

The sense making process of non-core subject teachers in educational changes in China

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Abstract. Chinese education has undergone dramatic transformations in recent years. With the implementation of new educational technologies and reforms in curriculum and evaluation systems, Chinese non-core subject teachers face both challenges and opportunities. This qualitative study employs Interpretative Phenomenological Analysis (IPA) to explore how these teachers make sense of educational changes. The findings reveal that shifts in teaching practices have significantly impacted the formation of non-core subject teachers' professional self-identity and also the development of their teaching self-efficacy.

Keywords: self-identity, self-efficacy, non-core subject teachers, educational change

1. Introduction

The past few decades witnesses the vast development of education in China. According to the statistics revealed by the Department of Development Planning of the Ministry of Education of the People's Republic of China, there were approximately 498.3 thousand schools and 19 million teacher educators national-wide in 2023 and the overall number of enrolled students is 291 million [1]. The growth in the scale of education arouses people's concern on the quality of education. Therefore, reform measures have been taken by the government, such as reinforcing the curriculum construction, reducing the size of the class, governing after-school training, building a modernized vocational education system and so on, to address the most outstanding problems in all levels of education and to shift the examination-oriented education system to a more quality-oriented one which focus on the all-round development of students. Competences like practical skills and innovative ability have been identified as areas which need to be improved in order to raise China's global competitiveness [2]. To meet with the change of the focus of education, the basic curriculum as well as the proportion of each subject takes in the evaluation of students' academic performance fluctuate, which are all directly reflected by the consistently developing general layout of academic tests, especially the senior high school entrance examination and the college entrance examination. Though the practical measures for implementation of these tests vary in different provinces in China, in general the assessment of students' learning result is conducted in a "3+X" way, which means three fixed core subjects plus a certain number of alternative non-core subjects. Such arrangement makes the importance of subjects, especially non-core subjects, differs from the perspectives of students, thus the role which teachers of these non-core subjects play in both the learning process of students and their own sense making process becomes variational.

1.1. Purpose of the study

Education has long been one of the most concerned social focuses, but much attention is paid on the study of education itself, the learning process of students and the teaching behaviors of core subject teachers or teachers as a whole. The class hour of non-major subjects was frequently occupied by other teachers due to a deeply rooted stereotype that non-core subjects are not essential because of the proportion gap between core and non-core subject in the overall assessment system [3]. The situation has improved significantly as a result of the implementation of related policies. Nevertheless, a large number of non-core subject teacher educators do not fully and actively get involved in the learning process of students. And there are still comparatively inadequate studies conducted to look into the sense making process of non-core subject teachers on their personal and career identity. To continue and better develop their career as teacher educators, non-core subject teachers have to generate a comprehensive understanding of themselves as individuals in life and teachers in workplace. In particular, it is necessary for them to pinpoint the

role they are supposed to play in their students' learning process and clarify for themselves the potential things they can do hand in hand with the possibility of accomplishing these identified tasks.

Based on the above-mentioned situation and its purpose, this study is guided by three research questions:

- 1) How did they become non-core subject teachers?
- 2) How do non-core subject teachers describe their self-identity in their students' learning process?
- 3) How do non-core subject teachers see and adapt to educational changes, and develop their career as teacher educators?

2. Theoretical framework and literature review

This study aims to explore the current situation non-core subject teacher educators confronting to in educational changes, and unfold the sense making process of these teachers during their adaptation to such changes from the perspective of self-efficacy. To achieve this goal, two guiding theories are applied, namely the social identity theory of Tajfel and the self efficacy theory of Bandura.

The social identity theory was developed by Tajfel and Turner et al. in the 1970s as an interpretation of ethnocentrism of intergroup behaviors, indicating that group identity is the fundamental cause of intergroup behavior [4]. The theory suggested that there are three basic elements in the establishment of one's social identity, namely social categorization, social comparison and positive distinctiveness [5]. Social categorization literally refers to the categorization of individuals in the social context, or in simple words, it answers the question that which group does someone belong to. And the comparison between one's own group and other groups makes the categorization meaningful. It is suggested that no social group or category can be understood in isolation, but instead, it is defined through its relationships with other groups, leading to the concept of psychological distinctiveness, which emerges when certain groups establish their uniqueness in relation to those outside their own [6].

The self efficacy theory was proposed by Bandura, who defined self-efficacy as "a judgment of one's ability to execute a particular behavior pattern" [7]. According to the theory, individuals make self-efficacy judgements based on four sources of information. Initially, performance accomplishment is the sense of achievement gained from the process of successfully completing tasks. Vicarious experience, on the other hand, involves obtaining confidence or a sense of triumph from the successes of others. Social persuasion refers to the encouragement and self-assurance that arise from others' words, especially those with authority, helping individuals overcome self-doubt. Lastly, physiological and emotional states significantly influence how people assess their own abilities. In other words, when someone is in a positive and optimistic state, they are more likely to believe they can succeed in a given task, whereas a negative state can have the opposite effect.

