustment of language and medical terminology to the patients' proficiency level and finding ways to talk about concepts that can be more culture-specific, such as addressing sensitive topics and naming foods or medications. All these adjustments require extra effort and time

from the provider, as the increased need for negotiation increases the time of the encounter and the anxiety of the provider due to the risk of misunderstanding. Furthermore, the involvement of trained or untrained interpreters and taking on extra workload by talking instead of colleagues who do not have good enough language skills to interact with foreign patients and translating certain parts of medical reports into English further increase the time spent with foreign patients, which results in unequal distribution of valuable healthcare resources.

4.4. RQ1c – What strategies do providers and patients use in order to ensure the proper exchange of information in MELF communication?

The heightened focus on information exchange in MELF encounters leads to extensive use of communication strategies, which not only focus on accommodation and clarification of verbal communication but aim to gain information in any way possible in order to obtain and provide vital medical information. Reaching the overall aim of exchanging information to provide medical care is realised with extensive co-operation through shared problem solving and mutual support, which helps create trust and security. Providers go to lengths to accommodate their language use, pronunciation, and medical terminology to their patients' proficiency levels and try multiple ways of expressing medical information with the help of synonyms, paraphrasing, reformulation, and plurilingual forms while trying to find a pace of talk that is understandable to their patients. These accommodation strategies are manifestations of TA and TC, as the use of these strategies is proof of the exploitation and adaptation of TUs to patients' needs. In line with this, back-channelling strategies are also used to explore patients' patterns of thinking by asking for clarification and double-checking understanding, and the use of repetitions involves various forms of TA and TC since variable reformulations of medical concepts via repetitions are utilised in MELF encounters. Non-verbal and observable or measurable information also tend to carry large amounts of medical information mainly with the aim of compensating for the language barrier, which is commonly the limited shared knowledge of medical terms. Similarly, drawings, writings, and other external sources of information are widely used with the same aim. Furthermore, involvement of interpreters in the interactions is another strategy typical in MELF situations, where external help is called for so that the loss of medical information can be prevented or reduced. Table 1 displays an extended version of Table 3 of the dissertation, complementing the strategies column with those found in the interview and survey data of the present study (marked with bold).

Table 1
Detectable processes of TA by reflection and communication strategies – extended version

	reflection	strategies
exploitation of schemata	• attempts at generating alternative TUs	• decomposition of longer instructions to smaller chunks • using plurilingual resources • **written and visual aids** • **reliance on observable, measurable parameters, and situational clues**
adaptation of schemata	• awareness of patients' perspectives • awareness of own perspectives • attempts at finding a common ground	• reaffirmation of medical terms • verbal and nonverbal repetition for reassuring understanding • asking for clarification • **accommodation to patient's proficiency level** • **accommodation to patient's accent/pronunciation** • **slowing down**
selection of appropriate TUs	• conscious adaptation of TUs to patients' perspectives • reflection on perceived effectiveness and appropriateness of TU use	• accommodation by simple language use • lexical simplification • **synonyms** • reformulation • paraphrasing

4.5. RQ2 How does TA/TC improvement affect TA/TC in MELF communication?

The EMP/EHP material designed to improve learners' TA and TC was found to increase the number of strategies used by the learners and, based on the data elicited in the study, the diversity of strategies pointing to the accommodation to patients' language use and conscious selection of TUs also increased. Although very limited data was found on other strategies, namely asking for clarification, slowing down, relying on metacommunication, and cooperation, and on strategies that would require real-life MELF interactions (e.g., reliance on measurable parameters), it is assumed that instances of TA and TC in EMP/EHP learners' communication prove that real-life settings would elicit the use of the latter strategies as well, since their awareness of patients' perspectives and of the need for increased accommodation could be elicited in simulated MELF interactions.

Overall, in experimental groups more prominent increase could be observed in almost all strategies. Compared to the control groups, they reported higher levels of simple language use, relying on and obtaining feedback, relying on gestures, using lay language and synonyms. Furthermore, they used a wider range of strategies, especially in exam settings. While control groups' strategies were limited to mainly obtaining feedback, using simple language and descriptions, and relying on gestures to some extent, experimental groups more consistently used seven strategies, which are obtaining feedback, using simple language, lay terms, synonyms, and descriptions, relying on gestures, and accommodation of language use. Furthermore, on their final oral tests all students (100%) in the treated groups used strategies that involved the exploitation and adaptation of language resources, while in control groups this number was only 50-70%. As for obtaining feedback, nearly twice as many students used this strategy in experimental groups than in the controls and relying on gestures or metacommunication showed similar results.

Furthermore, it could be observed in the weekly measured groups that over time they devoted less focus on grammatically precise language and more focus on strategic negotiation of meaning, especially the students in the experimental group. These allow us to conclude that designing EMP/EHP materials with the aim of developing TA, learners' consciousness of language use can be increased, their schemata can be made more flexible, and they can select from a wider range of strategies to solve discrepancies in MELF communication.

5. Implications for language pedagogy

The fundamental aim of this PhD research was to fill a niche in EMP/EHP practice, namely the need for MELF-oriented materials, and provide theoretical and empirical fundaments for including a TA/TC-focus in EMP/EHP materials so that teachers of EMP/EHP could revisit their methodological approaches to preparing EMP/EHP learners for provider-patient interactions in English. Accordingly, I would like to devote a separate chapter to concluding the language pedagogical implications of my findings.

5.1. The MELF perspective in EMP/EHP materials

Due to the ever-growing extent of ELF communication (Graddol, 2006), EMP/EHP classes must prepare health science students for MELF communication (Tweedie & Johnson, 2022). This involves that the focus should be shifted from NS norms of language use to how NNSs of English engage in the negotiation of meaning (Canagarajah, 2007; Pölzl & Seidlhofer, 2006).

Furthermore, it must be kept in mind that the main aim of MELF communication is the same as of healthcare communication; that is, the provision of quality patient care that is safe, timely, person-centred, and effective (WHO, 2020). For these aims, EMP/EHP learners must be prepared to transmit and exchange medical information precisely and within the shortest time possible. Therefore, using language that is understandable for patients is paramount and since medical information is coded in medical terminology, providers must be capable of using medical terminology in a way that it is adjusted to patients' medical knowledge and proficiency levels in English and that the negotiation does not take up unduly long time. Accordingly, EMP/EHP learners need to develop an automatically conscious use of medical terminology: terminological awareness.

Since MELF communication is highly dynamic and operates along temporary norms created in the process of interaction (Seidlhofer, 2011), the aim of EMP/EHP classes should not be to prepare learners for using English along NS norms but to be capable of exploiting and adjusting their medical terminology with an arsenal of communication strategies. Empirical investigations of this research and other studies on MELF communication (Mori & Shima, 2014; Ritala, 2022; Svennevig et al., 2019; Ting & Cogo, 2022; Tweedie & Johnson, 2022) found that the increased negotiation of meaning is realised with increased use of strategies. Therefore, EMP/EHP classes must provide learners with tasks that engage their strategic language use by coping with challenges similar to real-life MELF encounters. Moreover, EMP/EHP tasks must foster the development of the processes of TA, the exploitation of schemata and resources, the adaptation of these to patients' needs, and the selection of medical terminology appropriate to the MELF encounter.

5.2. The development and assessment of Terminological Awareness (TA)

For designing MELF-oriented tasks and assessments that focus on the development of TA, the framework of TA proposed in this dissertation is necessary. Accordingly, this section summarises the framework highlighting the aspects of the framework that can help EMP/EHP teachers implement it in their everyday teaching practice along with a summary of the pedagogical methodological recommendations listed in Section **Hiba! A hivatkozási forrás nem található.**.

Terminological awareness (TA) is a mental state where the healthcare provider's schemata automatically (i.e., with cognitive ease) offer medical terminology that is appropriate in a particular communicative situation. Since this mental state is a function based on schemata,

experiences in specialised language use enhance it continuously. In order for language users to develop schemata that ease communication, they must possess an openness to alternative perspectives that allow for the modification of their schemata. Alternative perspectives require consciousness, as cognitive strain and voluntary attention are necessary to break free from the patterns that schemata offer. This conscious state in the process of selecting medical terms is terminological consciousness, where the mind works with a reflective mode in order to find alternative uses of medical terminology for establishing appropriateness in a particular communicative situation, as in MELF provider-patient encounters. TC is turned on when the mind finds a discrepancy between expectations and the actual effect of language use, for example, when the patient does not seem to understand the term used.