3. Methodology

Non-core subject teachers working across various levels of schools in different regions, where policies differ, face distinct challenges. Their self-identification as teacher educators and their perceived self-efficacy in influencing students' learning processes also vary significantly. To gain a deeper understanding of how non-core subject teachers make sense of the changes they encounter through their life and work experiences and their attitudes toward these experiences, a qualitative approach using Interpretative Phenomenological Analysis (IPA) was employed. IPA acknowledges that individuals interpret the world uniquely, shaped by their personalities, past experiences, and personal motivations [8]. Through a careful examination of the unique and varied personal experiences of non-core subject teachers, IPA facilitates the identification and synthesis of common themes and patterns in the collected qualitative data.

3.1. Participants

To gain useful and representative data, which reveals the life and working experiences of non-core subject teachers across all levels of schools, a purposive and snowball sampling strategy was applied for the recruitment of participants in this study. At the beginning of recruitment stage, purposive sampling was used to find better-matched participants so as to improve rigour and convincingness of the study [9]. Three teachers in three different public schools were contacted at first, among whom the first two taught history and music in two different junior middle schools respectively and the third one taught history in a senior middle school. After all the three minor subject teachers agreed to share their personal experiences and their feeling on these experiences, the invitation letter, protocol, risk statement, and unsigned agreement were sent to each one of them. The snowball sampling technique was then applied, which required all the three participants to invite at least one more participant who met the criteria of this study. In the end, 7 non-core subject teachers were listed as the participants of this study.

All the participants met the following criteria:

- 1) Currently working as a full-time non-core subject teacher in school;
- 2) Confronted with the educational changes;
- 3) Influenced by the educational changes;
- 4) Non-vulnerable person.

3.2. Data collection

To develop a comprehensive understanding of non-core teachers' sense making process during educational changes, the qualitative research strategy of triangulation was employed in this study. First, separate in-depth interviews were organized for each of the 7 participants, during which semi-structural questions were asked to better unfold how the participants perceived and adapted to the educational changes they were facing. The locations of these separate interviews were decided by the participants themselves so that they might feel more relaxed and their feelings and thoughts could be better evoked [10]. With the approval of the participants, all the interviews were recorded with a smart voice recorder, each of which lasted from 36 minutes to 47 minutes. The contents were later automatically transcribed and then were safely preserved in a mobile hard disk drive. After all the individual interviews were finished, two focus groups, consisting of 3 and 4 participants respectively, were organized to make participants share their ideas and thoughts on educational changes in a more public context. Participants were also encouraged to describe the remarkable changes or items they confronted to. At last, all the data collected in both individual and group interviews was double-checked in separate member checking interviews to ensure its trustworthiness [11].

3.3. Data analysis

All the collected data went through a thematic analysis, aiming at identifying the patterns within participants' reported points of view, as well as their life and work experiences [12]. Following the suggestions of Terry et al. [13], the recordings and their scripts were reviewed carefully first to enhance the researcher's familiarity of the data. After the familiarization of the data, the open coding techniques was adopted to analysis and break down the data into separate subthemes [14]. Axial coding was then applied to synthesize the large amount of coded data, forming meaningful and structured themes according to the potential relationship of the subthemes gained in the open coding phase [15].

4. Findings and discussion

Though the participants of this study have different life and work environments, the data gained from their interview show some common features. With careful examining and defining, 3 themes and 4 subthemes were generated, reflecting the general sense making process of non-core subject teachers when confronting to educational changes, as outlined in Table 1.

Table 1. Themes and subthemes

Sense Making Process of None-core Subject Teachers
4.1. Professional Self-concept Formation
4.1.1. Role Identity Reconstruction
4.1.2. Subject-specific Value
4.2 Teaching Self-efficacy Development
4.2.1. Vicarious Learning from Peers
4.2.2. Management of Stress and Uncertainty
4.3. Autonomy Negotiation

4.1. Professional self-concept formation

4.1.1. Role identity reconstruction

Among all the impacts educational changes bring to non-core subject teachers, the most urgent one concluded in this study is the professional self-concept of this group of teachers. The development of educational technology has been changing the teaching practice dramatically. Many of the things, which were traditionally done by teachers, such as providing feedback and the evaluation of assignment or test are now done by machines, especially artificial intelligence. The role non-core subject teachers play in students' learning process is experiencing great changes like:

...My subject doesn't carry much weight in the students' entrance exams, so they tend to think that as long as they have a rough idea of the answer, it's good enough when doing homework for my class. Nowadays, for most problems they encounter, they just go straight to AI. The answers AI provides are usually good enough to meet their needs, so very few students actually come to me for help. A lot of the time, I feel like I'm not even a teacher anymore because I completely lack that sense of presence as an educator. (Participant #2)

Previously, teachers were supposed to facilitate students' academic success by delivering knowledge or introducing useful learning methods. Now, however, as students hold different attitudes towards various subjects, in many cases, teachers of non-core subjects need to accept the fact that they are no longer that decisive to students in terms of academic performance, just as reported in the interviews:

For both me and the subject I teach, it's more about providing them with a sense of relaxation and helping them adjust their mood, rather than being like a main subject teacher who imparts knowledge, solves their doubts, and ultimately plays a role in shaping their future through education. (Participant #1)

It is obvious that with the application of educational technology and the ongoing revolution of teaching practices and evaluation system, teachers, especially non-core subject teachers will develop new understandings of who they are and who they should be as professionals in education.

4.1.2. Subject-specific value

Another thing worth noticing is the value teachers attach to their own subject. There have long been heated debates on whether the knowledge students acquired in schools will be useful in their future life and work. Such controversial public opinions on school education have had great impacts on not only students, but also teacher educators. Students now have the opportunity to choose the subjects they like or are good at, thus better allocating the time and energy they spend on each of these subjects. Such a flexible curriculum and evaluation system contributes to the shunt of education resources, but at the same time, it weakens the value of certain non-core subjects. In other words, non-core subject teachers need to convince not only students but also themselves that the subject they teach is well-worth learning. One of the participants said:

During my classes, I often tie the content to real-life examples that are relevant to the students' daily lives. This way, they realize that my subject is actually useful, and they're more willing to pay attention. When they show more interest in the class, it motivates me even more to find better examples and make my lessons even better. (Participant #7)

As is showed in the case above, the shift of students' learning focus influences the teaching practice of non-subject teachers. Meanwhile, a different teaching style in return affects students' interest in learning, leading to a virtuous circle between students and teachers. Accordingly, it should be noted that a negative circle may also exist if non-core subject teachers do not cherish their own course. Taking this into consideration, the subject-specific value of non-core subject teachers, to some extent, seems to be more decisive than that of students.

4.2. Teaching self-efficacy development

Among the four sources of self-efficacy, non-core subject teachers involved in educational changes are more likely to generate self-efficacy beliefs via vicarious experience and emotional states.

4.2.1. Vicarious learning from peers

Vicarious experience plays an important role in the development of one's self-efficacy belief, especially when the task or the difficulty one faces looks overwhelming. The current changes taking place in education often put non-core subject teachers in a dilemma that they either lack the ability or the necessary resources to better continue their teaching career. A participants complained in the interviews that:

Right now, the school is making a big push for digital teaching and has spent a lot of money on software and hardware. Some of these tools are actually quite suitable for my subject. But resources are limited, and with so many people needing them, they're naturally prioritized for main subject teachers or those involved in competitions and events. (Participant #4)

In these cases, it is really difficult for non-core subject teachers to maintain their confidence in getting rid of depressing situation themselves. One thing that was repeatedly mentioned in the interviews is the hope gained from peer success. For example:

I really want to know how a teacher for a subject like mine is supposed to teach in today's environment. (Participant #3)

There's another teacher for a non-core subject at our school who's amazing. She's won all kinds of awards and climbed the ranks quickly. I've actually learned a lot of useful things from her. (Participant #4)

From the above statements, a safe conclusion can be drawn that peer success may have a demonstration effect on those struggling in dealing with educational changes and also serve as a model, which provides clear and practical solutions, for others to follow.

4.2.2. Management of stress and uncertainty

According to the self-efficacy theory, keeping a positive and optimistic mood will benefit the development of one's self-efficacy. However, the complexity of advanced educational technologies and higher demands of modern education are arousing greater stress for non-subject teachers. Moreover, the shift of education focus mentioned above has made non-subject teachers even more uncertain about their career. Such emotional states were also mentioned in the interviews:

There are so many demands with the current teaching reforms. We're expected to make everything student-centered while also adopting all these new ideas and teaching methods. Even the textbooks have been updated significantly. Sometimes, the pressure is really overwhelming. (Participant #1)

The reduced weight of my subject in exams has definitely affected me a lot. My class is becoming more and more marginalized, and I honestly don't know if the school will still need this many teachers for my subject in a few years. Who knows, maybe I'll have to start teaching something else down the line. (Participant #5)