The functioning of TA is based on three mental processes: the exploitation and adaptation of schemata and the selection of appropriate medical terminology. Table 1 is presented one more time here, summarising the theoretical and empirical findings of the dissertation on the detectable processes of TA in the reflections and communication strategies of healthcare providers and EMP/EHP learners. These processes form the ground for designing EMP/EHP materials and forms of assessment of MELF provider-patient communication.

Table 1
Detectable processes of TA by reflection and communication strategies – extended version

	reflection	strategies
exploitation of schemata	• attempts at generating alternative TUs	• decomposition of longer instructions to smaller chunks • using plurilingual resources • written and visual aids • reliance on observable, measurable parameters, and situational clues
adaptation of schemata	• awareness of patients' perspectives • awareness of own perspectives • attempts at finding a common ground	• reaffirmation of medical terms • verbal and nonverbal repetition for reassuring understanding • asking for clarification • accommodation to patient's proficiency level • accommodation to patient's accent/pronunciation • slowing down
selection of appropriate TUs	• conscious adaptation of TUs to patients' perspectives • reflection on perceived effectiveness and appropriateness of TU use	• accommodation by simple language use • lexical simplification • synonyms • reformulation • paraphrasing

Regarding task design in EMP/EHP materials, the following processes have been found to effectively improve learners' TA. See Table 3.

Table 2
The processes to be involved in EMP/EHP tasks to improve TA

Process	Aim	Example
Reflection on perceived effectiveness	Detect discrepancies Broaden perspectives	Watching or simulating MELF interaction and identifying factors influencing effectiveness
Reflection on frames of reference	Explore preconceptions	Discussing first impressions on patients
Reflection on pretextual assumptions	Raise consciousness of the relativity of terminological variation	Reflecting on the use of terminology and its assumed effectiveness
Conscious activation of TUs	Broaden the range of possible uses of terminology to express medical information	Finding alternative ways of expressing the same medical information to diverse imaginary patients
Conscious activation of alternative perspectives	Adjusting medical terminology to achieve appropriateness and effectiveness in MELF encounters	Engaging in simulated MELF provider-patient interaction both as providers and as patients
Reflection on novel, modified TU use	Assess effectiveness	Reflecting on simulated MELF encounters and asking for reflection from the interlocutors

Assessment of EMP/EHP learners' TA must be realised by eliciting and evaluating the use of communication strategies and reflection on the three main processes of TA. The number and diversity of MELF communication strategies must be assessed in line with the three TA processes in both learners' engagement in simulated MELF encounters and their reflection on how they worked toward realising effective communication with their simulated patients.

6. Conclusion

The dissertation has argued that current ESP and thus EMP/EHP practices fail to include the ELF perspective when creating EMP/EHP materials, which would be paramount as most of the time healthcare providers who are NNSs of English engage in MELF language use when they provide care to foreign patients. In line with this, it was proposed that needs analysis in EMP/EHP should be targeted at determining how the provision of quality patient care can be maximised in the challenging context of MELF communication. Therefore, this dissertation set out to fulfil this aim, first by reviewing the literature regarding MELF communication, its characteristics, challenges, and the communication strategies used to negotiate the exchange of

medical information. Additionally, after exploring how schemata govern the mental processes in MELF communication, it was proposed that terminological awareness is necessary for providers to effectively engage in MELF provider-patient communication.

Outlining the theoretical background, further research niches have been formulated, namely a more detailed exploration of MELF communication – due to the limited data on this matter in the literature, the creation of a MELF-oriented EMP/EHP classroom material with a focus on developing TA, and an assessment tool which can be used to evaluate the effectiveness of the material created and for assessing EMP/EHP learners' TA.

Accordingly, an empirical investigation was carried out with the help of two studies building on each other. The first study explored Hungarian healthcare providers' and their patients' experiences in MELF communication with the help of retrospective, qualitative interviews and open-ended, written surveys. Based on the findings of this investigation, the characteristics and challenges of MELF communication could be further detailed, which could serve as a ground for designing EMP/EHP tasks and simulations of MELF provider-patient interactions in the MELF-oriented, TA-focused EMP/EHP material. Furthermore, a collection of MELF communication strategies could be drawn up, which turned out to be more exhaustive than what had been described in MELF literature. The second study tested the effectiveness of the EMP/EHP material created with the help of a qualitative quasi-experimental research design, comparing groups of Hungarian physiotherapy students who studied English provider-patient communication either with the help of the MELF-oriented, TA-focused material (experimental groups) or without it (control groups). The assessment tool designed is recommended to be applied in everyday EMP/EHP practice as well, as it can explore how effectively EMP/EHP learners realise MELF provider-patient communication and how developed their terminological awareness is.

Finally, in line with the overall aim of the dissertation, pedagogical methodological recommendations were formulated regarding how the MELF-aspect should be incorporated into everyday EMP/EHP practices, the design of tasks and assessments. Furthermore, the pedagogical framework for the development and assessment of TA based on the three processes underlying TA and the use of strategies in MELF provider-patient communication was summarised for application in EMP/EHP practice.

Data collection and analysis in both studies of the present PhD research followed a qualitative research design, therefore, the limitations inherent in qualitative studies affect the findings

presented (Dörnyei, 2007). Nevertheless, there were other limitations of both studies outlined in this dissertation.

Regarding Study 1, the samples of Hungarian healthcare providers and foreign patients in Hungary were created with the help of opportunistic and snowball sampling, and although the end of data collection was determined based on saturation (i.e., no more new concepts were emerging during data analysis), it cannot be stated with confidence that all environments of MELF communication in Hungary and all aspects of this communication were included in the dataset. Furthermore, no connection between the subsamples of providers and patients could be evaluated, as most participants were anonymous contributors and in their accounts, no reference to healthcare facilities or providers was recorded to maintain anonymity and because the processes of communication were the focus.

Another methodological limitation of Study 1 was the use of retrospective accounts, as participants' memories of these MELF encounters may have been distorted by their perceptions and due to the time between the encounters and the retrospection. Moreover, it must be noted that these accounts were self-reported and could not be triangulated with observation due to their distance in time. In a similar vein, only the perceived success and not the effectiveness of the communication could be explored using this method.

Regarding Study 2, it would have been beneficial to involve more learner participants in the study, especially from other fields of healthcare as well. Furthermore, it must be emphasised that students with a proficiency level of English below B2 were not included in this study; therefore, additional investigation would be necessary to explore how the process-oriented framework can be implemented in groups with lower levels of English proficiency.

In terms of both the implementation of the EMP/EHP material and the assessment of TA, a second teacher or observer would have increased the quality of the findings by reducing the researcher's effect on the interpretations and diminishing the potential of researcher bias.

Further research would be beneficial to increase the quality of the results in both studies of this PhD work by addressing the limitations outlined above. Involving more participants would yield a broader understanding of the phenomenon of MELF provider-patient communication and its inclusion in EMP/EHP practice.

In line with Ting and Cogo (2022), MELF provider-patient encounters in Hungary should be videotaped and analysed in detail and both providers' and patients' accounts of the

communication should be elicited after the encounters so that a clearer and deeper understanding of the processes could be achieved. In addition, the method of videotaping would lead to better observation of EMP/EHP simulations of MELF communication. However, such studies would require strict ethical considerations and standards.

In order to draw more solid conclusions about the development and assessment of TA, further research is planned to test and validate both the theory and the assessment of TA/TC in larger-scale studies, with more students involved from other fields of health care and with lower proficiency levels of English. Furthermore, the investigations should be extended over the borders of Hungary and both the material and the assessment tools created should be tested in other linguacultural environments.

Following the steps of Eklics et al. (2019), more controlled simulations of MELF provider-patient encounters increase the quality of both the development of EMP/EHP learners' TA and the research on TA assessment. In addition, a more controlled investigation with a CDST (Complex Dynamic System Theory) approach (De Bot, Lowie, & Verspoor, 2007; Larsen-Freeman, 1997; Verspoor & Lowie, 2022) on how learners can improve their TC may be beneficial, as it would give insight into the individual differences and provide more details on the effects of certain tasks. Since assessment in (M)ELF is less widely researched (Harding and McNamara, 2017), further investigations of the issues elaborated in this study are highly necessary.

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