However, it should be pointed out that not all non-core subjects are experiencing marginalization. Some previously less valuable subjects in the overall evaluation system such as PE and labor skills are getting increasingly more attention. The teachers of these subjects are therefore showing a more positive attitude towards educational changes and also a higher self-efficacy. In terms of this issue, one said:

The government is placing more and more emphasis on holistic education, and parents are now paying attention to things beyond just their kids' grades. People have started to have higher expectations for my subject. Now, with policies ensuring my class hours, it's no longer like before when my lessons would often get taken over. I finally feel like I've earned some respect, and that definitely gives me more motivation. (Participant #6)

4.3. Autonomy negotiation

The last first level theme generated from the interview data in this study is autonomy negotiation, which refers to how non-subject teachers strive to find their own place in the changes. Instead of keeping silent and doing nothing, many non-subject teachers are determined to make a difference. The participants in this study reported a growing tendency of non-core subject to get more involved in the decision-making process of the future educational changes.

To be honest, we non-core subject teachers used to have a pretty low status. No one really listened to our opinions or ideas. Even we felt there was no point in making changes—keeping things as they were seemed fine because, honestly, it wouldn't make much of a difference. But now, the situation has forced us to change. If you don't adapt, you risk falling behind or even being eliminated altogether. (Participant #7)

More importantly, to ensure a better career development, non-core subject teachers are looking for stronger supportive networks. They no longer wait for resources or supports to come, but instead seek for a better corporation with others. What's more, they are also more open to express their own demands for necessary teaching resources and some even start to build resources themselves.

5. Conclusion

Based on the social identity theory and the self-efficacy theory, this study finds that non-core subject teachers are fulfilling their duties as teacher educators in a different way. The degree of recognition for their own subject also fluctuates, prompting them to showcase the subject value and attach more to it. Meanwhile, the interviews of this study show that non-core subject teachers' teaching self-efficacy is mainly under the influence of vicarious experience and, to a large extent, decided by their emotional states.

5.1. Significance of the study

This study addresses both the theoretical and practical gap on the sense making process of non-core subject teachers during educational changes. And the significance of this study lies in the following three aspects.

First, this study discusses the roles, self-efficacy and career identity of non-core subject teachers from a teacher-oriented angle. The shifting roles of a teacher has long been a popular topic for researchers in the educational field. Traditionally, a teacher was

considered as a helper, a facilitator, a manager, a monitor, or a strategy instructor [16]. Higgs pointed out that the teacher took the role of a facilitator, who fostered a supportive and motivating learning environment, and served as a resource, encouraging students to reach their full potential, and guiding them in understanding institutional expectations and requirements [17]. However, the above mentioned conclusions are all drawn from the perspective of students while neglecting the self and career identity of teachers themselves. This study focuses more on teachers' points of view on the defined topics rather than those of others, so that it, to some extent, contributes to a better understanding of the self-efficacy and career identities of teachers.

Second, this study illustrates how non-core subject teacher educators understand and respond to the changes, more precisely the educational reform. Teachers' interpretation and implementation of instructional policies are shaped by their existing knowledge, the social environment in which they operate, and the ways in which they engage with the policy or reform message [18]. The fact that more organizational and educational changes are to come in all probability makes it necessary for teachers to get themselves well-prepared for the upcoming challenges. By exploring and understanding the feelings and behaviors of non-core subject teacher educators when dramatic changes happen in their work field, their sense making process is clearly displayed. This study provides an unambiguous picture of the current situation of non-core subject teachers and the difficulties they are confronting to, in order to help those teachers adapt to the changes.

Third, this study concentrates on a more specific group of teachers who are not small in number but haven't been paid enough attention to. Tajfel argued that from the moment an individual was born, they were faced with a web of social groups and relationships into which they must integrate themselves [19]. The data collected in this study provides references for further studies on different groups of teacher educators who may have difficulties in fitting themselves into their confronting networks. It also has the model significance for any non-core subject teachers to "find, create and define their place in these networks" [19].

5.2. Limitations

Though this study contributes to a better understanding of non-core subject teachers' sense making process in a specific period of time, there are still deficiencies and limits which could be improved in future studies.

First, all the seven participants in this study are working in developed cities in the eastern coastal areas of China, which means they share similar working conditions and the problems they face have much in common. More participant with various backgrounds should be included in future studies to better present the overall situation of non-core subject teachers in educational changes.

Second, a qualitative analysis was employed in this study to unfold how non-core subject teachers understand their role in students' learning and explore their perceived self-efficacy in educational changes. An integration of both qualitative and quantitative approaches could also be considered to display the exact connections between the synthesized themes intuitively.

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